TAB	DESCRIPTION	ACTION
1	SUPERINTENDENT'S UPDATE	Information Item
2	SCHOOL DISTRICT PROPERTY ALTERATION, MERIDIAN- KUNA	Motion to Approve or Disapprove
3	SCHOOL DISTRICT PROPERTY ALTERATION, PLUMMER/WORLEY- COEUR D'ALENE	Motion to Approve or Disapprove
4	SCHOOL DISTRICT PROPERTY CORRECTION, WEST BONNER-LAKELAND	Motion to Approve
5	IDAHO CONTENT STANDARDS FOR SCIENCE	Information Item
6	PROPOSED RULE- IDAPA 08.02.03.004, RULES GOVERNING THOROUGHNESS, INCORPORATED BY REFERENCE- CONTENT STANDARDS	Motion to Approve
6a	REVISION OF INFORMATION, COMMUNICATION, AND TECHNOLOGY STANDARDS	Motion to Approve
6b	REVISION OF MATH STANDARDS- COMMON CORE	Motion to Approve
6c	REVISION OF ENGLISH LANGUAGE ARTS STANDARDS- COMMON CORE	Motion to Approve
7	PROPOSED RULE- IDAPA 08.02.02.018, RULES GOVERNING UNIFORMITY, STANDARD ELEMENTARY CERTIFICATE	Motion to Approve
8	APPOINTMENTS TO THE PROFESSIONAL STANDARDS COMMISSION	Motion to Approve

9	GEORGE FOX UNIVERSITY MASTER OF ARTS IN TEACHING FOCUSED REVIEW TEAM REPORT	Motion to Approve
10	IDAHO DEPARTMENT OF CORRECTION ROBERT JANSS SCHOOL WAIVER REQUEST	Motion to Approve

## SUBJECT

Superintendent of Public Instruction Update to the State Board of Education

## **BACKGROUND/DISCUSSION**

Superintendent of Public Instruction, Tom Luna, will provide an update on the State Department of Education.

#### **BOARD ACTION**

This item is for informational purposes only. Any action will be at the Board's discretion.

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## SUBJECT

Alteration of School District Boundaries from the Kuna School District to the Meridian Joint School District

## APPLICABLE STATUTE, RULE, OR POLICY

Sections 33-308, Idaho Code IDAPA 08.02.01.050, Rules Governing Uniformity

## BACKGROUND/DISCUSSION

Section 33-308 of Idaho Code prescribes the procedure for excision and annexation of land from one school district to another. The residents of the Pear Blossom Subdivision have submitted a petition for the excision/annexation of property from the Kuna School District to the Meridian Joint School District in compliance with this statute. If the proposal is approved, it will be sent to the electors of the area affected.

The petition proposes to excise approximately eight (8) acres from the Kuna School District and annex it into the Meridian Joint School District. The Pear Blossom Subdivision, which is currently comprised of twenty (20) lots, is divided between the two school districts. Nine (9) children from five (5) families in the subdivision currently attend Meridian schools, and none of the subdivision children currently attend Kuna schools. The petitioners would like all the children in the subdivision to attend the school in the same district.

The Kuna Board of Trustees considered the petition and voted unanimously to reject the petition. The Meridian Board of Trustees considered the petition and voted 4-1 to approve the petition.

Pursuant to IDAPA 08.02.01.050, a hearing officer was appointed to review the request and a public hearing was held. The hearing officer concluded that it would be inappropriate to approve a change in school district boundaries based on a developer's decision to create lots divided by district boundaries. The hearing officer also concluded that it would set a bad precedent to create a short jog in the established district boundaries to allow five (5) homes from one district to move into another district, particularly when the remaining land owned by the same developer south of the current subdivision will still include lots in the Kuna School District. The hearing officer's recommendations incorrectly state the area to be excised and annexed is 63.49 acres. However, the actual area is only approximately 8 acres. The developer is not planning to develop the remaining portion of the subdivision due to changes in the market and the cost effectiveness of developing a sewage treatment plant. A letter attesting to this is attached. The hearing officer's recommendation and exhibits are also attached. These include the documents as originally submitted to the State Department of Education. A signed list of petitioners and a letter from the Meridian Joint School District addressing the bonded indebtedness will be provided prior to the State Board meeting.

## ATTACHMENTS

Attachment 1 – Hearing Officer's Recommendation	Page 3
Attachment 2 – School Board of Trustee Recommendations	Page 11
Attachment 3 – Petition to Alter the District Boundaries	Page 15
Attachment 4 – Letter from Subdivision Developer	Page 21

## **BOARD ACTION**

A motion to \_\_\_\_\_\_ the findings and conclusions in the recommended order issued by the hearing officer and to \_\_\_\_\_\_ the excision and annexation of property from the Kuna School District to the Meridian Joint School District.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_ No \_\_\_\_

JEAN R. URANGA Hearing Officer 714 North 5th Street P.O. Box 1678 Boise, Idaho 83701 Telephone: (208) 342-8931 Facsimile: (208) 384-5686 Idaho State Bar No. 1763

BEFORE THE IDAHO DEPARTMENT OF EDUCATION

In the Matter of the Petition ) of PEAR BLOSSOM SUBDIVISION ) regarding: ) KUNA JOINT SCHOOL DISTRICT #3 ) and ) MERIDIAN JOINT SCHOOL DISTRICT) #2,

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER

This matter is before the Hearing Officer based upon the Petition on behalf of residents of the Pear Blossom Subdivision, signed by Aaron Hale, President of the Pear Blossom Subdivision Homeowner's Association. An evidentiary hearing on the Petition was conducted March 1, 2010, at 9:00 o'clock a.m. Jay Hummel, Superintendent of the Kuna School District, appeared representing the Kuna Joint School District No. 3. Bruce Gestrin, Assistant Superintendent for the Meridian Joint School District No. 2, appeared representing the Meridian School District. Aaron Fuhriman and Carol Fuhriman appeared representing the Pear Blossom Subdivision.

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER - 1

#### FINDINGS OF FACT

The Petition on behalf of the Pear Blossom Subdivision dated December 8, 2009, indicates the subdivision is located off Meridian Road between Lake Hazel and Columbia Roads. The Petition was submitted by the Homeowner's Association President, Aaron Hale. The Petition proposes to remove approximately 63.49 acres from the Kuna School District and have that property annexed into the Meridian School District.

The Pear Blossom Subdivision is currently comprised of twenty (20) lots. The Meridian/Kuna school district boundary cuts through the subdivision. The Petition acknowledges the school district boundaries existed long before the subdivision was created. Nine (9) children from five (5) families within the subdivision currently attend Meridian schools and none of the subdivision children currently attend Kuna schools.

The Petition further states there are currently nine (9) buses driving through the subdivision every day to pick up school children for both districts. The Petition notes there are currently eight (8) families with twenty-three (23) children in the subdivision and three (3) lots have been sold to families who have a combined seven (7) children.

A review of the map attached to the Petition indicates that the developer of the Pear Blossom Subdivision elected to create a road that follows the school district boundary for a distance and then veers south off of the school district boundary creating the current problem of children from the same subdivision being in

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER - 2

different school districts.

The Petition did not include information regarding the market value, for tax purposes, of the two districts prior to the requested transfer and of the area to be transferred as required by IDAPA 08.02.01.04.

Aaron Fuhriman appeared on behalf of the Petitioners. He has three (3) children who are not currently school age, but who will be in the Kuna school district when they start school. Mr. Fuhriman testified the school district boundary does not follow the road and cuts through some lots. Five (5) lots in the twenty (20) lot subdivision are located in the Kuna School District. An additional four (4) lots are cut in half by the school district boundaries. Testimony was presented that, when a school district boundary divides a lot, the children attend school in the school district where the master bedroom of the house is located.

Mr. Fuhriman testified his children are in the Kuna School District, but when he purchased the property, the closing documents indicated their property was in the Meridian School District. The Fuhrimans want all children in the current subdivision to attend school in the same district. He further testified that having two school districts in the same subdivision results in an excessive number of buses driving through the subdivision. Next year there will be ten (10) buses per day driving through the subdivision. Mr. Fuhriman argued that children who live in the same subdivision do better academically if they attend school with their friends from their neighborhood. He argued it was in the best interests of

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER - 3

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all children in the subdivision to attend the same schools. In response to an inquiry by the Hearing Officer, Mr. Fuhriman admitted that the developer of the Pear Blossom Subdivision intends in the future to develop the remaining, adjoining property to the south which he owns. That property lies south of the proposed boundary line and all of those additional lots would be located in the Kuna District.

Pursuant to Idaho Code §33-308, the Petition was presented to the Board of Trustees of the Kuna School District and the Meridian School District. By letter dated December 15, 2009, the Joint School District No. 2 in Meridian advised the State Department of Education that their Board of Trustees approved the proposed Petition.

By letter dated January 14, 2010, the Kuna Joint School District No. 3 notified the State Department of Education that their Board of Trustees voted to reject the Petition.

Jay Hummel, the Superintendent, testified on behalf of the Kuna School District. He argued the school district boundaries were set long before the subdivision was developed and that information was easy to come by. Purchasers of property in that area should have known where the school boundaries were when they purchased. Mr. Hummel argued that school district boundaries often divide subdivisions and create problems when new subdivisions are developed and that does not justify a boundary change. He further argued the number of buses should not make much difference to a decision and problems of excessive busing are a matter of state

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER - 4

policy which need to be addressed at the state level. He noted some charter schools and magnet schools also have buses which pick up students with no regard for school district boundaries. Mr. Hummel further state that open enrollment allows residents of the Pear Blossom Subdivision who are in the Kuna School District to petition to have their children attend Meridian Schools.

Bruce Gestrin testified on behalf of the Meridian School District and stated the Meridian District supports granting the Petition. He stated that, while open enrollment is a potentially viable option, there is no guarantee that can be done in the future if room is not available at a given school.

#### CONCLUSIONS OF LAW

Idaho Code §33-308 establishes the procedure for requesting excision and annexation of school district territory. Subsection (1) allows one-fourth or more of the school district electors, residing in an area of not more than 50 square miles, to petition for annexation of an area from one school district to another contiguous school district. In this case, the Petition was submitted by the homeowner's association, not by one-fourth of the electors residing in the area proposed to be excised from the Kuna District and annexed to the Meridian District.

Idaho Code §33-308(4) provides that the State Board of Education shall approve the proposal if two conditions are met. First, the excision and annexation must be in the best interest of the children residing in the area described and second, excision must not leave a school district with a bonded debt in excess of

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER - 5

the limit prescribed by law. If a proposal is approved, the matter is then submitted to the school district electors residing in the area described.

No testimony was presented on whether the proposed annexation would have any effect on the bonded indebtedness of either district.

The administrative rules of the State Board of Education further clarify what criteria will be considered in determining the best interests of children residing in the area IDAPA 08.02.01. IDAPA 08.02.01.03.b sets forth four factors to be considered in determining the best interests of the children residing in the area described.

With respect to the first factor, no evidence was presented by any parties regarding the safety and distance of the children from the applicable schools.

With respect to the second factor, Mr. Fuhriman testified his children would be happier and would be more successful in the Meridian School District. The Kuna District is opposed to the petition and Meridian District supported the petition.

With respect to the third factor, no clear evidence was presented regarding the adjustment of the children to their home and neighborhood environment.

With respect to the fourth factor, the evidence indicates that the Meridian School District is willing to accept the children into its school district.

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER - 6

SDE

No compelling evidence was presented to conclude the proposed boundary change would be in the best interests of the children residing in the area.

The Hearing Officer concludes that this is an unfortunate circumstance which resulted from the developer's decision on where to locate the main road into the subdivision and the developer's decision to create lots which are divided by the district boundaries. It would appear to be inappropriate to approve a change of school district boundaries any time a developer makes such choices.

The Hearing Officer further concludes it would set a bad precedent to create a short jog in the established district boundaries to allow five (5) homes from one district to move into another district, particularly when the remaining land owned by the same developer south of the current subdivision will still include lots in the Kuna School District. Changing the boundary now will still result in children in one subdivision attending schools in different districts.

#### RECOMMENDED ORDER

Based upon the foregoing, it is recommended that the Petition for Excision from the Kuna School District and Annexation to the Meridian School District be DENIED.

DATED This 18 day of March, 2010.

JEAN R. URANGA

Hearing Officer

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER - 7

#### CERTIFICATE OF MAILING

I HEREBY CERTIFY That on this 3 day of March, 2010, I served true and correct copies of the foregoing FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER by depositing copies thereof in the United States mail, postage prepaid, in envelopes addressed to:

> Aaron and Carol Fuhriman 7262 S. Angel Way Meridian, Idaho 83642

Jay W. Hummell Superintendent Kuna Joint School District No. 3 1450 Boise Street Kuna, Idaho 83634

Bruce Gestrin Assistant Superintendent Joint School District No. 2 1303 E. Central Drive Meridian, Idaho 83642

Tom Luna State Superintendent Public Instruction State Department of Education P.O. Box 83720 Boise, Idaho 83720-0027

JEAN R. URANGA

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDED ORDER - 8

#### KUNA JT. SCHOOL DISTRICT NO. 3

1450 Boise Street Kuna, Idaho 83634 Phone: (208)922-1000 FAX: (208)922-5646

Joy W. Hummel Superint/Indent

Wandy Johnson Assistant Superintendent

January 14, 2010

Superintendent Tom Luna State Department of Education P.O. Box 83720 Boise, Idaho 83720

RE: 33-308 Excision and Annexation of Territory

Dear Mr. Luna;

At our regular scheduled School Board meeting held on January 12, 2010, the Board considered a petition to excise from the Kuna Jt. School District No. 3 for Pear Blossom Subdivision homeowners. After a discussion, the Board voted unanimously to reject the petition.

Per Idaho Code 33-308 I have enclosed a copy of his petition and an unofficial copy of the minutes from this meeting.

Please let me know if I can be of further assistance.

Respectfully,

Michele M. Gumm Clerk, Kuna Board of Trustees

Enclosures

The Kara School District implies care sugges to become a inviting starter and a contributing, regardance sugge

MINUTES OF A REGULAR MEETING OF THE BOARD OF TRUSTEES OF KUNA JT. SCHOOL DISTRICT NO. 3, HELD IN THE UNOFFICIAL KUNA HIGH SCHOOL LIBRARY, KUNA, IDAHO January 12, 2010

UNOFFICIAL

SCHOOL BOARD TRUSTEES:

Jim Ford, Chairman Carl Ericson, Vice-Chairman Kevin Gifford, Trustee Ginny Greger, Trustee in at 5:37 p.m. David Case, Trustee - Absent

SUPERINTENDENT & DISTRICT STAFF:

Jay Hummel, Superintendent Wendy Johnson, Assistant Superintendent Bryan Fletcher, Treasurer Michele Gumm, Clerk

#### I. CALL MEETING TO ORDER

Chairman Ford called the session to order at 5:30 p.m. Dinner was served.

Vice-Chairman Ericson moved to go into executive session at 5:44 p.m. Trustee Gifford seconded the motion. Vote Held: Jim Ford, yes; Ginny Greger, yes; Kevin Gifford, yes; and Carl Ericson, yes. Motion passed.

#### II. EXECUTIVE SESSION:

BE IT RESOLVED, that the Board of Trustees of Kuna Jt. School District No. 3 recess from an open meeting into executive session pursuant to Section 67-2345, Idaho Code, in order to discuss personnel, negotiations, student matters or legal matters as authorized by Section 67-2345 (1) (b) Idaho Code.

BE IT FURTHER RESOLVED that following the executive session the Board will reconvene in to open session for the purpose of conducting further business or for adjournment of the meeting. Vote being had on the above and foregoing resolution, and the same having been counted and found to be as follows: (Conduct Vote), and no less than two-thirds (2/3) of the membership in favor thereof, the Chairman declared said resolution adopted.

PERSONNEL MATTERS: Personnel matters were discussed.

Vice-Chairman Ericson moved to go into open session at 6:35 p.m. Trustee Gifford seconded the motion. Vote Held: Jim Ford, yes; Ginny Greger, yes; Kevin Gifford, yes; and Carl Ericson, yes. Motion passed.

#### **III. OPEN SESSION**

The Board adjourned on break until Regular session at 7:00 p.m.

#### IV. REGULAR SESSION

#### OTHER DISTRICT STAFF:

Devan DeLashmutt, Administrator of Information Technology; Layne Saxton, Project Manager; Sharee Adkins, Communication & Grants Coordinator; Karlynn Laraway, Student Data & Assessment Coordinator; Deb McGrath, Principal Kuna Middle School; Shawn Patterson, Shana Kerbs, Kori Frahm and Deb Bradburn, Physical Education Teachers/Leaders; Jen Wright, KMS Teacher and KEA Co-President, and Ben Gleaton, Facilities Assistant.

REGULAR SCHOOL BOARD MEETING MINUTES - January 12, 2010 UNOFFICIAL

2. EXCISION & ANNEXATION PETITION: The Board voted on the previously presented petition to request a school boundary change of Pear Blossom Subdivision into the Meridian School District. (EXHIBIT C)

Vice-Chairman Ericson moved to deny the petition for Pear Blossom Subdivision. Trustee Gifford seconded the motion. Vote Held: Jim Ford, yes; Ginny Greger, yes; Kevin Gifford, yes; and Carl Ericson, yes. Motion passed.

#### H. NEW BUSINESS, DISCUSSION/ACTION ITEMS:

**1. PHYSICAL EDUCATION GRANT/FITNESS PROGRAM UPDATE:** Sharee Adkins and PE Teachers/Leaders Shawn Patterson, Shana Kerbs, Kori Frahm and Deb Bradburn updated the Board on the grant fitness programs and the positive impact of implementation on the students. Post test scores show noticeable improvement and the overall student excitement for the program is uplifting. The vision is to have an accredited health and PE model.

2. FEDERAL RACE TO THE TOP GRANT: The Board was asked to make a decision on Kuna School District participating in the Race to the Top Federal grant. Board members, Jen Wright current KEA Co-President, and Administration discussed the pros and cons of the grant. (EXHIBIT D)

Trustee Gifford moved to enter the Memorandum of Understanding ("MOU") to the state for the districts participation in the Race to the Top grant. Vice-Chairman Ericson seconded the motion. Vote Held: Jim Ford, yes; Ginny Greger, yes; Kevin Gifford, yes; and Carl Ericson, yes. Motion passed.

**3**. **AUDITORIUM FACILITY USE/GRAND OPENING PLAN**: Wendy Johnson informed the Board of the upcoming Auditorium Open House scheduled for 7:00 p.m. on February 22, 2010. First official performance will be February 25-26, 2010 with students performing *Oklahoma*. Mrs. Johnson asked the Board to think about Auditorium usage, rental, prices, management and to bring input to the next meeting to help build an Auditorium usage plan.

**4. TEED EMERGENCY CLOSURE:** Karlynn Laraway, Student Data & Assessment Coordinator, spoke to the Board concerning the evacuation of Teed Elementary on December 10, 2009 due to ruptured pipes. Mrs. Laraway requested the Board take action to declare emergency closure as not to be impacted by the state financially. (EXHIBIT E & F)

Vice-Chairman Ericson moved to declare emergency closing for Teed Elementary on December 10, 2009 and submit certificate to the State. Trustee Greger seconded the motion. Vote Held: Jim Ford, yes; Ginny Greger, yes; Kevin Gifford, yes; and Carl Ericson, yes. Motion passed.

I. GOOD OF THE ORDER: None



# JOINT SCHOOL DISTRICT NO. 2

1303 E. CENTRAL DRIVE MERIDIAN, IDAHO 83642

Dr. Linda Clark Superintendent

December 15, 2009

State Department of Education PO Box 83720 Boise, ID 83720-0027

To Whom It May Concern:

The Board of Trustees, Joint School District No. 2, approved a petition proposed by the residents of Pear Blossom Subdivision to alter the district boundaries as described in the attached documents. The meeting was held on December 15, 2009 and the vote was four to one in favor of the recommendation.

Questions regarding this information may be directed to me at 350-5022 or Eric Exline at 350-5023.

Sincerely,

Man 1sh

Trish Duncan Clerk of the Board

Enclosures

(208) 855-4500 FAX (208) 350-5962

December 8, 2009



Kuna School District Board of Trustees 1450 Boise Street Kuna, ID 83634

Dear Members of the Board of Trustees of the Kuna School District:

The purpose of this letter is to propose for approval a change in the school district boundaries. Per Idaho Statue Title 33 Chapter 3 (33-308), we have included the following information to assist with your recommendation to the State Board of Education.

- A. The names and addresses of the petitioners;
  - a. Pear Blossom Subdivision which is located off Meridian road between Lake Hazel and Columbia Roads. Our subdivision homeowner's association president is Aaron Hale who is located at 7110 S. Angel Way Meridian, ID 83642.
- B. A legal description of the area proposed to be excised from one district and annexed to another contiguous district;
  - a. See attachment A
- C. Maps showing the boundaries of the districts as they presently appear and as they would appear should the excision and annexation be approved;
  - a. See attachment B
- D. The names of the school districts from and to which the area is proposed to be excised, and annexed;
  - a. We would like the entire subdivision to be annexed into the Meridian school district. This would remove several homes from the Kuna school district.
- E. A description of reasons for which the petition is being submitted; and
  - a. As shown on the attached maps, our subdivision only has 20 lots for houses and the subdivision is in a remote area with no larger subdivisions nearby. As a result of this, the families in our subdivision know each other well and we are often hosting activities which include all subdivision families. Thus, our children know and enjoy playing with their neighbors. We feel this is good for our children and we want to encourage the "neighborly" atmosphere and our children's friendships. Since schools are where our children will spend a large part of their time, we would like them to all attend the same district.

As the school district boundaries were in place long before the subdivision, the current school district boundaries divide our Subdivision between the Kuna and the Meridian school districts (see attachment B). Due to the children's ages and home locations, we have 9 subdivision children (5 families) currently attending the Meridian school district and no subdivision children currently in the Kuna school district. Since all of the families with children currently in school are already attending the Meridian school district, we would like this district to be the school district for all of our subdivision's children.

Additionally, there are currently 9 buses driving through our subdivision every day. The buses are the elementary and middle school buses in the morning and afternoon for the Meridian and Kuna school districts plus the Meridian kindergarten bus. The Kuna buses come through the subdivision as a turn-around after picking up 3 children from the driveway of the subdivision (these children live in the Meridian school district, but were told that since their bus stop was in the Kuna school district they were to go to the Kuna schools). If a change does not occur, this number would increase to 10 buses for the 2010/11 school year due to the need for the Kuna kindergarten bus also. Not only is this an excessive number of buses going through such a small subdivision, it is an unnecessary expense for schools and it is confusing for our school children and the younger children waiting for their siblings to get home.

F. An estimate of the number of children residing in the area described in the petition.

a. There are currently 8 families with 23 children living in our subdivision. Additionally, 3 lots have been sold to families who have a combined 7 children. The remaining lots are either held by the developer (6 lots) or in foreclosure (2 homes). Of the 30 children in (or soon to be in) the subdivision, 27 children are age 10 and younger.

There are 6 of the 23 children currently living in our subdivision that this proposal would affect. It would also affect all 7 of the children in the families who have purchased lots but not yet built homes in the subdivision.

An overwhelming majority of the affected families in our subdivision are in favor of this change.

We thank you in advance for your consideration of our proposed change.

The Pear Blossom Subdivision Aaron Hale, President

## Attachine int R

## Pear Blossom Subdivision Proposed School District Boundary Description

A portion of the southwest quarter of the northeast quarter, a portion of the northwest quarter of the southeast quarter, and the northeast quarter of the southeast quarter, all in Section 1, Township 2 North, Range 1 West, Boise Meridian, Ada County, Idaho, being more particularly described as follows:

Commencing at the north quarter corner of said Section 1; thence S00°54'44"W, 1,310.32 feet along the westerly boundary of the northwest quarter of the northeast quarter of said Section 1 to a 5/8 inch iron pin and cap at the northwest corner of the southwest quarter of the northeast quarter, which is the **Real Point of Beginning**:

Thence S88°49'47"E, 1,049.55 feet along the north line of the southwest quarter of the northeast quarter of said Section 1 to a 5/8 inch iron pin and cap;

Thence S00°52'01"W, 1,555.26 feet along a line parallel to the east line of the southwest quarter of the northeast quarter of said Section 1 to a 5/8 inch iron pin and cap;

Thence S88°48'21"E, 280.95 feet along a line parallel to the north line of the northwest quarter of the southeast quarter of said Section 1 to a 5/8 inch iron pin and cap on the east line of the northwest quarter of the southeast quarter of said Section 1;

Thence N00°38'09"E, 235.27 feet along the east line of the northwest quarter of the southeast quarter of said Section 1 to a 5/8 inch iron pin and cap at the northeast corner of the northwest quarter of the southeast quarter of said' Section 1;

Thence S88°47'44"E, 1,265.22 feet along the north line of the northeast quarter of the southeast quarter of said Section 1 to a point on the westerly right-of-way of Idaho State Highway 69 that lies N88°47'44"W, 65.00 feet from an aluminum cap marking the northeast corner of the northeast quarter of the southeast quarter of said Section 1;

Thence S00°53'26"W, 190.20 feet along the westerly right-of-way of Idaho State Highway 69 and along a line 65.00 feet westerly of and parallel to the easterly boundary of the northeast quarter of the southeast quarter of said Section 1;

Thence S05°2018"W, 451.32 feet along the westerly right-of-way of Idaho State Highway 69 to a point that lies 100.00 feet westerly of easterly

Page 1 of 2

boundary of the northeast quarter of the southeast quarter of said Section 1;

Thence S00°53'26"W, 682.77 feet along the westerly boundary of Idaho State Highway 69 along a line 100.00 feet westerly of and parallel to the easterly boundary of the northeast quarter of the southeast quarter of said Section 1 to the southerly boundary of the northeast quarter of the southeast quarter of said Section 1;

Thence N88°40'18"W, 1,224.37 feet along the southerly boundary of the northeast quarter of the southeast quarter of said Section 1 to an aluminum cap at the southwest corner of the northeast quarter of the southeast quarter of said Section 1;

Thence N88°39'39"W, 1,324.33 feet along the southerly boundary of the northwest quarter of the southeast quarter of said Section 1 to an aluminum cap at the southwest corner of the northwest quarter of the southeast quarter of said Section 1;

Thence N00°21'42"E, 1,317.24 feet along the westerly boundary of the northwest quarter of the southeast quarter of said Section 1 to a 5/8 inch iron pin and cap at the northwest corner of the northwest quarter of the southeast quarter of said Section 1;

Thence N00°54'44"E, 1,319.56 feet along the westerly boundary of the southwest quarter of the northeast quarter of said Section 1 to the *Real Point of Beginning.* 

Comprising 108.06 Acres more or less. Subject to easements and right-of-ways of record or apparent

#### Excepting there from the following:

Lot 1, Block 1 of Pear Blossom Subdivision as shown in Book 85 of Plats, at pages 9605 through 9606, Records, Ada County, Idaho.

Comprising 63.49 Acres more or less. Subject to easements and right-of-ways of record or apparent

Page 2 of 2





HP. IL LVIV L. TUIM

No. 1371 P. 2

To Whom it May Concern,

I am writing this letter to explain my intentions for the 63 acres south of Pear Blossom subdivision and to state my position on the proposed school district boundary change that is now before the State Board of Education. I am in agreement that the school district boundary should be changed, as submitted by Mr. Aaron Fuhriman, to include all of Pear Blossom's 20 lots and that the 63 acres south of Aristocrat Rd should be kept in the Kuna school district.

My original intentions for the 63 acres South of Pear Blossom was to just make it a second phase of the subdivision. However, with the change in the market, it is no longer cost effective to develop a standalone sewage treatment plants, (the existing sewage treatment plant for Pear Blossom is only able to handle 23 properties) so I am planning on waiting until Kuna extends their sewer system out to this property before I begin to develop. Currently there is about 2 ½ miles of farm land that would need to be developed and added to the Kuna Sewer District before I will begin to develop my property that is South of Pear Blossom. I anticipate that it will take anywhere between 10 and 20 years before that

Once I do have the ability to hook into Kuna's sewer system, I intend on sub dividing the property South of Pear Blossom into quarter and third acre lots (verses the one acre lots that are in Pear Blossom) and to make this subdivision a completely separate subdivision from Pear Blossom, with a different name and a separate entrance which would be on the south side of the 63 acres, about 1/2 mile from the Pear Blossom entrance. This being the case, I do not foresee any problems with having Pear Blossom be in the Meridian School District and the new subdivision being in the Kuna School District.

Please feel free to contact me if you have any questions.

Thank You, 4-2-2010 Dr. Soo Lee

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## SUBJECT

Excision and Annexation of Land from the Plummer-Worley School District to the Coeur d'Alene School District

## APPLICABLE STATUTE, RULE, OR POLICY

Sections 33-308, Idaho Code IDAPA 08.02.01.050, Rules Governing Uniformity

## **BACKGROUND/DISCUSSION**

Section 33-308 of Idaho Code prescribes the procedure for excision and annexation of land from one school district to another. Doyal Van Orman, spokesman for Save our Schools, has submitted a petition containing the required documents. If the proposal is approved, it will be sent to the electors of the area affected.

The petition proposes to excise approximately 133 square miles of the Plummer-Worley School District and annex it into the Coeur d'Alene School District. The petition states there are three primary reasons for the request. First, the "inability of the School District #44 to provide a positive educational opportunity for our students." Second, "the school district has failed to maintain the existing educational structures in a safe and well-maintained condition." Third, "the District #44 administration has rejected community recommendations and suggestions from those community members in favor of providing maintenance for the elementary school located in the city of Worley."

According to the hearing officer, there is a factual dispute about the number of potential students within the affected area. The Plummer-Worley School District indicated that as of November 2009, 160 students resided in the Kootenai County portion of the District and were attending school in the Plummer-Worley School District. The Petitioner's contended that there were a number of students in the District that were attending other school districts, and that 72 students residing in the area to be excised and annexed were not attending the Plummer-Worley Worley School District.

Both the Plummer-Worley Board of Trustees and Coeur d'Alene Board of Trustees considered the petition and voted unanimously to oppose the petition. Pursuant to IDAPA 08.02.01.050, a hearing officer was appointed to review the request and a public hearing was held. The hearing officer concluded that the petition does not qualify with the statutory provisions of Section 33-308 in the size of the area to be excised and annexed. Should the Board determine that the size of the area to be annexed is permitted, it is recommended that the excision and annexation is not in the best interests of the children residing in the area described in the petition. The hearing officer's recommendation and exhibits are attached. These include the documents as originally submitted to the State Department of Education.

## ATTACHMENTS

Attachment 1 – Hearing Officer's Recommendation	Page 3
Attachment 2 – School Board of Trustee Recommendations	Page 15
Attachment 3 – Petition to Alter the District Boundaries	Page 31

## **BOARD ACTION**

A motion to accept the findings and conclusion and recommendations of the hearing officer dated March 24, 2010 and to reject the petition for the excision and annexation of property from the Plummer-Worley School District to the Coeur d'Alene School District based on the size of the proposed area for excision and annexation being in excess of the statutory maximum area under Idaho Code, Section 33-308.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No \_\_\_\_

#### BEFORE THE HEARING OFFICER FOR THE

#### STATE BOARD OF EDUCATION

In the matter of the petition requesting The excision of territory from Plummer-Worley School District No. 44, And annexing said territory into Coeur d' Alene School District No. 271, District.

# FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDATION

#### **INTRODUCTION**

A Hearing was conducted on March 16. 2010, by Hearing Officer, Edwin L. Litteneker at the Worley Grange Hall, Highway 95 Worley, Idaho for purposes of gathering public comment on the proposed alteration of the boundaries of the Plummer-Worley School District No. 44 and the Coeur d' Alene School District No. 271.

A Petition was received by the State Department of Education to excise a portion of the Plummer-Worley School District No. 44 which lies within Kootenai County, Idaho and annex that area into the Coeur d' Alene School District No. 275. The Petition was presented by Doyal Van Orman and George Braman, spokesmen for the Save Our School Committee. The Plummer-Worley School District No. 44 considered the Petition and recommended denial of the Petition on November 10, 2009. The Coeur d' Alene School District considered the Petition and recommended a denial of the Petition on December 11, 2009.

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Idaho Code Section 33-308 provides for a process whereby the State Board of Education will consider approval of the Petition and direct that an election be held provided that the proposed excision and annexation is in the best interest of the children residing in the area described and the excision of the territory as proposed would not leave a School District with a bonded debt in excess of the limit then prescribed by law.

The State Board of Education has adopted rules at IDAPA 08.02.01.050 which include criteria for review of the request for the excision and annexation and a hearing process to gather public comment for purposes of the Hearing Officer making recommendations to the State Board of Education.

Approximately 85 people attended the Hearing, 75 of them signed up on the sign-up sheets which are made part of the Record. 24 people offered comment. The proceedings were tape recorded by the Hearing Officer and the tapes are part of the Transmittal of the Record. A written statement was made part of the record by Doyal Van Orman, the spokesman for the Petitioners. Mary Morris offered a written statement. Donna Mason offered photographs of the proposed location of a new school in Plummer all of which are included in the Transmittal of the Record.

#### **FINDINGS OF FACT**

The Plummer-Worley community is a diverse community of people who are passionate about their schools and passionate about their community. The people in attendance and those offering comments were well spoken and were appropriately concerned about a number of issues involving the education of students in the Plummer-Worley School District.

There were a number of issues presented ranging from the condemnation and resulting closure of the Worley Elementary School to the proposed location of a new elementary school in

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Plummer to concerns about the quality of education in the Plummer-Worley School District No. 44 to the historical issues of the consolidation of the Plummer-Worley School Districts. The participants were remarkably well behaved and conducted themselves appropriately in a fashion that would make any community proud.

The Petition seeks to excise from the Plummer-Worley School District No. 44 and annex into the Coeur d' Alene School District No. 271 approximately 133 square miles of area lying in the Southern end of Kootenai County adjacent to Benewah County. The area lies immediately North of the Kootenai County- Benewah County line, to the East, the area is adjacent to Coeur d' Alene Lake and the State of Washington on its Western boundary. The Plummer-Worley School District No. 44 extends South to the Latah County line.

Presently students living in the affected area attend Plummer-Worley School District No. 44, Lakeside Elementary, Middle School and High School facilities in Plummer, Idaho which is approximately 6 miles from Worley. At the farthest point North as the crow flies students could reside 29 miles North of Plummer.

There was a factual dispute about the number of potential students within the affected area. The Plummer-Worley School District indicated that as of November of 2009, 160 students resided in the Kootenai County portion of the District and were attending school in Plummer-Worley School District No. 44. The Petitioner's contended that there were a number of students in the District that were attending other School Districts, including the adjacent Coeur d' Alene School District to the North, the St. Maries School District to the East, the Tekoe and Freeman School Districts in Washington, the Potlatch School District to the South, the Coeur d' Alene Tribal School in DeSmet and home school students. The Petitioners contended that 72 students

residing in the area to be excised and annexed were not attending Plummer-Worley School District No. 44.

The Petitioners contended that the Petition met all of the statutory provisions, that the Petition addressed what was best for the student, particularly given the condition of the Plummer-Worley School District buildings. The Petitioners contended that the Plummer-Worley School District's quality of education was not as good as the quality of education that would be available in the Coeur d' Alene School District, in particular that the educational achievement rating of the Coeur d' Alene School District was substantially higher than the Plummer-Worley School District. Mr. Van Orman attached to his written statement submitted at the time of the hearing, Kootenai County voter registration sheets demonstrating that the required number of electors by statute had signed the Petition.

The Plummer-Worley School District No. 44 represented by its Superintendent Judy Sharrett and its School Board attorney, David Rogers responded specifically to the educational and environmental concerns by indicating that Lakeside Elementary had met its No Child Left Behind goals and was no longer a school needing improvement, that the Lakeside Middle School received three of the State's fifty three awards given to middle schools and that the High School met proficiency and had increased the graduation rate over the last couple of years. All of which meant that the quality of education in the School District was improving.

The Superintendent also responded to the concern about the effect of closing the Worley Elementary School and indicated that the District had been successful in finding funding for the construction of a new elementary school in Plummer. The Superintendent also expressed concerns about the transportation of students to Coeur d<sup>\*</sup> Alene and that the students in the area

to be excised and annexed would have a potentially longer trip into Coeur d' Alene than they do into Plummer.

David Rogers, the attorney for Plummer-Worley School District No. 44 raised specific questions about the validity and sufficiency of the Petition. Mr. Rogerts argued that the area to be annexed was substantially greater than 50 square miles contrary to LC. § 33-308 and that there was no demonstration that the Petitioners had a quarter or more of the School District electors residing within the area to be annexed having signed the petition.

Hazel Bauman, the Superintendent for Coeur d' Alene School District No. 271 appeared on behalf of the District and expressed concern that the infusion of potentially 160 students would be difficult for the Coeur d' Alene School District to handle. The Coeur d' Alene School District's present facilities are at or exceeding capacity and the effect of the infusion of that many students may mean additional transportation to a school building where there is available space. It was her belief that transportation cost to the District would be substantial.

Superintendent Bauman also expressed the unlikelihood that the Coeur d' Alene School District would ever plan to construct a School in Worley. The Superintendent also indicated that there may be transitional issues for the Plummer-Worley students based on the size of the Coeur d' Alene School District Schools. The smallest Coeur d' Alene School District Elementary School has 271 students, however, generally the model for elementary schools are between 300 and 450 students, minimally 700 students for middle schools and minimally 1,200 students for high schools in the District.

Numerous residents of the affected area as well as the unaffected area of Plummer-Worley School District No. 44 commented on the quality of education offered, believing that it

was improving, that there is a sense of community not only based upon the long term residents in the community but the substantial Native American population in the community as well.

A number of the public offering comment discussed the unique community of Worley, the relations of the community with the City of Plummer and the Coeur d' Alene Tribe, the historical lack of responsiveness of School District Boards, both the Coeur d' Alene School District Board as well as the Plummer-Worley School District Board to community concerns, that there were substantial issues because the Worley Elementary School which was the only school in town had closed and that closure of the school was handled badly and could have been avoided.

There are a number of Coeur d' Alene Tribal Members in the Plummer-Worley School District No. 44. There were several comments from both Native American parents and non Native American parents that transporting students from the Worley community into the Coeur d' Alene School District would be disruptive and would not be in the students best interest. One parent specifically testified as to the circumstances of their children having attended school in Coeur d' Alene for a short period of time finding the experience to be unsatisfactory and returned the children to the Plummer-Worley School District.

Another parent indicated that the ability of a parent to participate in school and extracurricular activities with their student based on the potentially longer drive into Coeur d' Alene would be affected and would also affect the students ability to participate in extracurricular activities if bus transportation was not available.

A number of the parents indicated that the students within the affected area were well adjusted to the Plummer-Worley School District, that the closure of the Worley Elementary School had not substantially impacted the education of the elementary students and that the

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efforts of the School District to consolidate and accommodate the students from Worley Elementary into the Lakeside Elementary had been successful.

Others particularly those who wanted the Worley Elementary School to continue to remain open did not believe that it was in the students best interest to attend school in Plummer.

Plummer-Worley are two very uniquely similar communities divided by a long history

and six miles.

There was no testimony that the Plummer-Worley School District would be left with a bonded debt in excess of the limit provided for by law.

#### CONCLUSIONS OF LAW

Idaho Code Section 33-308(1) provides the following:

A board of trustee of any school district including a specially chartered school district, or one-fourth (1/4) or more of the school district electors residing in an area of not more than fifty (50) square miles within which there is no schoolhouse or facility necessary for the operation of a school district, may petitioner in writing proposing the annexation of the area to another and contiguous school district.

A sufficient number of electors signed the Petition.

The Plummer-Worley School District contends as a matter of law, the area to be excised and annexed is substantially in excess of the fifty (50) square miles provided for in I.C. § 33-308. The Petitioner's offered that the language of I.C. § 33-308 is not a limitation on the area to be annexed or excised but is a description of an area within which there was not located a schoolhouse or facility necessary for the operation of a School District.

The statutory language is not the most artful nor a model of clarity particularly given the historical competition between School Districts to excise and annex areas within potentially competing School Districts.

It is the Hearing Officer's conclusion that the Legislature intended that the size of the area to be excised and annexed would be no greater than fifty (50) square miles and therefore the Petition does not qualify with the provisions of I.C. § 33-308.

Should the Board determine that I.C. § 33-308 does not limit the area to be excised and annexed, the following conclusions are made pursuant to IDAPA 08.02.01.050.03.

There are no issues of bonded indebtedness in excess of the limit provided for by law,

IDAPA 08.02.01.050.03(a).

The IDAPA provisions then require a determination of whether:

"the proposed alteration in the best interest of the students residing in the area described in the Petition considering:

1. The safety and distance of the children from the applicable schools;"

IDAPA 08.02.01.050.03(b)(i).

The students in the area proposed to be excised and annexed would travel greater distances to the Coeur d' Alene School District than they presently travel to attend school at the Lakeside Schools in Plummer. This fact affects the student and parent's ability to participate in school and extracurricular activities. It is then less likely that the excision and annexation would be in the best interest of the children.

2. "The views of the interested parties as these views pertain to the interests of the children residing in the petition area." IDAPA 08.02.01.050.03(b) (ii)

There were a number of comments directed to the history of the school district and the facilities within the District including the closure of the Elementary School in Worley which were appropriate but not helpful to the decision.

Those individuals expressing concerns about interests in the children indicated several different interests. Those parents whose children did not attend the Plummer-Worley Schools
had made that choice based upon the quality of education provided for in the Plummer-Worley Schools. Those parents did not indicate that their children would attend school in the Coeur d' Alene School District if that opportunity was available, only that they had made a decision not to have their children attend the Plummer-Worley School District.

Those parents whose children attended the Plummer-Worley School District spoke positively about the experience, about the community and about the relationship between the school and the community particularly emphasizing the Native American Culture in the community. It was the consensus of parents whose children attended Plummer-Worley School District No. 44 that they preferred Plummer-Worley School District No. 44 to Coeur d' Alene School District No. 271.

"The adjustment of the children to their home and neighborhood environment".
IDAPA 08.02.01.050.03(b)(iii).

There were numerous comments that the students attending the Plummer-Worley Schools are well adjusted in their home and in their neighborhood environments. The fact that there may have been in the past issues about student behavior which contributed to an unacceptable educational environment is offset by the Plummer-Worley School Districts efforts to meet the No Child Left Behind Provisions and to meet proficiency standards.

To excise and annex this area from the Plummer-Worley School District into the Coeur d' Alene School District would most likely negatively impact the students adjustment to their home and neighborhood environment.

4. "The suitability of the school(s) and school district which is gaining students in terms of capacity and community support." IDAPA 08.02.01.050.03(b)(iv).

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#### FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDATIONS

The Coeur d' Alene School District expressed substantial concerns about the capacity to accept the students from the affected area not only in the availability of school facilities but also in the commitment necessary to transport these students to the Coeur d' Alene School District.

Though not specifically expressed, the Coeur d' Alene School District suggested that there would not be the kind of community support in the substantially larger schools in Coeur d' Alene that exists in the Plummer-Worley School District for the students.

The Record supports a conclusion that the Coeur d' Alene School District would not be suitable in terms of school building capacity and community support.

#### RECOMMENDATION

It is therefore recommended to the State Board of Education that the Petition has not qualified with the statutory provisions of I.C. § 33-308 in the size of the area to be excised and annexed. Should the Board determine that the size of the area to be annexed is permitted, it is recommended that the excision and annexation is not in the best interests of the children residing in the area described in the Petition.

DATED this 24 day of March 2010.

Edwin L. Litteneker Hearing Officer

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDATIONS

I DO HEREBY CERTIFY that a true And correct copy of the foregoing Document was:

Mailed by regular first class mail. And deposited in the United States Post Office

\_\_\_\_\_ Sent by facsimile.

\_\_\_\_\_ Sent by Federal Express, overnight Delivery

\_\_\_\_\_ Hand delivered

To: Judi Sharrett, Superintendent Plummer/Worley Joint School District No. 44 P.O. Box 130 Plummer, Idaho 83851-0130

> Hazel Bauman, Superintendent Coeur d' Alene School District No. 271 311 N. 10<sup>th</sup> Street Coeur d' Alene, Idaho 83814-4299

Doyal Van Orman P.O. Box 52 Worley, Idaho 83876

George Braman 22505 Monticola Ct. Worley, Idaho 83876

On this 24 day of March 2010.

Edwin L. Litteneker

FINDINGS OF FACT, CONCLUSIONS OF LAW AND RECOMMENDATIONS

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# RECOMMENDATION TO DENY PETITION TO EXCISE PROPERTY FROM THE PLUMMER-WORLEY SCHOOL DISTRICT AND ANNEX SAID PROPERTY INTO THE COEUR D'ALENE SCHOOL DISTRICT

Judi Sharrett Superintendent of Schools and David B. Rogers Attorney at Law

**Plummer-Worley School District** 

December 2, 2009

The "Petition to Excise Portions of Plummer-Worley School District #44 which lie within Kootenai County, Idaho, and annex those portions into Coeur d'Alene School District #271" filed herein appears to be fatally flawed on its face. Although the Board of Trustees of the Plummer-Worley School District #44 is responding to the substance of the petition, this is done while reserving objection to the validity of the petition as filed. Section 33-308, Idaho Code, specifies that ". . . one-fourth (1/4) or more of the school district electors residing in an area of not more than fifty (50) square miles within which there is no schoolhouse or facility necessary for the operation of a school district, may petition in writing proposing the annexation of the area to another and contiguous school district."

In order to comply with this requirement, the petitioners must present a certification from the Kootenai County Clerk of the number of electors residing within the area to be excised and annexed, and verification by the same Clerk that the signers of the petition constitute 25% of those electors. The petitioners have made no effort to obtain verification of compliance with this mandate of the statute. This is no small matter because a cursory perusal of the persons signing the petition reveals that a number of the persons are not qualified electors because they have not attained the age of eighteen years, or do not live within the boundaries of the area sought to be excised and annexed, or do not even reside within the State of Idaho.

The second fatal flaw is that 33-308(2)(b) and (c) requires a legal description of the "area proposed to be excised from one district and annexed to another contiguous district" and "Maps showing the boundaries of the District as they presently appear and should they appear if the excision and annexation were approved".

In this petition, the petitioners have included a low scale map of the area at issue, and simply say that they want to excise an annex that portion of the school district which lies within that area. This

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can in no way comply with the requirement for "a legal description of the area proposed to be excised from one district and annexed to another contiguous district" or the boundaries of the district before and after the proposed excision and annexation.

Finally, 33-308 appears to limit the area which can be excised and annexed to one of "not more than fifty (50) square miles". From a cursory perusal of the low scale map included in the petition, it would appear that there are more than 120 square miles in the area encompassed by the petition. If the fifty (50) square miles allowed by the statute must be contiguous to the Coeur d'Alene School District boundaries, there is no way possible to include the City of Worley in the petition for excision and annexation. Again, this is critical to the validity of the petition because it appears that the majority of the signers of the petition reside in and around the City of Worley and the language of the petition clearly contemplates the inclusion of the City of Worley in the area to be excised and annexed.

The City of Plummer, where the elementary, middle and high schools are currently being operated, is only six miles from the City of Worley. Only by the worst kind of gerrymandering could the City of Worley be in a fifty (50) square mile area within which there is "no schoolhouse or facility necessary for the operation of a school district".

The Plummer-Worley School District has forwarded this petition in compliance with the statute. If it had been within the authority of the District, the petition would have been rejected for failure to comply with Section 33-308, Idaho Code. The statute, however, does not seem to give the District that authority. It does not speak in terms of the District "accepting" the petition, it addresses only the petition being "presented" to the Board, instructing that the District is to forward the petition to the Department of Education. Nonetheless, the Plummer-Worley School District #44 does object to the petition because of its complete failure to comply with 33-308.

#### Submitted by David B. Rogers

This is in response to the substantive matters set forth in the *Petition to Excise Portions of Plummer-Worley School District #44 which lie within Kootenai County, Idaho, and annex those portions into Coeur d'Alene School District #271 (November, 2009).* Although I have already submitted a recommendation for denial of the annexation request on behalf of the Board of Trustees of the Plummer Worley School District #44, this response is for the benefit of the State Board of Education as many of the statements made in the petition are not entirely accurate.

The writers of the petition cite three primary reasons for the annexation request, each of which will be addressed individually:

- "The inability of the school district #44 to provide a positive educational opportunity for our students. They have continually failed to meet the AYP educational goals set by State and Federal agencies".
- "The school district has failed to maintain the existing educational structures in a safe and well-maintained condition".
- "The District #44 administration has rejected community recommendations and suggestions from those community members ".

#### 1. The inability of the district to provide quality education and make AYP

Lakeside Middle School has met the proficiency standards set by the Idaho State Department of Education for two years in a row which releases them completely from the status of being a school in Needs Improvement according to No Child Left Behind. Lakeside Middle School was designated a Title 1 Showcase School in the spring of 2009 and earned three of the 53 awards designated by the Idaho State Board of Education this fall.

Lakeside High School met proficiency targets last year and is expected to be released from Needs Improvement status according to NCLB after ISAT testing this coming spring. We have worked diligently to increase the graduation rate through credit retrieval, summer school, daily advisory, GearUp, and senior projects. We provide advanced opportunities through IDLA, dual enrollment, and fully cooperate with the many programs offered through the Coeur d'Alene Tribal Department of Education. The district has an ongoing and significant partnership with the Coeur d'Alene Tribal Department of Education to mentor students, provide summer opportunities aligned with vocational preferences, job shadow, provide funds for dual enrolled students, provide tutoring, and many other activities. All of this has combined to increase the graduation rate by 16 percent for two years in a row. In comparison, the Spokane Public School District in Washington has a lower graduation rate than our district.

Lakeside Elementary School made the proficiency targets for Reading and Language Arts. Math remains an issue of concern, however, and a new math curriculum was adopted last spring, with staff receiving training to implement the curriculum with fidelity. Our district has taken advantage of the many grants and programs available to schools in Needs Improvement over the past few years by the State Department of Education, and we are always looking to improve student achievement.

Our tremendous growth in student achievement is the result of hard work on behalf of the staff and students. Our student population is 65 percent Native American, we have a district wide free and reduced lunch rate of 68 percent, and each of our three schools is Title I Schoolwide. Information about our growing student achievement has been heavily publicized in local newspapers, newsletters, and on television news. Student achievement is discussed at all board meetings, open forum meetings, and community meetings as well. As interim superintendent last spring, I even attended one of their weekly

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Save Our School (SOS) meetings to discuss all relevant issues, *including student achievement*. The SOS group has chosen to ignore the facts in favor of spreading inaccurate information to the public.

The petitioners discuss the "many" families who have fled to other districts or have opted to home school their children. They claim only 64 students travel from Worley to attend school in Plummer. The actual statistic as of November 4, 2009 is that 160 students residing in Kootenai County are enrolled in our district. The majority of students bused from Kootenai County spend about 15 to 20 minutes on the bus. The trip from Worley city limits to Coeur d'Alene city limits is at least 30 minutes, not including time necessary to pick up children on the rural routes or drive to the various school buildings in Coeur d'Alene. Busing students from Worley to Coeur d'Alene would substantially increase the amount of time students would spend on the bus which would <u>not</u> be in their best interest.

They claim moving our elementary students to Plummer due to the Worley Elementary Gym roof being declared an Imminent Hazard in July of 2009 created *"significant disruption to the educational environment for the students"*. In reality, the summer move enabled our students to begin the school year on time, in a safe location, and without loss of service. Staff and students consistently report their environment is better, healthier, and quieter. Parents report relief their students are no longer in close proximity to busy Highway 95. Additionally, their current building does not smell of the mold and mildew which exacerbates health conditions.

Early in the summer, many parents said they would remove their children from the district if students were not placed in a safe environment. Since the move, we have heard only positive responses from our families, and our enrollment did not drop from last year at this time.

#### 2. Failure to maintain the existing educational structures in a safe and well-maintained condition

The petitioners claim the Worley building was allowed to deteriorate by the district after consolidation between Plummer and Worley in 1990. In fact, the building was in poor condition prior to consolidation as evidenced by Worley School District Board of Trustees minutes. Worley District minutes reflect there was a problem with both facility and finances, and there was little money for repairs and maintenance. Records reflect the need for a new building 20 years ago, and Board minutes reflect there have been continual and expensive building issues ever since.

Several areas of inaccuracies are described in the petition, perhaps the most glaring being the allegation the district has not adequately prevented damage to the roof over the years. Our district has five buildings to maintain, yet about 60 percent of the maintenance budget has gone in the past toward keeping the Worley elementary school serviceable, a percentage which does not reflect the number of man hours involved in that maintenance and repair effort. Maintenance and custodial staff have worked overtime daily and on weekends to shovel snow from the roof, and outside contractors have been hired to help with snow removal when needed. Moisture damage to the building is the result of decades of water problems which exist at the site, and the circulation fans referenced by the petitioners were removed due to a presupposition of asbestos with its many associated health hazards. Upon consolidation the Plummer Worley Board of Trustees learned that water ran into the building through classrooms doors. When drain tile was installed, only some of the problems with water were alleviated. The sub-grade levels of the building still experience significant flooding and must be dried with commercial fans on a seasonal basis, and the musty, moldy aroma in the building existing before consolidation continues to this day.

The major structural concerns include but are not limited to crumbling concrete, dry rot, severe settlement, significant cracks in the interior and exterior concrete walls, a significant number of cracks in

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the chimney, and inadequate electrical, mechanical, and plumbing systems. On July 15, 2009, we were notified by Division of Building Safety of an "Imminent Safety Hazard – Lakeside Elementary School" because of a probable collapse of the roof structure over the gym and the potential damage such a collapse could do to surrounding classrooms, hallways, and the cafeteria. We have run three unsuccessful bond elections in four years; consequently an application has been made to the Public School Facilities Cooperative Funding Program (Idaho Code 33-909). Extensive research into determining the most economically feasible solution showed that, due to the extensive structural deterioration of the Worley building, constructing a new building is a far more cost effective solution.

#### 3. Community recommendations and suggestions have been rejected

For many years after consolidation, the Plummer Worley Board of Trustees tried to locate property within the Worley community to build a new school; however, none has been attainable. One contributing factor is the City of Worley is landlocked by property either in trust, owned by Coeur d'Alene Tribal members, or the Tribe itself which will not sell land.

In July, 2000, the Board of Trustees voted unanimously to proceed with a new elementary school in Worley if negotiations for land were successful. This process continued for over a year and included meeting with a tribal council member to discuss a trade, and obtaining appraisals on the property being discussed. Unfortunately, the disposition of tribal land is contrary to a council resolution to acquire a larger land base. Council resolutions are deemed law.

In the spring of 2006 the board again looked at property outside of Worley but determined it to be cost prohibitive due to the lack of infrastructure and the distance from city utilities. Prior to the last bond election in May 2009, district representatives met with a landowner to discuss acquisition of the only other potential property which could be located. This property was subsequently sold by the landowner to a developer.

The current site of the Worley elementary building is less than 7 acres in size, significantly smaller than the 10 acres recommended by the State of Idaho for an elementary school. The school is in an undesirable location adjoining the noisy and dangerous Highway 95. A grain, fertilizer, and farm chemical storage facility is directly across the street.

The petitioners previously requested that the board redefine the trustee zones because only one zone lies entirely within Kootenai County. Idaho Code 33-313 clearly states *"the boundaries of the several trustee zones in each such school district shall be defined and drawn so that, as reasonably as may be, each such zone shall have approximately the same population"*. The boundaries were redrawn after the results of the 2000 census were released and were drawn according to statute – with substantially equal population.

Upon receipt of the petition requesting that the zones be redefined, the district went to great lengths to determine what information was available. The data provided to petitioners by the Department of Commerce and Labor included substantial portions of land not within our district boundaries with no way to separate out the population. Further, it was specifically stated by a department representative that "the information was never intended for any legal purpose" nor did she know the "degree of accuracy" or the "source of the information". Additionally, Kootenai County was unable to provide data, and the regional (Seattle) office of the United States Census Bureau advised that data would not be available for our geographical location until after the 2010 census.

The petitioners allege that they requested the board convert the elementary to a charter school. In reality, this request was never brought to the Board of Trustees. Upon reviewing the petition for deconsolidation it states that if deconsolidation were successful, the petitioners intended to convert to a charter school. The requirements for conversion of a public school to a charter school are specifically spelled out in Idaho Code 33-5205(e), and none of the requirements have been complied with.

A petition for deconsolidation was received by the Board of Trustees but not acted upon because it was not in the best interests of the students. Further, it was not anticipated that the State Board of Education would approve the division of a small district into two smaller districts, with only six miles separating Plummer and Worley, and deconsolidation is contrary to the direction of the legislature.

The petition and the means by which the petitioners gathered signatures have raised some concerns. First of all, the petition appears to have been circulated among a select group of patrons which specifically excluded the majority of Zone 3 called 'Worley Housing' which is comprised of mostly Native American voters, and in which at least half of the Kootenai County students reside. In reviewing the petition, signatures representing families with children in the school system are in the minority, at approximately four (4) percent. Several members of the community have come to the district office to discuss concerns about the petition. Two different residents shared a concern about a man who falsely represented himself as an employee of the school district. He told them the Plummer Worley School District needed their signature on the petition because it would be in the best interest of the district to have students transferred to the Coeur d'Alene School District. Numerous persons who signed the petition do not reside within the boundaries of the district, or even the State of Idaho.

The Plummer Worley School District serves four communities, and we have had ample community representation from every trustee zone on the Facilities Committee over the course of the last several years. This committee has made several recommendations which the Board of Trustees has accepted. The Save Our School (SOS) members have been invited on more than one occasion to represent their concerns on the committee, but they have chosen not to participate. Last year a representative community group called Build Our Future actively worked to get the bond passed. Even

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though the bond did not pass with the required supermajority, voter turnout was good, and more voters than ever (55 percent) cast a 'Yes' ballot.

Finally, I want to point out the following sentence in the letter accompanying the SOS petition:

"Annexation would provide our community with the opportunity to work with Coeur d'Alene School

District in an effort to renovate the Worley Elementary School and thus provide the community with a

stable educational structure".

The following reports detail all of the extreme structural deficiencies, cost estimates, and

inspections which have been accumulated in the past year, and which I believe gravitate against efforts

to renovate the Worley building. I would be happy to share any and all copies with you:

- Updated Physical Assessment of Facilities (2008);
- Facilities Committee Recommendations to the Board of Trustees (2009);
- Facility Inspection Report by DBS (2009);
- Structural Engineering Report by Tate Engineering, Inc. (2009);
- Structural Engineering Report by Stapley Engineering; Order of Imminent Hazard from DBS Administrator (2009);
- Roof Repair Concept from Tate Engineering (2009);
- Preliminary Draft of Cost Options to remodel or build by ALSC Architects (2009).

If you have any questions, please call me at 208-686-2222.

Submitted by Judi Sharrett, Superintendent



School District 271

DISTRICT ADMINISTRATIVE CENTER 311 N. 10th Street, Coeur d'Alene, Idaho 83814-4299 OFFICE (208) 664-8241 FAX (208) 664-1748 www.cdaschools.org

December 11, 2009

Tom Luna, Superintendent of Public Instruction Idaho State Department of Education PO Box 83720 Boise, ID 83720-0027

RE: Idaho Code 33-308 Petition to Excise property from Plummer/Worley School District No. 44 and annex the same to Coeur d'Alene School District No. 271

Dear Superintendent Luna,

Please be advised that the Board of Trustees of Coeur d'Alene School District No. 271, at a duly noticed and constituted meeting held on 7th day of December, 2009, reviewed the Petition of Petitioners, a copy of which is enclosed, before four members of the Board of Trustees (the fifth member was absent). By Motion, second and unanimous vote the Board of Trustees determined not to accept the annexation request from residents of the Plummer/Worley School District. In doing so, the District relied upon the opinion of its counsel, a copy of which is attached, and reviewed and makes no objection in the position of Plummer/Worley School District No. 44 in its response to you dated December 2, 2009.

Sincerely,

Lynn/Towne, Clerk

Board of Trustees Coeur d'Alene School District No. 271

Enclosure (Petition)

OUR MISSION ... To provide every student an academically excellent education.

# DODSON & RAEON LAW OFFICES

ASSOCIATES IN THE PRACTICE OF LAW

Charles M. Dodson, Attorney, ISB #2134 (208) 664-1577 James A. Raeon, Attorney, ISB #2075 (208) 765-5875

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Eastlake Professional Suites 1424 Sherman Avenue Suite 300 Coeur d'Alene ID 83814 Facsimile (208) 666-9211

November 13, 2009

LYNN TOWNE, CLERK BOARD OF TRUSTEES COEUR D'ALENE SCHOOL DISTRICT NO. 271 311 N. 10TH STREET COEUR D'ALENE ID 83814

RE: Petition to excise portions of Plummer/Worley School District No. 44 and annex to Coeur d'Alene School District No. 271

Dear Lynn:

I have reviewed the Petition, a copy of which you provided to me with all of the attachments, as well as reviewed Idaho Code 33-308. That particular Code Section requires the following:

1. One fourth (1/4) or more of the school electors residing in an area of not less than fifty (50) square miles within which there is no school house or facility necessary for the operation of a school district.

- 2. The names and addresses of the Petitioners.
- 3. Legal description of the area to be excised/annexed.
- 4. Map showing current boundaries and boundaries if completed.
- 5. The names of each school district.
- 6. The description of the reasons for the proposed excision/annexation.
- 7. An estimate of the number of children residing in the area.

Based upon my review of the Petition, I find as to items 2, 4, 5, 6, and 7 there is compliance with the requirements of the statute. As to item 1, it appears that there is not a school house or other facility necessary for the operation of a school district within the fifty square miles encumbered, notwithstanding the old Worley School currently stands in Worley, but apparently is not necessary for the operation of the school district based upon the fact that Plummer/Worley School District No. 44 is not using that building. I do, however, have a concern that the number of people who signed the Petition constitutes one fourth or more of the school electors residing in that area. More particularly, we do not have proof of the total number of school electors as that term is defined by

Idaho Code 33-405 as verified by the County Election Division. Therefore, it is my express opinion that the Petition is deficient in meeting the first requirement.

As to the legal description of the area of the area to be excised/annexed, (item 3) I have reviewed Appendix A to the Petition and note that while it generally refers to Townships and Ranges, it does refer only to portions of Sections, more particularly the description recites portions of Sections 25 and 36 in Township 49 North, Range 6 West, Boise Meridian, Kootenai County, and portions of Sections 25 and 36 in Township 48 North, Range 6 West, Boise Meridian, Kootenai County, and portions of Sections 25 and 36 in Township 48 North, Range 6 West, Boise Meridian, Kootenai County, Idaho. Because those portions are not specifically described, there is a deficiency in the legal description of the portions to be excised/annexed. It is my express opinion on that basis that the Petition is defective as to the correct and complete legal descriptions of the parcels to be affected.

It is therefore further my opinion that the Petition is deficient, and does not meet the requirements of Idaho Code 33-308. If those deficiencies are corrected and the Petition refiled to meet those deficiencies, then in that event the Board may examine the issue and file its recommendation or non-recommendation as the case may be with the State Department of Education pursuant to Idaho Code 33-308. I am recommending the course of action for the December meeting of the Board of Trustees of Coeur d'Alene School District No. 271 be the rejection of the Petition as being deficient, more particularly the failure to verify that the Petitioners constitute one fourth or more of the school electors residing within the area (which can be verified through the courty elections department, and finally the appropriate and accurate legal descriptions of those portions of Sections referenced.

If I may be of further assistance in this matter, please do not hesitate to contact me.

Sincerely,

Charles M. Dodson Attorney at Law

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P.S. Lynn, please send copies of the actions the Board takes at their December meeting to SD 44

# **DODSON & RAEON LAW OFFICES**

ASSOCIATES IN THE PRACTICE OF LAW

Charles M. Dodson, Attorney, ISB #2134 (208) 664-1577 James A. Raeon, Attorney, ISB #2075 (208) 765-5875

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Eastlake Professional Suites 1424 Sherman Avenue Suite 300 Coeur d'Alene ID 83814 Facsimile (208) 666-9211

November 19, 2009

LYNN TOWNE, CLERK BOARD OF TRUSTEES COEUR D'ALENE SCHOOL DISTRICT NO. 271 311 N. 10<sup>TH</sup> STREET COEUR D'ALENE ID 83814 Via Facsimile 664-1748

RE: Follow up on conversation 11/18/09 - qualified electors

Dear Lynn:

Thank you for your telephone call the 18th late in the day. I wanted to reiterate that it is not the school district's responsibility to verify that 25% of the qualified electors within the area to be annexed/excised have signed the Petition. The Petitioners are left with the burden of first, determining the number of qualified electors within the area affected, and second, verifying the same in their Petition. In this case that was not done. It is therefore the burden on the Petitioners to establish, through the county election's board, the number of qualified electors under 33-405, Idaho Code, residing within the area affected, and verify that at least 25% of those qualified electors have signed the Petition. Absent the same, the Petition is, in my opinion, deficient. Please feel free to share this information with the Board of Trustees.

Thank you for this opportunity to be of service.

Sincerely,

Charles M. Dodson Attorney at Law

CMD/mab

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November 3, 2009

Idaho State Department of Education Tom Luna, Superintendent P.O. Box 83720 650 W. State Street Boise, ID 83720-0027

Dear Mr. Luna,

Enclosed is a copy of our petition for excision from Plummer-Worley School District #44 and annexation to Coeur d' Alene School District #271 for your records.

In accordance with the requirements set forth in I.C. § 33-308 this petition will be presented to the Plummer-Worley School District #44 Board of Trustees during their special meeting scheduled for November 2, 2009. Their next regularly scheduled board meeting is slated for November 9, 2009. The Idaho statute § 33-308 (3) requires that no later than ten (10) days after this date that this Board of Trustees shall transmit this petition to you with its recommendations.

Further, in accordance with the requirements set forth in I.C. § 33-308, this petition will also be presented to the Coeur d'Alene School District #271 Board of Trustees on November 4, 2009. Their next regularly scheduled board meeting is scheduled for December 7, 2009. We expect this Board of Trustees to also satisfy Idaho statute § 33-308 (3) which requires that no later than ten (10) days after this date that their Board of Trustees will transmit this petition, with its recommendations, to you.

If you have any questions or need further information about the petition enclosed, please do not hesitate to contact me.

Respectfully submitted,

Layal Van Aman Doyal Van Orman

Save Our Schools, Spokesman P.O. Box 312 Worley, ID 83876 208-659-4470 hunt3547@yahoo.com

encl

cc: Paul Agidius, President; Idaho State Board of Education

# RECEIVED

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IDAHO STATE DEPARTMENT OF EDUCATION

# Petition to excise portions of Plummer-Worley School District #44 which lie within Kootenai County, Idaho, and annex those portions into Coeur 'd Alene School District #271

November 2009

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## PETITION FOR ANNEXATION

The intent of this petition request is to excise that portion of the Plummer-Worley School District #44 which lies within Kootenai County, and annex that area into the Coeur 'd Alene School District #271. Five maps are provided reflecting the following: Plummer-Worley School District #44 as it currently exists; Coeur 'd Alene School District #271 as it currently exists; the affected area of District #44 requesting annexation; the Plummer School District if annexation is approved; and the Coeur 'd Alene District #271 if annexation is approved (See Appendix A). If approved this petition will essentially result in re-establishing the Plummer School District to it's original boundary as it existed prior to the consolidation with the old Worley School District in 1990, and expand the Coeur 'd Alene District #271 to include those sections within the South end of Kootenai County.

In support of this effort, 341 signatures of qualified voters within the affected area were obtained (See Appendix B). During the process of obtaining signatures voters were advised that the Coeur 'd Alene District #271 currently has two outstanding bonds, in addition to their base levy, which will result in an immediate and significant increase in taxes for the affected area if this annexation is approved. Most community members felt that the negative impact of the increase in our tax base was surpassed by the potential of providing a better opportunity for a quality education for the students.

It is noted that District #44 has no existing supplemental M&O or construction bonds at this time. With no bonded debt, therefore, approval of this annexation petition would not put an undue fiscal strain on District #44. With the completion of the new sewer system in Plummer the area growth potential will dramatically increase, and proposed developments (thus far denied because of the sewer moratorium) will provide a considerably larger tax base from which District #44 will realize substantial benefits.

There are three primary reasons why we are requesting this annexation action. The most important reason is the inability of the School District #44 to provide a positive educational opportunity for our students. They have continually failed to meet the AYP educational goals set forth by State and Federal agencies. The second reason is that the school district has failed to maintain the existing educational structures in a safe and well-maintained condition. And finally, the third reason is that the District #44 administration has rejected community recommendations and suggestions from those community members in favor of providing maintenance for the elementary school located in the city of Worley.

During the past decade the quality of education has declined within District #44. It has deteriorated to the point that many of the resident parents have elected to remove their children from the District, and the actual number of District #44 resident students currently being transported from the Kootenai County portion of District #44 to attend classes in Plummer has decreased to just 64. Our efforts have determined that more than 154 children residing within the boundaries of District #44 have elected to attend schools outside the District (See Appendix C). While that figure reflects a significant number of students residing in District #44 but attending other districts, the number is not all-inclusive. There is a strong probability that there are others for which we were unable to obtain information. What those figures indicate is that there are fewer students from the annexation area attending Plummer public school than those choosing to seek alternate educational opportunities. This clearly reflects that MANY of the parents of our students are unhappy with the administrative decisions and District #44's lack of ability

to meet AYP educational goals and requirements. In addition, the figure reflects that a large majority of the people paying taxes to District #44 do not enjoy the benefits those monies should be providing. Several letters from parents within the district who have chosen to move their children to alternative locations, opt for home schooling, or who are dissatisfied with the District #44 administration in general are included in Appendix D.

State records reflect that District #44 has consistently failed to meet AYP requirements across the district, the dropout rate is ridiculously high, and the graduation rate is extremely low. Those figures are reported by the State and can be easily verified by using computer access to appropriate Internet sites. A case in point is the freshman class of 2006 which started with 51 students. That class, now juniors, reflect just 19 students which equates to a 62.75% decline in attendance. When students depart, this district *loses* approximately \$5,000 (per student) in state funds used to support our school system; and while this fiscal loss has a significant impact, there are several other points associated with students no longer attending our school district. The efforts and interest of parents who care enough to try to get a better educational opportunity for their children are no longer available to support PTO and other school programs. We lose the parental involvement and support of those who would be most beneficial to the system. Also it clearly reflects that the existing system does not present a positive educational atmosphere. Parents who desire a challenging educational opportunity for their children are going to considerable personal expense and time transporting these students to other districts - it's their way of "getting around" a broken system.

There is a continuing conflict between the District #44 School Board and the residents of the Worley community as to whether it is more feasible to renovate the existing elementary school or build a new structure. On three separate occasions the district has proposed a bond to voters for the purpose of building a new school in Plummer, while abandoning the elementary school in Worley. In each instance the members of the communities within the entire school district has rejected the proposal. Members of the Worley community have pledged their support to help pass bond issues for the purpose of renovating the Worley Elementary School. These proposals were presented at several of the School Board meetings, in articles in local newspapers, and at special facility committee meetings. All of these offers have been rejected by the District School Board.

The District #44 School Board has proudly stated that they haven't passed a supplemental M&O bond in the past 20 years. The most effective way to make anyone believe that you need a new building is to neglect the maintenance and upkeep of the existing facility until a multitude of small things appear to become a huge, overpowering problem. That, in the simplest terms, is what the Plummer-Worley Joint School District #44 administration has done to the Worley Lakeside Elementary School. At an earlier School Board meeting, members of our committee discussed a list of maintenance supervisor and discussed the many deficiencies such as broken outlets and light switches, sticking doors, ice forming at entrance areas. No action was taken, and these inquiries and associated recommendations were totally ignored.

Circulation fans were removed from the elementary school because the exhaust ports exited the structure at a point where additional portable classrooms were being located. These fans were never reinstalled, and as a result moisture has been allowed to build up under some of the floor sections and create areas of minor structural deterioration. When asked if the fans could be reinstalled the maintenance supervisor stated that there was a potential for asbestos under the school and that he would not install the fans for that reason. It is noted that two asbestos abatement programs were performed by State Certified

Asbestos Abatement Contractors. The fans are not installed, and moisture continues to permeate the spaces under the building and cause additional damage.

Most recently the elementary school was found to have structural damage as a result of excessive snow load during the past two winters. The district did not take adequate action to alleviate the potential damage, thus allowing the snow to build up and the resultant weight to cause damage that may require extensive repairs to the building. Instead of taking actions to bring the structure up to safe standards the district elected to move the portable classroom structures and students to the Plummer campus. This was done at considerable expense to the taxpayers of this district, and significant disruption to the educational environment for the students.

Seven zones were established within the School District #44, with one School Board representative elected from each zone. Four of the zones lie completely within the Benewah County portion of the district. Two of the remaining three zones encompass portions of the City of Plummer and portions of Kootenai County. Only one zone lies entirely within Kootenai County, which does not provide our community with equitable representation. During 2008 our group of community citizens contacted the Idaho State Department of Commerce and Labor and determined that sufficient population changes had taken place that would justify rezoning the District. We initiated a petition in accordance with I.C. § 33-313 and presented it to the District School Board. The School Board rejected the petition with an explanation from their legal counsel that it was improperly presented and information contained therein could not be verified at State level. (See Appendix E).

In an effort to force the School District to press forth with our request for rezoning, we forwarded the petition package to the State Board of Education explaining our dilemma. Mr. Luna's office responded with a recommendation that we obtain the services of a lawyer. The expense associated with that form of action was prohibitive to community members and the original zone boundaries still exist.

The Worley community made recommendations to the School Board to convert the existing elementary school from a standard public school to a Charter school and offered our support in making the conversion. This action was rejected. At that time a second petitions was presented to the School Board by the members of our community requesting deconsolidation of the Worley community from District #44. This actions was summarily ignored by the members of the School Board (See Appendix F).

What these factors indicate is that our offers to help elevate the district education level to an acceptable level have been ignored. Our attempt to gain equitable representation within the zones of the district, and the efforts to induce the district to renovate and properly maintain our school have all been rejected. It clearly indicates that we simply cannot come to an equitable working agreement with the existing administration.

This annexation would eliminate the "two community", "two-county" conflict which currently exists. It would enable the Plummer School District to establish it's own priorities with regard to replacing existing structures without resistance from the Kootenai County residents. District #271 consistently reaches State AYP education and graduation requirements, and would provide our community with a better educational opportunity for our students. Annexation would provide our community with the opportunity to work with Coeur 'd Alene school district in an effort to renovate the Worley Elementary School and thus provide the community with a stable educational structure.

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If this request for annexation is favorably addressed we would urge that the State give careful consideration to the process of realigning assets to reflect the resources the Worley School District had at the time of consolidation and formation of the Plummer-Worley Joint School District #44. This would include the existing property, structures, comparable vehicles, and educational resources which existed at that time.

Respectfully submitted,

Doyal Van Orman Doyal Van Orman

Doyal Van Orman Spokesman, Save Our School Committee P.O. Box 52 Worley, Idaho 83876

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George Braman Spokesman, Save our School Committee 22505 Monticola Ct. Worley, Idaho 83876

#### **APPENDIX A**

The property described below to be excised from Plummer-Worley School District #44 and annexed into the Coeur d' Alene School District #271; specifically, all sections and parcels in Kootenai County, Idaho not currently within the Coeur d' Alene school districts, including:

T 49 N, R 6 W, Kootenai County, Idaho portions of sections 25 and 36; T 49 N, R 5 W, sections 23, 26, 27, 28, 29, 32, 33, 34 and 35; T 48 N, R 6 W, sections 1, 12, 13, 24, Kootenai County, Idaho portions of sections 25 and 36; T 48 N, R 5 W, sections 2, 3, 4, 5, 8, 9, 10, 11, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 and 36; T 48 N, R 4 W, sections 29, 32 and 33; T 47 N, R 6 W, sections 1, 12, 13, 24, 25 and 36; T 47 N, R 6 W, sections 1, 12, 13, 24, 25 and 36; T 47 N, R 5 W, sections 1 through 36 inclusive; T 47 N, R 4 W, sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, and 34;

T 47 N, R 3 W, sections 7, 17, 18, 19, 20, 28, 29, and 30.

Map #1 highlights the *current* boundaries of Coeur d' Alene School District #271. This map also contains the Kootenai County portion of Plummer-Worley School District #44 in the southwest corner of the map.

Map #2 reflects the *current* boundaries of Plummer-Worley School District #44.

Map #3 highlights the Kootenai County portion of Plummer-Worley School District #44.

Map #4 shows the affected area only.

And, finally Map #5 highlights the new boundaries of Coeur d' Alene School District #271 upon approval of this petition.











September 2009

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I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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Joe Anderson	
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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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Irespectfully request to be excised from Plummer-Worley Joint SchoolDistrict #44 and be annexed into Coeur d' Alene School District #271

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

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I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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Worley ID 83876
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September 2009

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MILL MICKMA Printed Name DIN 2 Signature 2834 W Canto Address Warky City, State Zip

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El HickmAN Signature 2834W.Co Address WORLEY City, State Zi

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MICHAEL S. CALLAHAN Printed Name Michae Signature P.O. Address worle City, State Zip

LARRY Y Printed Name Signature Address 5411 City, State Zip <u>Sportme</u> Volling, WA 99212 Children? (VM) f so, how many and what ages

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Signature <u>4809</u> W. Rolling Hill Address <u>Worley</u> TD 83876 City, State Zip/

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oomsburg TCle nature 839 City, State Zip Children? (Y/N) If so, how many and what ages Address City, State Z Children? (Y/N) If so, how many and what ages 14 Kenneth P. Le HM **Printed Name** Ken Signature 1843 Address WORI City, State Zip 'nΟ Children? (Y/N) If so, how many and what ages Elliko Address City, State Zip Children? (Y/N) If so, how many and what ages

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Children? (Y/N) If so, how many and what ages

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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Keith A Gilbert	
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Address Warley 15, 83876	st gar
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SHANNON E. GILBER	T
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I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September, 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

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I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

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I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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# STATE DEPARTMENT OF EDUCATION

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I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur'd' Alene School District #271.

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#### September 2009

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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September 2009

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September 2009

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September 2009

I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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I respectfully request to be excised from Plummer-Worley Joint School District #44 and be annexed into Coeur d' Alene School District #271.

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#### Appendix C

# **District #44 residents not attending District #44 Schools**

The number of students residing in District #44 that are being "Home Schooled" or transported to adjacent school districts is greater than **156**, and that number does not include all District #44 students attending the Coeur 'd Alene District #271 schools where the majority of our local students attend. The following figures are available through the various school district records and can be verified with time and effort. They are broken down as follows:

Students attending Coeur 'd Alene District #271 Public Schools - 10

Students attending Coeur 'd Alene District #271 Charter School - 4

Students attending Post Falls School District - 2

Students attending St. Maries School District-26

Students attending Tekoa School District in Washington State - 18

Students attending Freeman School District in Washington State - 9

Students attending Potlatch School District - 27

Students attending Spokane Public School Districts - 5

Students attending the Tribal School in Desmet. - 23

Students of school age currently being home schooled - 32

It is noted that the 32 students being home schooled and 40 of the students attending other school districts all reside in the Kootenai County portion of the district - that portion affected by this petition. This number (72) exceeds the number (64) of students currently being transported by school bus to the Plummer campus from the Kootenai County portion of the district. The total figures reflect students from across the entire District #44.

While these figures reflect a significant number of students that reside in District #44, but attend another district, they are not all inclusive. The figures were obtained during the very brief period we were processing this annexation request, and there are other community members which we unable to contact. Therefore there is a strong probability that there are others for which we were unable to obtain supporting information.

To unomit may concern,

Our choice to remove our children from the Plummee Worky School District was made in two stages. Our youndest son Left in the 2005-2006 school year. His older brother and younger Sister left in the 2006-2007 school year. The reasons for doing this were academic. It took a full year to fill in the very large gaps in basic Math, Science, Language Arts and Grammar. After filling the gaps in basic knowlede, we enrolled them in the St. Maries School District. They have thrived there, The Plummer/Workey School District Can not offer our children what St. Maries can. At the St. Maries District:

#1) No child is allowed to interrupt other children's l'earning. The administration has a strong commitment to support of their staff. Those who break the rules are removed (usually by the Principal)

#2) Children are expected to be present and active learners and take responsibility. for their academic success.

#3) Curriculm is supplemented to give a solid, Dasic coverage of the subject matter.

#4) Excellence in all academic\_ arenas is valued and encouraged.

We are asted every year on our open enrollment forms why we want to send our children to the St. Maries School District. Our answer has always been "We seek a better academic and social -

situation for our children ", Plummer/Workey School District has been wrable to provide a safe or supportive learning environment for our children. The lack of basic educational emphasis dooms the graduates to playing catching at college. Even those who have been excellent atmosphere. We want our children to be Il prited in their carever choices by their intrests and passions, Not by their lack of basic academic thowlede. Purmue Worky School District has failed offen to provide their students with academic Knowledge to help them succeed. Respectfully submitted, Sharon Bloomsburg

To Whom It May Concern:

1

We are residents of Kootenai County, and live within the boundaries of the Worley School District. When it came time to choose where to educate our children, we opted to home school rather than put them into the local public school near us.

Due to the poor teacher qualifications/requirements that we saw, the variance between the number of incoming students and outgoing graduates, and other personal reasons, we were convinced it would not be the quality of school we wanted our children to spend the majority of their time in nor be the institution we wanted them to graduate from.

It's a shame the school in our district is, in our opinion, not a quality school. It's too late for our own kids, but no doubt there are many more out there that would love to see a good school thriving once again in Worley. We personally would love to see our tax dollars at work supporting a school we could be proud of.

Matt and Karen Drechsel

http://sn113w.snt113.mail.live.com/mail/PrintShell.aspx?type=message&cpids=43f5949e-... 10/8/2009

To whom this may concern,

My son is in the 9<sup>th</sup> grade this year, and this is the 4<sup>th</sup> year that I've home schooled him. I chose to take him out of school here because of all of the chaos at the middle school. Not enough education going on ! He wanted to go to the high school this year, and I considered it. Changed my mind when I found out that the middle school and high school students are in one building without a resource officer.

I was going to have my daughter go to kindergarten this year, but they moved the students to Plummer. There are too many students in one area. So I'm home schooling her also.

I don't understand how a new school is going to make the education better?? It would be cheaper and faster to fix the Worley elementary school. If we want our children to have a good education, buy new books, and new computers, so they can keep up in the ever growing world of technology. We also need to have good teachers, that are treated well, so they want to stay here.

Successly, Kinderly Hawsen

William S Mellick 31038 S Williams Road Worley, Idaho 83876

Re: Joint School Worley Plummer:

10/29/09

Dir Sir:

I was asked to write this letter about why I send my children to CDA for schooling. My girls have attended Charter and are in CDA High School/NIC and Sorensen. I am very proud of them with my Christy graduating from NIC with an AA this December and receiving her High School diploma this spring. Christy has thrived in this type of setting and environment, which has resulted in her making the deans list. Marie is excelling in her course work by being challenged and being supported by the teaching staff and by us.

Our background, I am a CDA tribal member. I am a graduate of Worley High School, class of 78 were 90% went to college. Both their mother and I have BS from WSU. I have over 22 years of Federal service in the government serving in senior positions through out the western states. I moved back to Worley to Farm and to bring my children up in their Indian culture. If I knew how poor the Worley Plummer school system is I may not have move back.

There are many reasons why I elected to send my kids to CDA; the first is that I noticed that while attending the Worley school Christy was not being challenged in her schoolwork. We brought this up with her teacher. The remedy was to have her tutor math to the eight graders. I noticed that the teaching staff was not getting support from admin side of the school system. The School principal was more worried about the "no kid being left behind policy". I can go on and on but this will sum it up; I was talking to staff/ board members from the school about the ISAT scores. The comment was made to me blaming parents who took their kids to another school/home school. This took me by surprise and a while to figure out. Is this the reason the system is broken, have we taken all the smart children out of school district leaving children that can't be educated? No wonder they have problems, as parent I have only one chance to get this right, there is no second time around, these are the most important reasons for life, making sure my girls get the best education possible. Sad to say, they will not get it out of the Worley-Plummer school district.

Wullin Andhat

To whom it may concern,

I used to reside in the Worley area. I was involved in a custody battle and I was given a choice of giving my daughter to her father for majority of the time, or to move to Coeur D Alene/Post Falls area so my child could attend a better school district. Her father lives in the Post Falls School district.

I chose to move. I had a great opportunity with housing in Worley, as I had planned on purchasing the home I was living in. However, I made the choice to move so my child could be in a better school district as the judge had wanted and also so I could retain majority custody.

Now that the elementary children are in close proximity to the older children, I am pleased the judge requested I move.

Sincerely

Tori Tickle

10/27/8:009

I Conner Ottosen have 3 Children that live in the worley School Dist that I Choose to Sind them to freeman School dist due to the fact that they will secure a better education

Connie Ottosen 208-665-2368

To whom it may concern:

We have several reasons why we have not sent our children to Lakeside Elementary.

First, we have observed a lack of being committed academic excellence, such as to many short weeks part days, interuptions resulting in a very Low educational vating state wide!

Next, the lack of a strong math-science curriculum is very disturbing.

Finally, we want our children to be in a safe and secure learning environment without the frequent, disruptive behavior of other unmotived students.

Alithout a proper well structured education our children can not succeed in the world of today!

The Jennedkens Family

October 30,2009

To Whom It May Concern

Regarding the Plummer/Worley School District. I am a life long resident of the Worley community.I ama also retired and had planned to spend my time and energies on personal interests.However,I have spent much of my time these last nbarly three years on this project because of my concern about the direction the board and adminication of this school district hyave taken it. Also, their lack of concern about the drop out rate and the numbers of students who are being home schooled ortaken by their families to other school districts daily(including my three grandchildren).

Carles Skelkon

02/04/2009 21:34 208-245-3948

ROGERS LAW OFFICE Appendix E

PAGE 02

TELEPHONE: 208-245-2521

LAW OFFICES OF DAVID B. ROGERS CHARTERED 720 COLLEGE AVENUE ST. MARIES, IDAHO 83861

FACSIMILE: 208-245-3948

February 3, 2009

Ms. Karyn Stockdale Clerk Plummer/Worley School District No. 44 P. O. Box 130 Plummer, Idaho 83851

#### Re: S.O.S. Committee Petition for Rezoning

Dear Ms. Stockdale:

I have been asked to formalize my comments on the Petition for Rezoning filed by the Save our Schools committee from Worley. As I have previously expressed, I do not believe that the petition is adequate to trigger a rezoning. This is so for the following reasons:

First, the petition is just that, a petition. 33-313(4) requires a "proposal." A proposal would be more than simply a demand as is set forth in the petition filed herein. See e.g., 33-310, Consolidation of Contiguous School Districts, wherein only a petition is required to trigger activity by the board of trustees.

This is not a semantical difference. As you are aware, rezoning is a time consuming and not inexpensive process. The drawing of the district must be done with sufficient precision to equalize, as much as possible, the representation of population by the trustees from those districts, all of which is required by 33-313(2).

As you know, the Districts were redrawn after the 2000 census and will be reviewed after the 2010 census. In fact, after the 2010 census, the Districts will have to be reviewed; this is required by 33-313(4). A complicating factor here is that 33-313(3) states, "Trustee zones may be redefined and changed but not more than once every five (5) years in the manner hereinafter provided." 33-313(2) specifically requires in the proposal that each proposed trustee zone "shall be defined and drawn so that, as reasonably as may be, each such zone shall have approximately the same population."

Again, the <u>petition</u> filed by the Save our Schools committee did not comply with these requirements.

After the initial petition was filed and it was explained to the SOS committee why the District was not going to act on the petition, you were contacted with regard to certain statistical data provided by the Idaho Department of Labor and

IXIL 22, 2010

02/04/2003 21.34 208-245-3948

ROGERS LAW UNFICE

PAGE 03

Ms. Karyn Stockdale Page 2 February 3, 2009

Industries. After checking with the Idaho Department of Labor and Industries, it appeared that the "data" was simply prepared by the Department of Commerce, but no source of the data was given; no accuracy was claimed; and it was specifically stated that the information was never intended for any legal purpose. In other words, no one should rely on that data for any specific purpose. Additionally, the "data" included lands outside the school district with no way to separate out the information — even if it had otherwise been adequate. This is certainly not adequate information upon which to base a redrawing of trustee zones.

It is also my understanding that further checking has turned up no source of information even approaching the accuracy of the information which will result from the decennial census next year. Even the U. S. Census Bureau was contacted. They said that they were aware of no source of the necessary data until the 2010 census. Apparently, after that they are going to try to have the information available annually. We shall see.

For all of the foregoing reasons, I do not believe that it would be necessary or even appropriate for the Board of Trustees to redraw the trustee zones in response to the <u>petition</u> filed by the SOS committee.

Very truly yours,

David B. Rogers Attorney At Law

DBR/jd

cc: Tim Clark Marlow Thompson Rick McCully Paul Daman Ida Gustin Tami Gauthier Terry Blessing George Olsen

# Appendix E

In accordance with I.C. §33-313 we, the undersigned, submit this petition on September 8, 2008, to the Board of Trustees for the Plummer-Worley Joint District #44 to take action to redefine and change the trustee zones within the district.



This petition is based on the most recent school district population estimates provided by the Idaho Department of Commerce and Labor whose demographic figures reflect a significant enough change to warrant re-zoning of the district. These figures indicate a decline in school district population density in Benewah County, and an increase in school district population density in Kootenai County.

With the increased population we feel that the students and residents of the zones in Kootenai County are not receiving an accurate representation on the current Board of Trustees, and that re-zoning efforts at this time would provide equity in the representation of our communities.

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ing TAYLON RO.335 WORLEY TO petty Jo Stewart 9821 K St POBOX 187 Workey Delmas Brown P.O. Box 95 Workey, ID Muniel Welay P.O. Box 68 Worley, ID Brian Conlig PO 3768 Worley Id

Phone 688-5024 686

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In accordance with I.C. §33-313 we, the undersigned, submit this petition on September 8, 2008, to the Board of Trustees for the Plummer-Worley Joint District #44 to take action to redefine and change the trustee zones within the district.



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With the increased population we feel that the students and residents of the zones in Kootenai County are not receiving an accurate representation on the current Board of Trustees, and that re-zoning efforts at this time would provide equity in the representation of our communities.

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Katherine Cline George Braman Margery Braman Ted McConnachie Pauline McConnachie Beverly Bloomsburg Virginia Nigh Joe Bloomsburg **Rosalie** Davis Darleen Sheldon William Waddell **Bill Hickman** Michael Callahan Ronald Cline Glen Stewart Bud Sheldon Eunice Meredith Jon Huber Kristy Waddell Betty Frederick **Cleve Frederick** Maxine Frederick Genevieve Leonard David Leonard Mike Hills Elaine Meredith Cleora Shewell **Villiam Shewell** Lana Sifford Keith Gilbert Shannon Gilbert Patricia Nigh Aaron King Don Cash Randy Holt Andrea Nelson Don Montague Crystal Way Don Hanson Larry Dershem Jackie Dershem Mary McCaffrey Ronald McCaffrey **Dottie Brouse** Arlene Jenneskens Norma Slinkard Wilmet Frederick Gerald Taylor Guenter Lange Kathy Jo Stewart Gerald Holt Sally Holt Delmas Brown Muriel Wilcox

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6035 W. Conkling Rd	Worley, ID 83876
22505 S. Monticola Ct	Worley, ID 83876
22505 S. Monticola Ct	Worley, ID 83876
30300 S. 3rd	Worley, ID 83876
30300 S 3rd	Worley, ID 83876
945 W. Joe's Circle	Worley, ID 83876
29601 3rd Street	Worley, ID 83876
945 W. Joe's Circle	Worley, ID 83876
2495 W. Cliffdwellers D	r Worley ID 83876
27900 Cave Bay Rd	Worley ID 83876
9726 G Street	Worley ID 83876
2834 W Conkling Rd	Worley ID 83876
20 W Jerry Lane	Worley ID 83876
6035 W Copkling Rd	Worley ID 83876
0821 W K Street	Worley, ID 83876
27000 Cave Bay Pd	Worley ID 83876
A7866 S Highway 05	Worley, ID 83876
47800 S. Highway 95	Worley, ID 83876
29903 S. 1 Street	Worley, ID 83870
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9718 G Street	Worley, ID 83876
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30102 S 2nd	Worley, ID 83876
9719 G Street	Worley, ID 83876
9719 G Street	Worley, ID 83876
9925 D Street	Worley, ID 83876
9817 E Street	Worley, ID 83876
S. 22360 Lakeshore Dr	Worley, ID 83876
9722 G Street	Worley, ID 83876
9916 H Street	Worley, ID 83876
9819 W. G Street	Worley, ID 83876
9819 W. G Street	Worley, ID 83876
9715 F Street	Worley, ID 83876
4809 W. Rolling Hills	Worley, ID 83876
4809 Rolling Hills	Worley, ID 83876
5976 W. Conkling Rd	Worley, ID 83876
5976 W. Conkling Rd	Worley, ID 83876
5827 Conkling Rd	Worley, ID 83876
5661 Sunny Slopes	Worley, ID 83876
8469 W Sunny Slopes	Worley, ID 83876
8469 Sunny Slopes	Worley, ID 83876
30200 S. 2 <sup>nd</sup> Street	Worley, ID 83876
30202 S. 3rd Street	Worley, ID 83876
9821 K Street	Worley, ID 83876
9817 K Street	Worley, ID 83876
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6169 Sunny Slopes	Worley, ID 83876
2991 W. Conkling Rd	Worley, ID 83876
16641 Burton Rd	Worley, ID 83876
9817 F Street	Worley, ID 83876
47866 S. Highway 95	Worley, ID 83876
9916 W. H Street	Worley, ID 83876
7077 W Cottonwood Rd	Worley, ID 83876
S 24055 Drechsel Rd	Worley, ID 83876
22360 S. Lakeshore	Worley, ID 83876
12712 W. Sunmeadow Rd	Worley, ID 83876
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Appendix F



Save Our School Committee P.O. Box 312 Worley, ID 83876

To: Plummer Worley Joint School District #44 Board of Trustees

We, as members of the "Save Our School" Committee, hereby submit this petition to the members of the District 44 School Board requesting your consideration for the purpose of deconsolidating the Worley portion of the Joint School District from the current District 44. This includes all of Zone 1, and those portions of Zones 2 and 3 located in Kootenai County.

We feel that there is sufficient reason to justify your careful consideration of this proposition based on the following points:

1) It is clearly obvious that members of the School Board and the current School Administration are intent on removing the Elementary School from Worley, and establishing it in the Plummer community. These continuing efforts have been very costly to the District, and continues to be a serious concern to the long standing members of the community.

2) For the past four to five years the Joint School District 44 has failed to bring the student educational achievements up to State standards. This Joint School District is one of 15 State Public School Districts in that category, and has repeatedly ranked near the bottom in the State.

3) Efforts to increase the educational opportunities of the students have centered around building new facilities which fails to directly address the actual educational needs of the students.

4) Each year more and more parents elect to either move their children to an adjoining district, or revert to home schooling. The best guess as to the number of students affected is approximately 160. This is a significant factor which has a three fold detrimental effect on District 44.

a) The per-capita loss of revenue from the State has a significant fiscal impact on the ability of the school to provide full educational services to the remaining students, and support the needs of the staff.

b) Those students who no longer attend class in the District are usually considered the stronger, more motivated learners. Without those children attending our school the efforts to bring the overall District Educational Achievement records up to State and Federal levels are increasingly difficult.

c) Parents who care about their children's education are the members of the populace who are active in the community and in the school efforts to enhance the learning process. They do this through PTA groups and booster activities. We lose those energies when the parents remove their children from our district, and no longer support the education programs.

5) Although the District School Board has been aware (ALSC report, 1997) of the need for numerous renovation efforts for the Elementary School no such effort has been expended to enact a Supplemental Bond to help effect those maintenance requirements which exceed the scope of the normal budget. The School District has allowed the Elementary School to substantially deteriorate, and it will now require extensive efforts to renovate the school. This portion of the community has repeatedly expressed it's support to help with the needed renovation, but the District has consistently ignored those offers, and is intent on building a ne facility in Plummer. We, as members of the District, are firmly convinced that the school can renovated for much less than the cost of a new facility, and much less than the estimated amou presented in the most recent ALSC evaluation.

If this request for de-consolidation is favorably addressed we intend to proceed with efforts to establish a Charter School on the existing Worley Elementary School site. In addition, it is our intent to proceed with the required renovation projects, and then continue to properly maintain the structure in a manne that will provide an adequate facility to meet the needs of the students.

There are numerous other factors which have an impact, and we would be more than willing to discuss these points at your convenience. We sincerely feel that the proposed de-consolidation would be beneficial to both groups.

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Respectfully Submitted,

Members of "Save Our School" Committee

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Member Name

Physical Address

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Respectfully Submitted, Members of "Save Our School" Committee

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# SUBJECT

Correction of School District Boundaries in the Lakeland and West Bonner County Joint School Districts

## REFERENCE

- August 21, 2008 M/S (Luna/Agidius): To accept the findings and conclusions issued by the hearing officer and to approve the recommendation of the hearing officer to excise and annex property from West Bonner School District to Lakeland School District as proposed in the petition submitted by Chris Nunnallee. Motion carried unanimously.
- April 17, 2008 M/S (Thilo/Luna): To accept the report and the recommendation of the hearing officer's report and allow an election to move forward in the excision and annexation request as presented. Motion carried unanimously.

# APPLICABLE STATUTE, RULE, OR POLICY

Sections 33-307, Idaho Code IDAPA 08.02.01.050, Rules Governing Uniformity

# BACKGROUND/DISCUSSION

This matter comes before the Board pursuant to a petition filed by Lakeland Joint School District No. 132 ("Lakeland"). Lakeland's petition requests that the Board enter orders under Section 33-307, Idaho Code, to modify the Board's Orders of June 25, 2008 and October 28, 2008 to correct errors in legal descriptions regarding Lakeland's boundaries and those of West Bonner School District ("West Bonner"). These errors have resulted in the State Tax Commission being unable to provide for the parcels annexed by election into Lakeland to be appropriately scheduled and taxed for Lakeland's benefit. State Department of Education (SDE) staff has worked with Lakeland officials and its legal counsel regarding this matter. The SDE supports Lakeland's petition and requests that it be granted.

In 2008, the Board approved two petitions to annex and excise property from West Bonner into Lakeland. Subsequent to approval of each petition, elections were held and voters in the affected areas unanimously approved each annexation and excision. Both West Bonner and Lakeland have operated since the elections as though the boundary changes were in effect. Staff at the State Tax Commission has brought two problems to light which have impacted its ability to accept the boundary changes for taxing district purposes pursuant to Section 62-215, Idaho Code. First, regarding the Board's June 2008, boundary change, there was a discrepancy between the voter map and the written legal description. Both districts had intended that the formal legal description would correspond with the boundaries on the map; however, the written legal

description could not be harmonized with the map. Second, there is a typographical error in the Board's October 2008 order wherein certain descriptions were referenced by "1/4" rather than "1/2" references.

The supporting materials presented herein by Lakeland include affidavits from Tom Taggart, Lakeland's Director of Business and Support Services, whose affidavit is accompanied by corrected legal description prepared by a registered land surveyor for all parcels of property which were involved in both elections, and by Larry Brown, who is chairman of Lakeland's Board of Trustees.

Section 33-307(1), Idaho Code, permits the Board to find that school district boundaries "should be corrected or altered, because of error in the legal description of the boundaries, or for any other reason, including, but not limited to: an area of the state being including in more than one school district; or "[t]he approval in any school election involving the excision and annexation of territory." If the Board makes the requisite finding under the statute, then the Superintendent of Public Instruction is charged with making "an appropriate order . . . correcting or altering the boundaries of the districts, in such manner, as in his judgment, is just and proper." The Superintendent's order is to be sent by the SDE "to the board of trustees of any school district affected by the order, which shall notify the state tax commission and the county assessor and county recorder in accordance with the provisions of section 63-215, Idaho Code.

# ATTACHMENTS

Attachment 1 – Petition for Modification	Page 3
Attachment 2 – Affidavit of Larry Brown	Page 7
Attachment 3 – Affidavit of Tom Taggart	Page 9
Attachment 4 – Corrected Legal Descriptions	Page 13

# **BOARD ACTION**

A motion to approve the correction of the boundary legal description between the West Bonner County Joint School District to the Lakeland School District.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No \_\_\_\_\_

CHARLES M. DODSON Attorney at Law 1424 Sherman Avenue, Suite 300 Coeur d'Alene ID 83814 (208) 664-1577 Facsimile (208) 666-9211 ISB #2134

#### BEFORE THE STATE BOARD OF EDUCATION

IN RE: BOUNDARY CHANGE BETWEEN WEST BONNER COUNTY JOINT SCHOOL DISTRICT NO. 83 AND LAKELAND JOINT SCHOOL DISTRICT NO. 272

PETITION FOR MODIFICATION OF ORDERS OF THE STATE BOARD OF EDUCATION DATED JUNE 25, 2008 AND OCTOBER 28, 2008 PURSUANT TO IDAHO CODE 33-307

COMES NOW, LAKELAND JOINT SCHOOL DISTRICT NO. 272, and Petitions the State Board of Education to modify its Orders entered in the cases of West Bonner County School District No. 83 and Lakeland Joint School District No. 272 as such Orders were entered into by the Board on the 25th day of June, 2008 and the 28th day of October, 2008, specifically requesting an Order modifying both Orders jointly, Nunc Pro Tune to the date of said Orders, upon the grounds and for the reasons that the original Petitions which culminated in the Orders of the State Board of Education were properly formulated, save for appropriate and accurate legal descriptions of the property to be annexed to Lakeland Joint School District No. 272 and excised from West Bonner County School District No. 83, that all of the procedures as provided for by Idaho Code 33-308 as it existed through

1-PETITION FOR MODIFICATION OF ORDERS OF THE STATE BOARD OF EDUCATION

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and inclusive of 2008 were complied with by Petitioners, Lakeland Joint School District No. 272, and West Bonner County School District No. 83 which includes without limitation:

A. The appropriate filing of Petitions with each school district, bearing the appropriate names and addresses of the Petitioners and erroneous legal description on each Petition; accurate maps showing the boundaries of the district as they then appeared and as they would appear upon excision and annexation; the appropriate names of the districts affected; a description of the reasons for which the Petitions were submitted; an estimated number of children residing within each area petitioned; that the Board of Trustees of each school district transmitted their position statement to the State Department of Education; the State Department of Education in each case subsequently approved the proposal (after extensive public hearings as reflected by the record); that thereafter appropriate elections were held and each election for each annexation the vote was one hundred percent (100%) affirmative and no negative votes; and further there was no confusion by the patrons or the districts involved regarding what properties were to be annexed to Lakeland Joint School District No. 272 and excised from West Bonner County School District No. 83.

It is further requested that the State Board of Education pursuant to Idaho Code 33-307(1) because of the error in legal description, find that the school district boundary should be corrected and that the State Board issue an Order amending its previous two Orders as hereinabove referenced to set forth the total land mass legal description as set forth on the Affidavit of Tom Taggart in support hereof.

RESPECTIVELY SUBMITTED this /8 2010.

CHARLES M. DODSON GENERAL COUNSEL FOR LAKELAND JOINT SCHOOL DISTRICT NO. 272

cc: Dr. Mary Ann Ranells, Superintendent Lakeland Joint School District No. 272 P.O. Box 39 Rathdrum, Idaho 83858

2-PETITION FOR MODIFICATION OF ORDERS OF THE STATE BOARD OF EDUCATION

PAGE 09

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Mike McGuire, Superintendent West Bonner School District No. 83 221 Main Street Priest River ID 83856

3-PETITION FOR MODIFICATION OF ORDERS OF THE STATE BOARD OF EDUCATION

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CHARLES M. DODSON Attorney at Law 1424 Sherman Avenue, Suite 300 Coeur d'Alene ID 83814 (208) 664-1577 Facsimile (208) 666-9211 ISB #2134

#### BEFORE THE STATE BOARD OF EDUCATION

IN RE: BOUNDARY CHANGE BETWEEN WEST BONNER COUNTY JOINT SCHOOL DISTRICT NO. 83 AND

LAKELAND JOINT SCHOOL DISTRICT NO. 272

STATE OF IDAHO ) ) ss. County of Kootenai )

LARRY BROWN, being first duly sworn on oath deposes and states as follows:

1. That Affiant makes this Affidavit on the basis of his own personal information, belief and knowledge, and facts to which he could testify if called to do so in an administrative proceeding or a court of law.

2. That at the time of the annexations which are referenced in the above caption, I served as a Board Member for Lakeland Joint School District No. 272, and currently serve as the Chairman of the Board of Trustees of Lakeland Joint School District No. 272. That based upon my

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AFFIDAVIT OF LARRY BROWN

participation as a Board Member in both annexation proceedings all parties concerned were more intent on the maps describing the areas to be annexed/excised, as opposed to the legal descriptions; there did not appear to be any confusion by all the participants as to the land mass described on the maps; that it is my understanding that the vote in both elections was one hundred percent (100%) affirmative; and that it did not appear that there was any confusion by patrons or the districts (noting I can speak only for Lakeland Joint School District No. 272).

3. That I have been reasonably informed that the Idaho State Tax Commission requires a corrected Order from the State Board of Education prior to advising Bonner County to provide for the parcels annexed into Lakeland Joint School District No. 272 to be appropriately scheduled and taxed according to the tax assessment for the benefit of Lakeland Joint School District No. 272.

FURTHER AFFIANT SAITH NOT.

íų. LARRY BROWN 2010SUBSCRIBED AND SWORN TO before me this day of HEIDI E HERNDON NOTARY PUBLIC FOR IDAHO NOTARY PUBLIC 357 +A1 RESIDING AT: STATE OF IDAHO MY COMMISSION EXPIRES. 101 day of I hereby certify that on the March , 2010 a true and correct copy of the foregoing was: mailed, postage prepaid: to: Dr. Mary Ann Ranells, Superintendent Lakeland Joint School District No. 272 P.O. Box 39 Rathdrum ID 83858 Mike McGuire, Superintendent West Bonner County School District No. 83 221 Main Street Priest River ID 83856 CHARLES M. DODSON, ATTORNEY AT LAW 2-AFFIDAVIT OF LARRY BROWN

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CHARLES M. DODSON Attorney at Law 1424 Sherman Avenue, Suite 300 Coeur d'Alene ID 83814 (208) 664-1577 Facsimile (208) 666-9211 ISB #2134

# BEFORE THE STATE BOARD OF EDUCATION

IN RE: BOUNDARY CHANGE BETWEEN WEST BONNER COUNTY AFFIDAVIT OF TOM TAGGART

JOINT SCHOOL DISTRICT NO. 83

AND

LAKELAND JOINT SCHOOL DISTRICT NO. 272

STATE OF IDAHO ) ) 55. County of Kootenai )

TOM TAGGART, being first duly sworn on oath deposes and states as follows:

1. That Affiant makes this Affidavit on the basis of his own personal information, belief and

knowledge, and facts to which he could testify if called to do so in an administrative proceeding or

2. That at the time of the annexation requests addressed by the State Board's Order of June a court of law. 25, and October 28, 2008, Affiant served as Director of Business and Support Services for Lakeland Joint School District No. 272, and continues in service in said position at the time of making this

1-AFFIDAVIT OF TOM TAGGART

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TAB 4 Page 9

Affidavit and is therefore familiar with the records and files of the school district, including actively participating on behalf of the administration in both annexations/excision proceedings; 3. That Affiant attended the public hearings held in both annexation/excision proceedings,

3. That Affiant attended the public, that the maps attached to each Petition were the basis for which were well attended by the public, that the maps attached to each Petition were the basis for the determination of what properties were to be annexed and excised (most lay persons do not understand how to read legal descriptions), that pursuant to my observations of the attendance at those public hearings it did not appear there was any confusion regarding what property was going those public hearings it did not appear there maps:

to be annexed or excised based upon the maps;
4. That the vote in both elections held pursuant to the annexations/excisions above referenced was one hundred percent (100%) affirmative with <u>no</u> negative votes.

referenced was one number percent (1001) and the second of the second

the maps). 6. That said legal descriptions (Exhibit "A") have been provided to the Bonner County

Mapping Department, and there has been no objection thereto.

FURTHER AFFIANT SAITH NOT.

TOM TAGGART

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SUBSCRIBED AND SWORN TO before me this

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FOR IDAHO FAIRS MY COMMISSION EXPIRES: 7-18-12 RESIDING AT:

day of

# 2-AFFIDAVIT OF TOM TAGGART

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I hereby certify that on the  $\frac{19}{19}$ day of March , 2010 a true and correct copy of the foregoing was: mailed, postage prepaid:

to: Dr. Mary Ann Ranells, Superintendent Lakeland Joint School District No. 272 P.O. Box 39 Rathdrum 1D 83858

Mike McGuire, Superintendent West Bonner County School District No. 83. 221 Main Street Priest River, Idaho 83856

CHARLES M. DODSON ATTORNEY AT LAW

3-AFFIDAVIT OF TOM TAGGART

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EXHIBIT A Corrected Legal Descriptions of June 25, 2008 & October 27, 2008

That the following property be excised from West Bonner County School District No. 83 and annexed to Lakeland Joint School District No. 272:

All of those parcels of land located in Township 54 North, Range 4 West, Boise Meridian, Bonner County, Idaho as follows:

 Section 29: All those parcels of land located in Section 29 described as follows: The south one-half; The south one-half of the southeast quarter of the northeast quarter; The southwest quarter of the northeast quarter; The south one-half of the northwest quarter; The south one-half of the south one-half of the northwest quarter of the northwest quarter;

- 2. Section 30: All those parcels of land located in the northeast quarter of Section 30, EXCEPT the north one-half of the north one-half of said Northeast quarter;
- Section 31: All those parcels of land located in the east one-half of said section lying east of Idaho State Highway 41 and southeasterly of Spirit Lake Cutoff Road; together with the south one-half of the south one-half of the southeast quarter.
- 4. Section 32: All those parcels lying within Section 32.



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## SUBJECT

Idaho Content Standards for Science

# REFERENCE

February 22-23, 2006 M/S (Hall/Stone): To approve the temporary rule that incorporates by reference the Idaho Achievement Standards for Language Arts, Mathematics, Science, Social Studies, Health, Physical Education, Humanities and the Idaho Alternative Standards. Motion carried unanimously.

# APPLICABLE STATUTE, RULE, OR POLICY

Section 33-1612, Idaho Code IDAPA 08.02.03.004, Rules Governing Thoroughness IDAPA 08.02.03.128.01, Curricular Materials Selection

## **BACKGROUND/DISCUSSION**

The Idaho Content Standards for Science are due for revision as part of the six year curricular materials adoption cycle. Idaho Curricular Materials Adoption Process provides review and evaluation of new curricular materials for science in 2011.

There were no changes made to the Idaho Content Standards for Science. The science standards, goals, and objectives were reviewed by a committee of teachers, higher education, and administrators. Since no changes were suggested by the committee, the standards remain aligned to the state assessment (ISAT) as mandated by NCLB.

The current Idaho Content Standards for Science are posted on the Board of Education website (as referenced in IDAPA 08.02.03.004) for grades K-12.

#### ATTACHMENTS

Attachment 1 – Idaho Content Standards for Science

Page 3

# STAFF COMMENTS AND RECOMMENDATIONS

# **BOARD ACTION**

This item is for informational purposes only. Any action will be at the Board's discretion.

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#### IDAHO CONTENT STANDARDS KINDERGARTEN SCIENCE

#### **Standard 1**: Nature of Science

Students explore the process of scientific investigation through observations and collection of data over time. Students follow instructions and work with others.

#### Goal 1.1: Understand Systems, Order, and Organization

No objectives at this grade level.

#### Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

**Objective(s): By the end of Kindergarten, the student will be able to:** K.S.1.2.1 Make observations and collect data. (528.01.a)

#### **Goal 1.3: Understand Constancy, Change, and Measurement**

- **Objective(s): By the end of Kindergarten, the student will be able to:** K.S.1.3.1 Measure in non-standard units. (528.02.b)
- Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State
- **Objective(s): By the end of Kindergarten, the student will be able to:** K.S.1.4.1 Apply the concepts of yesterday, today, and tomorrow. (528.03.a)

#### **Goal 1.5: Understand Concepts of Form and Function**

No objectives at this grade level.

#### Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

- **Objective(s): By the end of Kindergarten, the student will be able to:** K.S.1.6.1 Make observations. (529.01.a)
- Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors
- **Objective(s): By the end of Kindergarten, the student will be able to:** K.S.1.7.1 Use cooperation and interaction skills. (538.01.a)

#### **Goal 1.8: Understand Technical Communication**

**Objective(s): By the end of Kindergarten, the student will be able to:** K.S.1.8.1 Follow instructions. (538.02.a)

Idaho Content Standards/Kindergarten/Science/4-24-06

#### **Standard 2: Physical Science**

Students use their senses to investigate the organizational patterns in the world around them and describe a variety of objects.

# Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

#### **Objective(s): By the end of Kindergarten, the student will be able to:** K.S.2.1.1 Use senses to describe matter. (530.01.a)

#### **Goal 2.2: Understand Concepts of Motion and Forces**

No objectives at this grade level.

#### Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

#### **Goal 2.4: Understand the Structure of Atoms**

No objectives at this grade level.

#### **Goal 2.5: Understand Chemical Reactions**

No objectives at this grade level.

#### Standard 3: Biology

Students observe plants and animals and describe their characteristics.

#### **Goal 3.1: Understand the Theory of Biological Evolution**

**Objective(s): By the end of Kindergarten, the student will be able to:** K.S.3.1.1 Observe and describe the characteristics of plants and animals. (532.01.a)

#### Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

**Objective(s):** By the end of Kindergarten, the student will be able to: K.S.3.2.1 Describe the difference between living and non-living things. (533.01.a)

#### Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

#### **Standard 4: Earth and Space Systems**

Students make and describe observations of seasonal changes.

Idaho Content Standards/Kindergarten/Science/4-24-06

# Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

#### **Objective**(s): By the end of Kindergarten, the student will be able to:

K.S.4.1.1 Name the four seasons. (534.01.a)K.S.4.1.2 Place the four seasons in order. (534.01.a)

#### Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

#### Standard 5: Personal and Social Perspectives; Technology

Students describe local environments

#### Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

# Objective(s): By the end of Kindergarten, the student will be able to:K.S.5.1.1Describe characteristics of a man-made environment (home, school...).(536.01.a)

#### Goal 5.2: Understand the Relationship between Science and Technology

No objectives at this grade level.

#### Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives at this grade level.

#### IDAHO CONTENT STANDARDS GRADE 1 SCIENCE

#### **<u>Standard 1</u>**: Nature of Science

Students explore the process of scientific investigation through observations and data collection, using standard and non-standard units of measurement. Students follow multi-step instructions and work with others.

#### Goal 1.1: Understand Systems, Order, and Organization

No objectives at this grade level.

#### Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

**Objective(s):** By the end of Grade 1, the student will be able to: 1.S.1.2.1 Make observations, collect data, and use data. (543.01.a)

#### **Goal 1.3: Understand Constancy, Change, and Measurement**

#### **Objective(s):** By the end of Grade 1, the student will be able to:

1.S.1.3.1 Measure in both standard and non-standard units. (543.02.b)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

#### **Objective**(s): By the end of Grade 1, the student will be able to:

1.S.1.4.1 Explain the concepts of past, present, and future. (543.03.a)

#### **Goal 1.5: Understand Concepts of Form and Function**

No objectives at this grade level.

#### Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

# **Objective(s):** By the end of Grade 1, the student will be able to:

1.S.1.6.1 Make and record observations. (544.01.a)

#### Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

**Objective(s): By the end of Grade 1, the student will be able to:** 1.S.1.7.1 Demonstrate cooperation and interaction skills. (553.01.a)

#### **Goal 1.8: Understand Technical Communication**

#### **Objective(s): By the end of Grade 1, the student will be able to:** 1.S.1.8.1 Follow multi-step instructions. (553.02.a)

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#### **<u>Standard 2</u>: Physical Science**

Students describe properties of common objects and how movement is a change of position.

# Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

#### **Objective(s): By the end of Grade 1, the student will be able to:** 1.S.2.1.1 Describe properties of objects. (545.01.a)

#### **Goal 2.2: Understand Concepts of Motion and Forces**

#### **Objective(s):** By the end of Grade 1, the student will be able to:

1.S.2.2.1 Describe the position and motion of objects. (ex. revolve, rotate, at rest, float, and fall) (545.02.a)

#### Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

#### **Goal 2.4: Understand the Structure of Atoms**

No objectives at this grade level.

#### **Goal 2.5: Understand Chemical Reactions**

No objectives at this grade level.

#### **Standard 3: Biology**

Students describe the life cycles of living things and how they survive in their environment.

#### Goal 3.1: Understand the Theory of Biological Evolution

#### **Objective(s):** By the end of Grade 1, the student will be able to:

1.S.3.1.1 Describe the life cycle of a plant (seed, growth, reproduction, death). (547.01.a)

1.S.3.1.2 Describe the life cycle of an animal (birth, development, reproduction, death). (547.01.a)

#### Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

#### **Objective(s):** By the end of Grade 1, the student will be able to:

1.S.3.2.1 State that living things need food to survive. (548.01.a)

#### Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

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#### **Standard 4: Earth and Space Systems**

Students describe characteristics for each season and the cycle of the seasons.

# Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

#### **Objective(s):** By the end of Grade 1, the student will be able to:

1.S.4.1.1 Identify the four seasons and their characteristics for a local region. (549.01.a)

#### Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

#### Standard 5: Personal and Social Perspectives; Technology

Students describe characteristics of the local environment.

#### Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

#### **Objective(s):** By the end of Grade 1, the student will be able to:

1.S.5.1.1 Identify the characteristics of local natural environments. (playground, backyard). (551.01.a)

#### Goal 5.2: Understand the Relationship between Science and Technology

No objectives at this grade level.

#### Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives at this grade level.

#### IDAHO CONTENT STANDARDS GRADE 2 SCIENCE

#### Students are expected to know content and apply skills from previous grades.

#### Standard 1: Nature of Science

Students identify questions that can be answered through observation, collection, recording, and analysis of data. Students explain that the shape of an item is determined by its function. Students follow multi-step instructions, work cooperatively and use communication skills.

#### Goal 1.1: Understand Systems, Order, and Organization

No objectives at this grade level.

#### Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

**Objective(s):** By the end of Grade 2, the student will be able to: 2.S.1.2.1 Make observations, record and interpret data. (558.01.a)

#### **Goal 1.3: Understand Constancy, Change, and Measurement**

**Objective(s):** By the end of Grade 2, the student will be able to: 2.S.1.3.1 Measure in standard and non-standard units. (558.01.b)

#### Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

**Objective(s): By the end of Grade 2, the student will be able to:** 2.S.1.4.1 Apply the concepts of past, present, and future. (558.03.a)

#### **Goal 1.5: Understand Concepts of Form and Function**

**Objective(s):** By the end of Grade 2, the student will be able to: 2.S.1.5.1 Identify shape and use of objects. (558.04.a)

#### Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

#### **Objective(s):** By the end of Grade 2, the student will be able to:

- 2.S.1.6.1 Identify questions to be investigated. (559.01.a)
- 2.S.1.6.2 Make observations. (559.01.b)
- 2.S.1.6.3 Analyze information and evidence. (559.01.d)
- 2.S.1.6.4 Communicate observations. (559.01.f)

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#### Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

#### **Goal 1.8: Understand Technical Communication**

**Objective(s): By the end of Grade 2, the student will be able to:** 2.S.1.8.1 Follow multi-step instructions. (568.02.a)

#### **Standard 2: Physical Science**

Students describe objects by their properties and explain the affect motion has on an object.

# Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

**Objective(s): By the end of Grade 2, the student will be able to:** 2.S.2.1.1 List properties of an object. (560.01.a)

#### **Goal 2.2: Understand Concepts of Motion and Forces**

**Objective(s): By the end of Grade 2, the student will be able to:** 2.S.2.2.1 Explain how force affects the position and motion of objects. (560.01.a)

#### Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

#### **Goal 2.4: Understand the Structure of Atoms**

No objectives at this grade level.

#### **Goal 2.5: Understand Chemical Reactions**

No objectives at this grade level.

#### **Standard 3: Biology**

Students list the basic needs of animals.

#### **Goal 3.1: Understand the Theory of Biological Evolution**

No objectives at this grade level.

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**Objective(s): By the end of Grade 2, the student will be able to:** 2.S.1.7.1 Practice cooperation and interaction skills. (568.01.a)
### Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

#### **Objective(s):** By the end of Grade 2, the student will be able to:

- 2.S.3.2.1 Identify four basic needs of all living things (food, shelter, water, space). (563.01.a)
- 2.S.3.2.2 Discuss how animals are suited to live in different habitats. (547.01.b)

# Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

# **Standard 4: Earth and Space Systems**

Students describe weather conditions.

# Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

#### **Objective(s):** By the end of Grade 2, the student will be able to:

2.S.4.1.1 Describe the characteristics of different weather conditions. (564.01.b)

# Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

#### **Standard 5:** Personal and Social Perspectives; Technology

Students compare man-made and natural environments. Students identify scientific tools.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

#### **Objective(s):** By the end of Grade 2, the student will be able to:

2.S.5.1.1 Compare and contrast man-made and natural environments. (566.01.a)

#### Goal 5.2: Understand the Relationship between Science and Technology

### **Objective(s):** By the end of Grade 2, the student will be able to:

2.S.5.2.1 Identify tools people have invented for everyday life and for scientific investigations. (565.01.b)

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives at this grade level.

# IDAHO CONTENT STANDARDS GRADE 3 SCIENCE

### Students are expected to know content and apply skills from previous grades.

# Standard 1: Nature of Science

Students apply scientific methods to conduct experiments. Students read and give multi-step instructions.

# Goal 1.1: Understand Systems, Order, and Organization

# **Objective(s):** By the end of Grade 3, the student will be able to:

3.S.1.1.1 Label the parts of a system. (573.01.a)

# Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

#### **Objective(s):** By the end of Grade 3, the student will be able to:

- 3.S.1.2.1 Make observations, collect data and evaluate it. (573.02.a)
- 3.S.1.2.2 Replicate and/or use models. (573.02.b)

# **Goal 1.3: Understand Constancy, Change, and Measurement**

### **Objective(s):** By the end of Grade 3, the student will be able to:

- 3.S.1.3.1 Measure changes that occur. (573.03.b)
- 3.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units. (573.03.c)

#### Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives at this grade level.

#### **Goal 1.5: Understand Concepts of Form and Function**

#### **Objective(s):** By the end of Grade 3, the student will be able to:

3.S.1.5.1 Describe the relationship between shape and use. (573.05.a)

#### Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

#### **Objective(s):** By the end of Grade 3, the student will be able to:

- 3.S.1.6.1 Identify questions that can be answered by conducting scientific tests. (574.01.a)
- 3.S.1.6.2 Conduct scientific tests (574.01.b)
- 3.S.1.6.3 Use appropriate tools and techniques to gather and display data. (574.01.c)
- 3.S.1.6.4 Use data to construct a reasonable explanation. (574.01.d)
- 3.S.1.6.5 Make simple predictions based on data. (574.01.e)
- 3.S.1.6.6 Identify logical alternative explanations. (574.01.f)

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# 3.S.1.6.7 Communicate the results of tests to others. (574.01.g)

### Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

### **Goal 1.8: Understand Technical Communication**

# **Objective(s):** By the end of Grade 3, the student will be able to:

3.S.1.8.1 Read and give multi-step instructions. (583.02.a)

# **Standard 2: Physical Science**

Students use scientific instruments to describe the physical properties of the three states of matter.

# Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

#### **Objective(s):** By the end of Grade 3, the student will be able to:

- 3.S.2.1.1 Use instruments to measure properties. (575.01.a)
- 3.S.2.1.2 Identify the physical properties of solids, liquids, and gases. (575.01.b)
- 3.S.2.1.3 Explain that heating and cooling can cause changes of state in common materials. (575.01.c)

### **Goal 2.2: Understand Concepts of Motion and Forces**

No objectives at this grade level.

#### Goal 2.3: Understand the Total Energy in the Universe is Constant

3.S.2.3.1 Identify potential and kinetic energy. (590.03.a)

#### **Goal 2.4: Understand the Structure of Atoms**

No objectives at this grade level.

#### **Goal 2.5: Understand Chemical Reactions**

No objectives at this grade level.

#### Standard 3: Biology

Students explore the diversity of plants and animals in their environments. Students demonstrate an understanding of food webs.

# **Goal 3.1: Understand the Theory of Biological Evolution**

# **Objective(s):** By the end of Grade 3, the student will be able to:

3.S.3.1.1 Describe the adaptations of plants and animals to their environment. (577.01.a)

# Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

# **Objective(s):** By the end of Grade 3, the student will be able to:

- 3.S.3.2.1 Describe the energy needed for living systems to survive. (578.01.a)
- 3.S.3.2.2 Compare and contrast the energy requirements of plants and animals. (593.01.a)
- 3.S.3.2.3 Label a food chain that shows how organisms cooperate and compete in an ecosystem. (578.01.b)
- 3.S.3.2.4 Diagram the food web and explain how organisms both cooperate and compete in ecosystems. (593.01.b)

# Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

# **<u>Standard 4</u>: Earth and Space Systems**

Students explore the relationship between the sun and Earth.

# Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

#### **Objective(s):** By the end of Grade 3, the student will be able to:

3.S.4.1.1 Explain the reasons for length of a day, the seasons, and the year on Earth. (594.01.a)

#### Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

# Standard 5: Personal and Social Perspectives; Technology

Students identify local environmental issues. Students identify the relationship of tools to scientific investigation.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

**Objective(s): By the end of Grade 3, the student will be able to:** 3.S.5.1.1 Identify local environmental issues. (581.01.a)

# Goal 5.2: Understand the Relationship between Science and Technology

# **Objective(s):** By the end of Grade 3, the student will be able to:

3.S.5.2.1 Describe how technology helps develop tools. (580.01.a)

3.S.5.2.2 Describe the development of tools over time. (580.01.b)

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

# **Objective(s):** By the end of Grade 3, the student will be able to:

3.S.5.3.1 Explain the concept of recycling. (581.03.a)

# IDAHO CONTENT STANDARDS GRADE 4 SCIENCE

#### Students are expected to know content and apply skills from previous grades.

# **Standard 1: Nature of Science**

Students apply scientific methods to conduct experiments, analyze alternative explanations and communicate results of tests. Students analyze and follow multi-step instructions.

# Goal 1.1: Understand Systems, Order, and Organization

#### **Objective(s):** By the end of Grade 4, the student will be able to:

4.S.1.1.1 Explain that a system consists of an organized group of related objects that form a whole. (588.01.a)

### Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

#### **Objective(s):** By the end of Grade 4, the student will be able to:

- 4.S.1.2.1 Make and record observations then analyze and communicate the collected data. (588.02.a)
- 4.S.1.2.2 Define observations and inferences. (588.02.b)
- 4.S.1.2.3 Make, describe and/or use models. (588.02.c)

### **Goal 1.3: Understand Constancy, Change, and Measurement**

#### **Objective**(s): By the end of Grade 4, the student will be able to:

- 4.S.1.3.1 Describe how changes occur and can be measured. (588.03.b)
- 4.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units. (588.03.c)

# Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives at this grade level.

#### **Goal 1.5: Understand Concepts of Form and Function**

#### **Objective**(s): By the end of Grade 4, the student will be able to:

4.S.1.5.1 Explain the relationship between shape and use. (588.05.a)

# **Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills**

#### **Objective**(s): By the end of Grade 4, the student will be able to:

- 4.S.1.6.1 Write questions that can be answered by conducting scientific tests. (589.01.a)
- 4.S.1.6.2 Conduct scientific tests. (589.01.b)
- 4.S.1.6.3 Use appropriate tools and techniques to gather and display data. (589.01.c)

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- 4.S.1.6.4 Use data to construct a reasonable explanation. (589.01.d)
- 4.S.1.6.5 Make predictions based on data. (589.01.e)
- 4.S.1.6.6 Analyze alternative explanations. (589.01.f)
- 4.S.1.6.7 Communicate the results of tests to others in multiple formats. (589.01.g)

# Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

# **Goal 1.8: Understand Technical Communication**

# **Objective(s):** By the end of Grade 4, the student will be able to:

4.S.1.8.1 Analyze and follow multi-step instructions. (598.02.a)

# **Standard 2: Physical Science**

Students use scientific instruments to describe and measure the properties of the three states of matter.

# Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

# **Objective(s):** By the end of Grade 4, the student will be able to:

- 4.S.2.1.1 Use instruments to measure properties (590.01.a)
- 4.S.2.1.2 Describe the physical properties of solids, liquids, and gases. (590.01.b)
- 4.S.2.1.3 Explain the changes caused by heating and cooling materials. (590.01.c)

# **Goal 2.2: Understand Concepts of Motion and Forces**

No objectives at this grade level.

# Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

#### **Goal 2.4: Understand the Structure of Atoms**

No objectives at this grade level.

# **Goal 2.5: Understand Chemical Reactions**

No objectives at this grade level.

#### Standard 3: Biology

Students analyze how plants and animals adapt to their environments. Students classify vertebrates.

# **Goal 3.1: Understand the Theory of Biological Evolution**

# **Objective(s):** By the end of Grade 4, the student will be able to:

- 4.S.3.1.1 Analyze and communicate the adaptations of plants and animals to their environment. (592.01.a)
- 4.S.3.1.2 Describe the difference between vertebrate and invertebrate animals. (592.01.c)
- 4.S.3.1.3 Classify the five groups of vertebrates (mammal, reptiles, amphibians, birds, and fish) based on characteristics. (592.01.c)

# Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

No objectives at this grade level.

# Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

# Standard 4: Earth and Space Systems

Students investigate the basic contents of our solar system.

# Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

### **Objective(s):** By the end of Grade 4, the student will be able to:

4.S.4.1.1	Compare and contrast the basic components of our solar system (planets, sun,
	moon, asteroids, comets, meteors). (594.01.b)

- 4.S.4.1.2 Explain the effect of gravity on orbits and objects. (594.01.c)
- 4.S.4.1.3 Explain the effect of moon's gravity on Earth's tides. (594.01.c)

# Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

# Standard 5: Personal and Social Perspectives; Technology

Students explain how people have invented tools to meet a need or do a job.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

No objectives at this grade level.

# Goal 5.2: Understand the Relationship between Science and Technology

#### **Objective(s):** By the end of Grade 4, the student will be able to:

4.S.5.2.1 Identify tools used for space exploration and for scientific investigations. (595.01.b)

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives at this grade level.

# IDAHO CONTENT STANDARDS GRADE 5 SCIENCE

#### Students are expected to know content and apply skills from previous grades.

# Standard 1: Nature of Science

Students identify the components of a system and explain their relationship to the whole. Students read, execute, and give technical instructions.

# Goal 1.1: Understand Systems, Order, and Organization

# **Objective(s):** By the end of Grade 5, the student will be able to:

5.S.1.1.1 Compare and contrast different systems. (603.01.a)

# Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

# **Objective(s):** By the end of Grade 5, the student will be able to:

- 5.S.1.2.1 Use observations and data as evidence on which to base scientific explanations and predictions. (603.02a)
- 5.S.1.2.2 Explain the difference between observation and inference. (603.02.b)
- 5.S.1.2.3 Use models to explain or demonstrate a concept. (603.02.c)

### **Goal 1.3: Understand Constancy, Change, and Measurement**

#### **Objective(s):** By the end of Grade 5, the student will be able to:

- 5.S.1.3.1 Analyze changes that occur in and among systems. (603.03.b)
- 5.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system. (603.03.c)

# Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives at this grade level.

#### **Goal 1.5: Understand Concepts of Form and Function**

#### **Objective(s):** By the end of Grade 5, the student will be able to:

5.S.1.5.1 Explain how the shape or form of an object or system is frequently related to its use or function. (603.05.a)

#### **Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills**

#### **Objective(s):** By the end of Grade 5, the student will be able to:

- 5.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments. (604.01.a)
- 5.S.1.6.2 Conduct scientific investigations using a control and a variable. (604.01.b)

5.S.1.6.3	Select and use appropriate tools and techniques to gather and display data. $(604.01.c)$
5.S.1.6.4	Use evidence to analyze descriptions, explanations, predictions, and models (604.01.d)
5.S.1.6.5	State a hypothesis based on observations. (604.01.e)
5.S.1.6.6	Compare alternative explanations and predictions. (604.01.f)
5.S.1.6.7	Communicate scientific procedures and explanations. (604.01.g)

# Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

# **Goal 1.8: Understand Technical Communication**

**Objective(s):** By the end of Grade 5, the student will be able to: 5.S.1.8.1 Read and follow technical instructions. (613.02.a)

# **Standard 2: Physical Science**

Students explain the difference between an element, a mixture, and a compound.

# Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

#### **Objective(s):** By the end of Grade 5, the student will be able to:

- 5.S.2.1.1 Describe the differences among elements, compounds, and mixtures. (605.01.a)
- 5.S.2.1.2 Compare the physical differences among solids, liquids, and gases. (605.01.c)
- 5.S.2.1.3 Explain the nature of physical change and how it relates to physical properties. (605.01.d)

# **Goal 2.2: Understand Concepts of Motion and Forces**

No objectives at this grade level.

# Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

# **Goal 2.4: Understand the Structure of Atoms**

No objectives at this grade level.

# **Goal 2.5: Understand Chemical Reactions**

No objectives at this grade level.

# **Standard 3: Biology**

Students explain the differences between plant and animal cells. Students understand that plants convert energy. Students know that traits are passed from parents to offspring.

# **Goal 3.1: Understand the Theory of Biological Evolution**

No objectives at this grade level.

# Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

# **Objective(s):** By the end of Grade 5, the student will be able to:

5.S.3.2.1 Communicate how plants convert energy from the sun through photosynthesis. (608.01.a)

# Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

# **Objective(s):** By the end of Grade 5, the student will be able to:

- 5.S.3.3.1 Compare and contrast the structural differences between plant and animal cells. (606.01.b)
- 5.S.3.3.2 Explain the concept that traits are passed from parents to offspring. (606.01.c)

# **<u>Standard 4</u>: Earth and Space Systems**

Students describe the dynamic changes that occur on Earth.

# Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

# **Objective(s):** By the end of Grade 5, the student will be able to:

5.S.4.1.1 Describe the interactions among the solid earth, oceans and atmosphere (erosion, climate, tectonics and continental drift). (609.01.a)

# Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

# Objective(s): By the end of Grade 5, the student will be able to:

5.S.4.2.1 Explain the rock cycle and identify the three classifications of rocks. (609.02.a)

# Standard 5: Personal and Social Perspectives; Technology

Students use the scientific method to identify environmental issues.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

# **Objective(s):** By the end of Grade 5, the student will be able to:

5.S.5.1.1 Identify issues for environmental studies. (611.01.a)

# Goal 5.2: Understand the Relationship between Science and Technology

# **Objective**(s): By the end of Grade 5, the student will be able to:

- 5.S.5.2.1 Describe how science and technology are part of a student's life. (610.01.a)
- 5.S.5.2.2 List examples of science and technology. (610.01.b)

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

# **Objective(s):** By the end of Grade 5, the student will be able to:

5.S.5.3.1 Identify the differences between renewable and nonrenewable resources. (611.03.a)

# IDAHO CONTENT STANDARDS GRADE 6 SCIENCE

#### Students are expected to know content and apply skills from previous grades.

# Standard 1: Nature of Science

Students gather evidence to differentiate between predictions, observations, and inferences. Students read, give, and execute technical instructions.

# Goal 1.1: Understand Systems, Order, and Organization

# **Objective**(s): By the end of Grade 6, the student will be able to:

6.S.1.1.1 Analyze different systems. (618.01.a)

# Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

# **Objective**(s): By the end of Grade 6, the student will be able to:

- 6.S.1.2.1 Explain how observations and data are used as evidence on which to base scientific explanations and predictions. (618.02.a)
- 6.S.1.2.2 Use observations to make inferences. (618.02.b)
- 6.S.1.2.3 Use models to explain or demonstrate a concept. (618.02.c)

# **Goal 1.3: Understand Constancy, Change, and Measurement**

#### **Objective**(s): By the end of Grade 6, the student will be able to:

- 6.S.1.3.1 Analyze changes that occur in and among systems. (618.03.b)
- 6.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system. (618.03.c)

# Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives at this grade level.

#### **Goal 1.5: Understand Concepts of Form and Function**

#### **Objective**(s): By the end of Grade 6, the student will be able to:

6.S.1.5.1 Analyze how the shape or form of an object or system is frequently related to its use and/or function. (618.05.a)

#### **Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills**

#### **Objective(s):** By the end of Grade 6, the student will be able to:

6.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments. (619.02.a)

- 6.S.1.6.2 Conduct scientific investigations using a control and variables. Repeat same experiment using alternate variables. (619.02.b)
- 6.S.1.6.3 Select and use appropriate tools and techniques to gather and display data. (619.02.c)
- 6.S.1.6.4 Use evidence to analyze data in order to develop descriptions, explanations, predictions, and models. (619.2.d)
- 6.S.1.6.5 Test a hypothesis based on observations. (619.02.e)
- 6.S.1.6.6 Communicate scientific procedures and explanations. (619.02.g)

# Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

# **Goal 1.8: Understand Technical Communication**

# **Objective(s):** By the end of Grade 6, the student will be able to:

6.S.1.8.1 Read, give, and execute technical instructions. (628.01a)

# **Standard 2: Physical Science**

Students compare and contrast elements, compounds and mixtures. Students explore the effects of force and energy on objects.

# Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

# **Objective(s):** By the end of Grade 6, the student will be able to:

- 6.S.2.1.1 Compare and contrast the differences among elements, compounds and mixtures. (620.01.a)
- 6.S.2.1.2 Define the properties of matter. (620.01.b)
- 6.S.2.1.3 Compare densities of equal volumes of a solid, a liquid, or a gas. (619.01.c)
- 6.S.2.1.4 Describe the effect of temperature on density. (620.01.c)
- 6.S.2.1.5 Explain the nature of physical change and how it relates to physical properties (the distance between molecules as water changes from ice to liquid water, and to water vapor). (620.01.d)

# **Goal 2.2: Understand Concepts of Motion and Forces**

#### **Objective(s):** By the end of Grade 6, the student will be able to:

6.S.2.2.1 Describe the effects of different forces (gravity and friction) on the movement, speed, and direction of an object. (620.03.d)

# Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

# **Goal 2.4: Understand the Structure of Atoms**

No objectives at this grade level.

# **Goal 2.5: Understand Chemical Reactions**

No objectives at this grade level.

# **Standard 3: Biology**

Students understand the building blocks of organisms.

# **Goal 3.1: Understand the Theory of Biological Evolution**

No objectives at this grade level.

# Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

No objectives at this grade level.

# Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

# **Objective(s):** By the end of Grade 6, the student will be able to:

- 6.S.3.3.1 Identify the different structural levels of which an organism is comprised (cells, tissues, organs, organ systems, and organisms). (621.01.a)
- 6.S.3.3.2 Analyze the structural differences between plant and animal cells. (621.01.b)
- 6.S.3.3.3 Describe how traits are passed from parents to offspring. (621.01.c)

#### **Standard 4: Earth and Space Systems**

Students understand and explain the relationship among the systems on Earth, such as solid earth, oceans, atmosphere, and organisms.

# Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

#### **Objective(s):** By the end of Grade 6, the student will be able to:

- 6.S.4.1.1 Explain the interactions among the solid earth, oceans, atmosphere, and organisms. (624.01.a)
- 6.S.4.1.2 Explain the water cycle and its relationship to weather and climate. (624.01.b)
- 6.S.4.1.3 Identify cumulus, cirrus, and stratus clouds and how they relate to weather changes. (624.01.c)

#### Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

# Standard 5: Personal and Social Perspectives; Technology

Students identify issues for environmental studies and understand the difference between renewable and nonrenewable resources.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

# **Objective(s):** By the end of Grade 6, the student will be able to:

6.S.5.1.1 Identify issues for environmental studies. (626.01.a)

# Goal 5.2: Understand the Relationship between Science and Technology

# **Objective(s):** By the end of Grade 6, the student will be able to:

6.S.5.2.1 Describe how science and technology are part of our society. (625.01.a)

6.S.5.2.2 Describe how science and technology are interrelated. (625.01.b)

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

# **Objective(s):** By the end of Grade 6, the student will be able to:

6.S.5.3.1 Explain the difference between renewable and nonrenewable resources. (626.03.a)

# IDAHO CONTENT STANDARDS GRADE 7 SCIENCE

### Students are expected to know content and apply skills from previous grades.

# Standard 1: Nature of Science

Students carry out investigations over time using appropriate tools and equipment. Students make inferences based upon data they collect. Students accurately communicate the results of their investigations and observations. Students support or revise their conclusions by critically analyzing alternate explanations. Students carry out investigations following written lab procedures. Students follow safety protocols in carrying out investigations.

# Goal 1.1: Understand Systems, Order, and Organization

# **Objective(s):** By the end of Grade 7 the student will be able to:

- 7.S.1.1.1 Define small systems as a part of a whole system. (633.01.a)
- 7.S.1.1.2 Determine how small systems contribute to the function of the whole. (633.01.a)
- 7.S.1.1.3 Identify the different structural levels of an organism (cells, tissues, organs, and organ systems). (633.01.b)

# Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

#### **Objective(s):** By the end of Grade 7, the student will be able to:

7.S.1.2.1	Describe how observations and data are evidence on which to base scientific
	explanations and predictions. (633.02.a)
7.S.1.2.2	Use observations to make defendable inferences. (633.02.b)
7.S.1.2.3	Use models to explain or demonstrate a concept. (633.02.c)

# Goal 1.3: Understand Constancy, Change, and Measurement

#### **Objective(s):** By the end of Grade 7, the student will be able to:

- 7.S.1.3.1 Identify concepts of science that have been stable over time. (633.03.a)
- 7.S.1.3.2 Recognize changes that occur within systems. (633.03.b)
- 7.S.1.3.3 Make metric measurements using appropriate tools. (633.03.c)

# Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

Reference to objective 7.S.3.2.1

### **Goal 1.5: Understand Concepts of Form and Function**

No objectives at this grade level.

# Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

# **Objective(s):** By the end of Grade 7, the student will be able to:

- 7.S.1.6.1 Identify controls and variables used in scientific investigations. (634.01.b)
- 7.S.1.6.2 Use appropriate tools and techniques to gather and display data. (634.01c)
- 7.S.1.6.3 Evaluate data in order to form conclusions. (634.01.d)
- 7.S.1.6.4 Use evidence and critical thinking to accept or reject a hypothesis. (634.01.e)
- 7.S.1.6.5 Evaluate alternative explanations or predictions. (634.01.f)
- 7.S.1.6.6 Communicate and defend scientific procedures and explanations. (634.01.g)

# Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

# **Goal 1.8: Understand Technical Communication**

# **Objective(s):** By the end of Grade 7, the student will be able to:

7.S.1.8.1 Read and evaluate technical instructions. (643.02.a)

# **Standard 2: Physical Science**

No goals or objectives at this grade level.

# **Standard 3: Biology**

Students state the levels of cellular organization and list cell parts and their respective functions. Students explain how traits are passed from one generation to another. Students differentiate between plant and animals cells by identifying the characteristic parts of each. Students explain how organisms are adapted to their environment and interact with the biotic and abiotic components of the environment.

# **Goal 3.1: Understand the Theory of Biological Evolution**

# **Objective(s):** By the end of Grade 7, the student will be able to:

7.S.3.1.1 Describe how natural selection explains species change over time. (637.01.a)

# Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

# **Objective(s):** By the end of Grade 7, the student will be able to:

- 7.S.3.2.1 Describe how energy stored in food is primarily derived from the sun through photosynthesis. (638.01.a)
- 7.S.3.2.2 Describe how the availability of resources (matter and energy) limits the distribution and abundance of organisms. (638.01.b)
- 7.S.3.2.3 Illustrate how atoms and molecules cycle among the living and nonliving components of the biosphere. (638.01.c)
- 7.S.3.2.4 Identify how energy flows through ecosystems in one direction, from photosynthetic organisms to herbivores, carnivore, and decomposers. (638.01.d)

# Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

### **Objective(s):** By the end of Grade 7, the student will be able to:

- 7.S.3.3.1 Explain the relationships among specialized cells, tissues, organs, organ systems, and organisms. (636.01.a)
- 7.S.3.3.2 Identify the parts of specialized plant and animal cells. (636.01.b)
- 7.S.3.3.3 Identify the functions of cell structures. (636.01.b)
- 7.S.3.3.4 Describe cell functions that involve chemical reactions. (630.01.c)
- 7.S.3.3.5 Describe how dominant and recessive traits are inherited. (636.01.e)

# **Standard 4: Earth and Space Systems**

No goals or objectives at this grade level.

# Standard 5: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both individuals and society.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

No objectives at this grade level.

# Goal 5.2: Understand the Relationship between Science and Technology

#### **Objective(s):** By the end of Grade 7, the student will be able to:

- 7.S.5.2.1 Explain how science and technology are interrelated. (640.01.a)
- 7.S.5.2.2 Explain how science advances technology. (640.01.b)

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

# **Objective(s):** By the end of Grade 7, the student will be able to:

7.S.5.3.1 Identify alternative sources of energy. (641.03.a)

# IDAHO CONTENT STANDARDS GRADE 8-9 PHYSICAL SCIENCE

#### Students are expected to know content and apply skills from previous grades.

# Standard 1: Nature of Science

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

# **Goal 1.1: Understand Systems, Order, and Organization**

#### **Objective(s):** By the end of Physical Science, the student will be able to:

- 8-9.PS.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)
- 8-9.PS.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)

# Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

#### **Objective(s):** By the end of Physical Science, the student will be able to:

8-9.PS.1.2.1	Use observations and data as evidence on which to base scientific
	explanations. (648.02a)
8-9.PS.1.2.2	Develop models to explain concepts or systems. (648.02b)
8-9 PS 1 2 3	Develop scientific explanations based on knowledge logic and analys

8-9.PS.1.2.3 Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)

# Goal 1.3: Understand Constancy, Change, and Measurement

#### **Objective(s):** By the end of Physical Science, the student will be able to:

- 8-9.PS.1.3.1 Measure changes that can occur in and among systems. (648.03b)
- 8-9.PS.1.3.2 Analyze changes that can occur in and among systems. (648.03b)
- 8-9.PS.1.3.3 Measure and calculate using the metric system. (648.03c)

# Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives in Physical Science.

#### **Goal 1.5: Understand Concepts of Form and Function**

No objectives in Physical Science.

# Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

# **Objective(s):** By the end of Physical Science, the student will be able to:

8-9.PS.1.6.1	Identify questions and concepts that guide scientific investigations. (649.01a)
8-9.PS.1.6.2	Utilize the components of scientific problem solving to design, conduct, and
	communicate results of investigations. (649.01b)
8-9.PS.1.6.3	Use appropriate technology and mathematics to make investigations.
	(649.01c)
8-9.PS.1.6.4	Formulate scientific explanations and models using logic and evidence.
	(649.01d)
8-9.PS.1.6.5	Analyze alternative explanations and models. (649.01e)
8-9.PS.1.6.6	Communicate and defend a scientific argument. (649.01f)
8-9.PS.1.6.7	Explain the differences among observations, hypotheses, and theories.
	(649.01g)

# Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives in Physical Science.

### **Goal 1.8: Understand Technical Communication**

#### **Objective(s):** By the end of Physical Science, the student will be able to:

8-9.PS.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

#### **Standard 2: Physical Science**

Students explain the structure and properties of atoms, including isotopes. Students explain how chemical reactions, while requiring or releasing energy, can neither destroy nor create energy or matter. Students explain the differences between fission and fusion. Students explain the interactions of force and mass in describing motion using Newton's Laws. Students explain how energy can be transformed from one form to another while the total amount of energy remains constant. Students classify energy as potential and/or kinetic, and as energy contained in a field.

# Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

No objectives in Physical Science.

# **Goal 2.2: Understand Concepts of Motion and Forces**

**Objective(s): By the end of Physical Science, the student will be able to:** 8-9.PS.2.2.1 Explain motion using Newton's Laws of Motion. (650.04b)

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# Goal 2.3: Understand the Total Energy in the Universe is Constant

### **Objective**(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.2.3.1 Explain that energy can be transformed but cannot be created nor destroyed. (650.05a)
- 8-9.PS.2.3.2 Classify energy as potential and/or kinetic and as energy contained in a field. (650.05b)

#### **Goal 2.4: Understand the Structure of Atoms**

#### **Objective(s):** By the end of Physical Science, the student will be able to:

- 8-9.PS.2.4.1 Describe the properties, function, and location of protons, neutrons, and electrons. (650.01a)
- 8-9.PS.2.4.2 Explain the processes of fission and fusion. (650.01b)
- 8-9.PS.2.4.3 Describe the characteristics of isotopes. (650.01c)
- 8-9.PS.2.4.4 State the basic electrical properties of matter. (650.01d)
- 8-9.PS.2.4.5 Describe the relationships between magnetism and electricity.

#### **Goal 2.5: Understand Chemical Reactions**

#### **Objective(s):** By the end of Physical Science, the student will be able to:

8-9.PS.2.5.1 Explain how chemical reactions may release or consume energy while the quantity of matter remains constant. (650.03a)

#### **Standard 3: Biology**

No goals or objectives in Physical Science.

#### **Standard 4: Earth and Space Systems**

No goals or objectives in Physical Science.

# **Standard 5**: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both society and the environment.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

No objectives in Physical Science.

#### Goal 5.2: Understand the Relationship between Science and Technology

#### **Objective**(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.5.2.1 Explain how science advances technology. (655.01a)
- 8-9.PS.5.2.2 Explain how technology advances science. (655.01a)

8-9.PS.5.2.3 Explain how science and technology are pursued for different purposes. (656.01b)

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives in Physical Science.

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# IDAHO CONTENT STANDARDS GRADE 8-9 EARTH SCIENCE

#### Students are expected to know content and apply skills from previous grades.

# Standard 1: Nature of Science

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

# **Goal 1.1: Understand Systems, Order, and Organization**

#### **Objective(s):** By the end of Earth Science, the student will be able to:

- 8-9.ES.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)
- 8-9.ES.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)

# Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

#### **Objective(s):** By the end of Earth Science, the student will be able to:

8-9.ES.1.2.1	Use observations and data as evidence on which to base scientific
	explanations. (648.02a)
8-9.ES.1.2.2	Develop models to explain concepts or systems. (648.02b)
9 0 ES 1 2 2	Develop scientific avalanctions based on Imovilades, logic, and analysis

8-9.ES.1.2.3 Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)

### **Goal 1.3: Understand Constancy, Change, and Measurement**

### **Objective(s):** By the end of Earth Science, the student will be able to:

- 8-9.ES.1.3.1 Measure changes that can occur in and among systems. (648.03b)
- 8-9.ES.1.3.2 Analyze changes that can occur in and among systems. (648.03b)
- 8-9.ES.1.3.3 Measure and calculate using the metric system. (648.03c)

# Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives in Earth Science.

#### **Goal 1.5: Understand Concepts of Form and Function**

No objectives in Earth Science.

# Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

# **Objective(s):** By the end of Earth Science, the student will:

8-9.ES.1.6.1	Identify questions and concepts that guide scientific investigations. (649.01a)
8-9.ES.1.6.2	Utilize the components of scientific problem solving to design, conduct, and
	communicate results of investigations. (649.01b)
8-9.ES.1.6.3	Use appropriate technology and mathematics to make investigations.
	(649.01c)
8-9.ES.1.6.4	Formulate scientific explanations and models using logic and evidence.
	(649.01d)
8-9.ES.1.6.5	Analyze alternative explanations and models. (649.01e)
8-9.ES.1.6.6	Communicate and defend a scientific argument. (649.01f)
8-9.ES.1.6.7	Explain the differences among observations, hypotheses, and theories.
	(649.01g)

# Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives in Earth Science.

# **Goal 1.8: Understand Technical Communication**

#### **Objective(s):** By the end of Earth Science, the student will be able to:

8-9.ES.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

#### **Standard 2: Physical Science**

No goals or objectives in Earth Science.

#### **Standard 3: Biology**

No goals or objectives in Earth Science.

#### **Standard 4: Earth and Space Systems**

Students describe the current theory explaining the formation of the solar system. Students explain earth processes, events (erosion, uplifting, earthquakes, volcanic eruptions, etc.), and geological time. Students explain Earth's heat sources.

# Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

#### **Objective(s):** By the end of Earth Science, the student will be able to:

- 8-9.ES.4.1.1 Explain the current scientific theory that suggests that the solar system formed from a nebular cloud of dust and gas. (654.01a)
- 8-9.ES.4.1.2 Identify methods used to estimate geologic time. (654.01b)
- 8-9.ES.4.1.3 Show how interactions among the solid earth, oceans, atmosphere, and organisms have changed the earth system over time. (654.01c)

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# Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

### **Objective(s):** By the end of Earth Science, the student will be able to:

8-9.ES.4.2.1 Explain the internal and external energy sources of the earth (654.02a)

# Standard 5: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both society and the environment. Students describe issues such as water and air quality, hazardous waste, renewable and nonrenewable resources.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

# **Objective**(s): By the end of Earth Science, the student will be able to:

8-9.ES.5.1.1 Analyze environmental issues such as water and air quality, hazardous waste, and depletion of natural resources. (656.01a)

# Goal 5.2: Understand the Relationship between Science and Technology

# **Objective(s):** By the end of Earth Science, the student will be able to:

- 8-9.ES.5.2.1 Explain how science advances technology. (655.01a)
- 8-9.ES.5.2.2 Explain how technology advances science. (655.01a)
- 8-9.ES.5.2.3 Explain how science and technology are pursued for different purposes. (655.01b)

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

#### **Objective(s):** By the end of Earth Science, the student will be able to:

8-9.ES.5.3.1 Describe the difference between renewable and nonrenewable resources. (656.03a)

# IDAHO CONTENT STANDARDS GRADE 9-10 BIOLOGY

#### Students are expected to know content and apply skills from previous grades.

# Standard 1: Nature of Science

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

# **Goal 1.1: Understand Systems, Order, and Organization**

#### **Objective(s):** By the end of Biology, the student will be able to:

- 9-10.B.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)
- 9-10.B.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)

# Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

#### **Objective(s):** By the end of Biology, the student will be able to:

9-10.B.1.2.1	Use observations and data as evidence on which to base scientific
	explanations. (648.02a)
9-10.B.1.2.2	Develop models to explain concepts or systems. (648.02b)
9-10.B.1.2.3	Develop scientific explanations based on knowledge, logic and analysis.

# Goal 1.3: Understand Constancy, Change, and Measurement

(648.02c)

#### **Objective**(s): By the end of Biology, the student will be able to:

- 9-10.B.1.3.1 Measure changes that can occur in and among systems. (648.03b)
- 9-10.B.1.3.2 Analyze changes that can occur in and among systems. (648.03b)
- 9-10.B.1.3.3 Measure and calculate using the metric system. (648.03c)

# Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

Reference to 7.S.3.2.1

#### **Goal 1.5: Understand Concepts of Form and Function**

No objectives in Biology.

# Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

# **Objective(s):** By the end of Biology, the student will be able to:

9-10.B.1.6.1	Identify questions and concepts that guide scientific investigations. (649.01a)
9-10.B.1.6.2	Utilize the components of scientific problem solving to design, conduct, and
	communicate results of investigations. (649.01b)
9-10.B.1.6.3	Use appropriate technology and mathematics to make investigations.
	(649.01c)
9-10.B.1.6.4	Formulate scientific explanations and models using logic and evidence.
	(649.01d)
9-10.B.1.6.5	Analyze alternative explanations and models. (649.01e)
9-10.B.1.6.6	Communicate and defend a scientific argument. (649.01f)
9-10.B.1.6.7	Explain the differences among observations, hypotheses, and theories.
	(649.01g)

# Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives in Biology.

# **Goal 1.8: Understand Technical Communication**

#### **Objective(s):** By the end of Biology, the student will be able to:

9-10.B.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

#### **Standard 2: Physical Science**

No goals or objectives in Biology.

### **Standard 3: Biology**

Students explain the importance of cells as they relate to the organization and structure of complex organisms, differentiation and specialization during development, and the chemical reactions necessary to sustain life. Students describe the functions of cell structures. Students use the theory of evolution to explain diversity of life.

#### **Goal 3.1: Understand the Theory of Biological Evolution**

#### **Objective(s):** By the end of Biology, the student will be able to:

- 9-10.B.3.1.1 Use the theory of evolution to explain how species change over time. (652.01a)
- 9-10.B.3.1.2 Explain how evolution is the consequence of interactions among the potential of a species to increase its numbers, genetic variability, a finite supply of resources, and the selection by the environment of those offspring better able to survive and reproduce. (652.01a)

# Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

#### **Objective(s):** By the end of Biology, the student will be able to:

9-10.B.3.2.1 Explain how matter tends toward more disorganized states (entropy). (653.01a)
9-10.B.3.2.2 Explain how organisms use the continuous input of energy and matter to maintain their chemical and physical organization. (653.01b)
9-10.B.3.2.3 Show how the energy for life is primarily derived from the sun through photosynthesis. (653.01c)
9-10.B.3.2.4 Describe cellular respiration and the synthesis of macromolecules. (653.01d)
9-10.B.3.2.5 Show how matter cycles and energy flows through the different levels of organization of living systems (cells, organs, organisms, communities) and

# Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

#### **Objective(s):** By the end of Biology, the student will be able to:

their environment. (653.01h)

9-10.B.3.3.1	Identify the particular structures that underlie the cellular functions.
	(651.01a)
9-10.B.3.3.2	Explain cell functions involving chemical reactions. (651.01b)
9-10.B.3.3.3	Explain how cells use DNA to store and use information for cell functions
	(651.01c)
9-10.B.3.3.4	Explain how selective expression of genes can produce specialized cells
	from a single cell. (651.01e)

#### **Standard 4: Earth and Space Systems**

No goals or objectives in Biology.

#### Standard 5: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both society and the environment. Students describe issues such as water and air quality, hazardous waste, renewable and nonrenewable resources.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

### **Objective(s):** By the end of Biology, the student will be able to:

9-10.B.5.1.1 Analyze environmental issues such as water and air quality, hazardous waste, forest health, and agricultural production. (656.01a)

#### Goal 5.2: Understand the Relationship between Science and Technology

# **Objective(s):** By the end of Biology, the student will be able to:

9-10.B.5.2.1 Explain how science advances technology. (655.01a)9-10.B.5.2.2 Explain how technology advances science. (655.01a)

9-10.B.5.2.3 Explain how science and technology are pursued for different purposes. (656.01b)

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

#### **Objective(s):** By the end of Biology, the student will be able to:

9-10.B.5.3.1 Describe the difference between renewable and nonrenewable resources. (656.03a)

# IDAHO CONTENT STANDARDS GRADE 11-12 CHEMISTRY

#### Students are expected to know content and apply skills from previous grades.

### Standard 1: Nature of Science

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

#### Goal 1.1: Understand Systems, Order, and Organization

#### **Objective(s):** By the end of Chemistry, the student will be able to:

11-12.C.1.1.1 Use the periodic table to predict physical and chemical properties.

# Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

#### **Objective(s):** By the end of Chemistry, the student will be able to:

- 11-12.C.1.2.1 Describe the historical development of the periodic table.
- 11-12.C.1.2.2 Create and interpret graphs of data.
- 11-12.C.1.2.3 Explain and interpret the key concepts of the kinetic molecular theory.
- 11-12.C.1.2.4 Distinguish the common theories defining acids and bases.

### **Goal 1.3: Understand Constancy, Change, and Measurement**

#### **Objective(s):** By the end of Chemistry, the student will be able to:

- 11-12.C.1.3.1 Identify, compare and contrast physical and chemical properties and changes and appropriate computations.
- 11-12.C.1.3.2 Perform computations using scientific notation, the metric system and dimensional analysis.
- 11-12.C.1.3.3 Compute measurement uncertainty to include precision, accuracy and the rules for significant digits.

11-12.C.1.3.4	Perform calculations related to the conversion of grams to moles to particles,
	atoms, molecules and volume.
11-12.C.1.3.5	Analyze and solve reaction stoichiometry problems.

- 11-12.C.1.3.6 Express concentrations of solutions in various ways including molarity.
- 11-12.C.1.3.7 Interpret how the presence of solute particles affect the properties of a solution and be able to do calculations involving colligative properties.
- 11-12.C.1.3.8 Analyze quantitative relationships involved in acid/base chemistry including pH.

# Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives in Chemistry.

# **Goal 1.5: Understand Concepts of Form and Function**

No objectives in Chemistry.

# **Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills**

# **Objective(s):** By the end of Chemistry, the student will be able to:

11-12.C.1.6.1 Demonstrate an understanding of the scientific method.

11-12.C.1.6.2 Select and use appropriate scientific equipment, materials and techniques.

# Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

#### **Objective(s):** By the end of Chemistry, the student will be able to:

11-12.C.1.7.1 Explain how a series of historically related and documented experiments led to the current model and structure of the atom.

# **Goal 1.8: Understand Technical Communication**

# **Objective(s):** By the end of Chemistry, the student will be able to:

11-12.C.1.8.1 Correctly write symbols, formulas and names for common elements, ions and compounds.

11-12.C.1.8.2 Communicate scientific investigations and information clearly.

#### **Standard 2: Physical Science**

Students explain the structure and properties of atoms, including isotopes. Students explain how chemical reactions, while requiring or releasing energy, can neither destroy nor create energy or matter. Students explain the differences between fission and fusion. Students explain the interactions of force and mass in describing motion using Newton's Laws. Students explain how energy can be transformed from one form to another while the total amount of energy remains constant. Students classify energy as potential and/or kinetic, and as energy contained in a field.

# Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

# **Objective(s):** By the end of Chemistry, the student will be able to:

- 11-12.C.2.1.1 Explain and understand how electrons are involved in the formation of chemical bonds using the octet rule and Lewis dot diagrams.
- 11-12.C.2.1.2 Predict the polarity of chemical bonds using electronegativity.
- 11-12.C.2.1.3 Predict physical properties of compounds based upon the attractive forces between atoms and molecules.
- 11-12.C.2.1.4 Distinguish and classify all matter into appropriate categories.
- 11-12.C.2.1.5 Explain the relationship and reactions of acids, bases, and salts.
- 11-12.C.2.1.6 Explain the role of dissociation and ionization in producing strong, weak, and nonelectrolytes.

# **Goal 2.2: Understand Concepts of Motion and Forces**

# **Objective(s):** By the end of Chemistry, the student will be able to:

11-12.C.2.2.1 Describe the Kinetic Molecular Theory as it applies to phases of matter.

# Goal 2.3: Understand the Total Energy in the Universe is Constant

# **Objective(s):** By the end of Chemistry, the student will be able to:

- 11-12.C.2.3.1 Explain and calculate the changes in heat energy that occur during chemical reactions and phase changes.
- 11-12.C.2.3.2 Demonstrate the conservation of matter by balancing chemical equations.
- 11-12.C.2.3.3 Differentiate between exothermic and endothermic chemical reactions during chemical or physical changes.

# **Goal 2.4: Understand the Structure of Atoms**

# **Objective**(s): By the end of Chemistry, the student will be able to:

- 11-12.C.2.4.1 Interpret the classic historical experiments that were used to identify the components of an atom and its structure.
- 11-12.C.2.4.2 Deduce the number of protons, neutrons and electrons for an atom or ion.
- 11-12.C.2.4.3 Describe the relationship between the structure of atoms and light absorption and emission.
- 11-12.C.2.4.4 Determine and illustrate electron arrangements of elements using electron configurations and orbital energy diagrams.

### **Goal 2.5: Understand Chemical Reactions**

#### **Objective(s):** By the end of Chemistry, the student will be able to:

- 11-12.C.2.5.1 Illustrate the Law of Conservation of Mass and the Law of Definite Proportions.
- 11-12.C.2.5.2 Classify, write and balance chemical equations for common types of chemical reactions and predict the products.
- 11-12.C.2.5.3 Describe the factors that influence the rates of chemical reactions.

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# **Standard 3: Biology**

No goals or objectives in Chemistry.

# **<u>Standard 4</u>: Earth and Space Systems**

No goals or objectives in Chemistry.

# Standard 5: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both society and the environment.

# Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

#### **Objective(s): By the end of Chemistry, the student will be able to:** 11-12.C.5.1.1 Demonstrate the ability to work safely and effectively in a chemistry

11-12.C.5.1.1 Demonstrate the ability to work safely and effectively in a chemistry laboratory.

# Goal 5.2: Understand the Relationship between Science and Technology

# **Objective(s):** By the end of Chemistry, the student will be able to:

11-12.C.5.2.1 Assess the role of chemistry in enabling technological advances.

# Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

# **Objective**(s): By the end of Chemistry, the student will be able to:

11-12.C.5.3.1 Evaluate the role of chemistry in energy and environmental issues.

# SUBJECT

Proposed Rule – IDAPA 08.02.03.004, Rules Governing Thoroughness, Incorporated by Reference – Information and Communication Technology (ICT) Standards

# APPLICABLE STATUTE, RULE, OR POLICY

IDAPA 08.02.03.004, Rules of the Board Governing Thoroughness Section 33-1612, Idaho Code

# **BACKGROUND/DISCUSSION**

The Idaho Student Information Technology Standards (ISITS) were originally created in 2001, and revised in 2003. Due to the seven year gap in revisions, significant changes occurred between the original and revised standards, including changing the name to Information and Communication Technology Standards. A copy of the original ISITS is included.

The ISITS were not part of the Idaho Achievement or Idaho Content Standards; however, this rule would incorporate them into the Idaho Content Standards, complying with the 'Enhancing Education Through Technology Act of 2001.'

The revision committee chose to base the revisions upon the International Society for Technology in Education (ISTE) National Educational Technology Standards (NETS•S), which can be found online at:

http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/ NETS for Students 2007 Standards.pdf. Title has been updated to reflect today's world. Revision includes grades 9-12.

# ATTACHMENTS

Attachment 1 – Proposed change of IDAPA 08.02.03.004Page 3Attachment 2 – 2001 Idaho Student Information Technology StandardsPage 5Attachment 3 – Proposed ICT StandardsPage 35

# STAFF COMMENTS AND RECOMMENDATIONS

# **BOARD ACTION**

A motion to approve the Idaho Content Standards for Information and Communication Technology as submitted.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No \_\_\_\_

A motion to approve the proposed rule change to IDAPA 08.02.03.004, Rules Governing Thoroughness to incorporate by reference the Idaho Content Standards for Information and Communication Technology.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_ No \_\_\_\_

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004. INCORPORATION BY REFERENCE.
The following documents are incorporated into this rule:

(3-30-07)

01. The Idaho Content Standards. The Idaho Content Standards as adopted by the State Board of Education. Individual subject content standards are adopted in various years in relation to the curricular materials adoption schedule. Copies of this document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (SD 2010)(\_\_\_\_)

a.	Driver Education, as revised and adopted on August 21, 2008.	(SD 2010)
b.	Health, as revised and adopted on April 17, 2009.	(SD 2010)
с.	Humanities Categories:	(SD 2010)
i.	Art, as revised and adopted on April 17, 2009;	(SD 2010)
ii.	Dance, as revised and adopted on April 17, 2009;	(SD 2010)
iii.	Drama, as revised and adopted on April 17, 2009;	(SD 2010)
iv.	Interdisciplinary, as revised and adopted on April 17, 2009;	(SD 2010)
v.	Music, as revised and adopted on April 17, 2009;	(SD 2010)
vi.	World languages, as revised and adopted on April 17, 2009.	(SD 2010)
d.	English Language Arts, Part I: reading, as revised and adopted on August 21, 2008	<u>April 22,</u>
	<u>2010</u> . (S	<del>SD 2010)(</del>
<del>e.</del>	Language Arts, Part II: language arts, as revised and adopted on August 21, 2008.	(SD 2010)
<u>fe</u> .	Limited English Proficiency, as revised and adopted on August 21, 2008.	(SD 2010)
<u>gf</u> .	Mathematics, as revised and adopted on August 21, 2008 April 22, 2010.	<del>SD 2010)(</del>
<u>hg</u> .	Physical Education, as revised and adopted on April 17, 2009.	(SD 2010)
<u>ih</u> .	Science, as revised and adopted on April 17, 2009.	(SD 2010)
<u>ji</u> .	Social Studies, as revised and adopted on April 17, 2009.	(SD 2010)
j.	Information and Communication Technology, as revised and adopted on April 22,	<u>2010 ( )</u>

**02.** The Idaho English Language Development Standards. The Idaho English Language Development Standards as adopted by the State Board of Education on August 10, 2006. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

03. The Limited English Proficiency Program Annual Measurable Achievement Objectives (AMAOs) and Accountability Procedures. The Limited English Proficiency Program Annual Measurable Achievement Objectives and Accountability Procedures as adopted by the State Board of Education on August 10, 2006. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

04. The Idaho English Language Assessment (IELA) Achievement Standards. The Idaho English Language Assessment (IELA) Achievement Standards as adopted by the State Board of Education on August 10, 2006. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

**05.** The Idaho Standards Achievement Tests (ISAT) Achievement Standards. Achievement Standards as adopted by the State Board of Education on May 30, 2007. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

06. The Idaho Extended Content Standards. The Idaho Extended Content Standards as adopted by

the State Board of Education on April 17, 2008. Copies of the document can be found at the State Board of Education website at http://www.boardofed.idaho.gov. (SD 0802)

07. The Idaho Alternative Assessment Extended Achievement Standards. Alternative Assessment Extended Achievement Standards as adopted by the State Board of Education on February 28, 2008. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (SD 0802)

**08.** The Idaho Standards for Infants, Toddlers, Children, and Youth Who Are Deaf or Hard of Hearing. As adopted by the State Board of Education on October 11, 2007. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

**09.** The Idaho Standards for Infants, Toddlers, Children, and Youth Who Are Blind or Visually Impaired. As adopted by the State Board of Education on October 11, 2007. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

8<sup>th</sup> Grade Idaho Student Information Technology Standards (ISITS) Kindergarten – 7<sup>th</sup> Grade Idaho Information Technology Benchmarks



Department of Education asked a statewide team to develop a draft copy of student information technology standards for eighth-grade students. The team consisted of the following:

Jean Bengfort, Coeur d'Alene School District Johana Doyle, Moscow School District Greg Eck, Lakeland School District Bonnie Farmin, Kellogg School District Jim Marconi, Boise School District Pam Reidlen, Kamiah School District Sue Smith, Soda Springs School District Karen Vauk, Micron Technology

The eighth grade was chosen because it is considered to be the culmination of the elementary/middle grades and sets the standard for a student entering his or her high school career. Therefore, the following standards are what we expect an eighth grader to know and be able to do in the area of technology.

#### 8<sup>th</sup> Grade Idaho Student Information Technology Standards (ISITS) Kindergarten – 7<sup>th</sup> Grade Idaho Information Technology Benchmarks

#### Technology Foundation Standards for all students

The Technology foundation standards for students are divided into six broad categories that were developed through the National Educational Technology Standards (NETS) project coordinated by the International Society for Technology in Education (ISTE). Standards within each category are to be introduced, reinforced, and mastered by students. These categories provide a framework for linking sample applications. These standards and benchmarks are used as guidelines for planning technology-based activities in which students achieve success in learning, communication, and life skills.

#### 1. Basic Operations and Concepts

- a. Students demonstrate a sound understanding of the nature and operation of technology systems.
- b. Students are proficient in the use of technology.

#### 2. Social, Ethical, and Human Issues

- a. Students understand the ethical, cultural, and societal issues related to technology.
- b. Students practice responsible use of technology systems, information, and software.
- c. Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

#### 3. Technology Productivity Tools

- a. Students use technology tools to enhance learning , increase productivity, and promote creativity.
- Students use productivity tools to collaborate in constructing technologyenhanced models, preparing publications, and producing other creative works.

#### 4. Technology Communications Tools

- a. Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
- b. Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

#### 5. Technology Research Tools

- a. Students use technology to locate, evaluate, and collect information from a variety of sources.
- b. Students use technology tools to process data and report results.
- Students evaluate and select new information resources and technological innovations based on the appropriateness to specific tasks.

#### 6. Technology Problem-Solving and Decision-Making Tools

- a. Students use technology resources for solving problems and making informed decisions.
- b. Students employ technology in the development of strategies for solving problems in the real world.

#### 8<sup>th</sup> Grade Idaho Student Information Technology Standards (ISITS) Kindergarten – 7<sup>th</sup> Grade Idaho Information Technology Benchmarks

#### Idaho Student Information Technology Standards Rationale

Students will live, learn and work in an increasingly complex, technology-driven society. These technology standards are designed to identify foundational skills and processes that students need in order to be productive and successful.

It is essential that computer and technology education be integrated in all grade level content standards. All educators share responsibility for student success.

The eighth grade was chosen because it is considered to be the culmination of the elementary/middle grades and sets the standard for a student entering his or her high school career. Therefore, the following standards are what we expect an eighth grader to know and be able to do in the area of technology.

### 8<sup>th</sup> Grade Idaho Student Information Technology Standards

#### STANDARD 1: Basic Operations and Concepts

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate a sound understanding of the basic nature and operation of technology systems.	<ul> <li>Use developmentally appropriate and accurate technology terminology.</li> </ul>
	<ul> <li>Identify the appropriate technology device to complete a task.</li> </ul>
	<ul> <li>Make informed choices among technology systems, resources and services.</li> </ul>
2. Demonstrate proficiency in the use of technology.	<ul> <li>Demonstrate increasingly sophisticated operation of technology components.</li> </ul>
	<ul> <li>Apply strategies for identifying and solving routine software and hardware problems that occur in everyday use.</li> </ul>

	Standard The student will:	Content Knowledge and Skills:
1. De un	1. Demonstrate an understanding of the	<ul> <li>Demonstrate knowledge of current changes in technologies and the effect those changes have on the workplace and society.</li> </ul>
societal issues related to technology.	<ul> <li>Demonstrate knowledge of legal and ethical issues when using technology, information sources, and consequences of misuse.</li> </ul>	
2. Pr	2. Practice responsible use	<ul> <li>Practice responsible use of technological devices and software.</li> </ul>
of technology systems, information, and software.	technology systems, formation, and software.	b. Demonstrate respect for others while using technology.
	<ul> <li>Exhibit legal and ethical behaviors when using technology and information.</li> </ul>	

### 8th Grade Idaho Student Information Technology Standards

#### STANDARD 3: Technology Productivity Tools

Standard The student will:	Content Knowledge and Skills:
	<ul> <li>Use formatting capabilities of technology for communicating and illustrating.</li> </ul>
1. Use technology tools to enhance learning,	<ul> <li>b. Use a variety of technology tools for data collection and analysis.</li> </ul>
promote creativity.	<ul> <li>Publish and present information using technology tools.</li> </ul>
	<ul> <li>d. Use technology tools to support analysis and modeling.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
1. Use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.	a. Use telecommunications efficiently and effectively to access remote information and communicate with others in support of facilitated and independent learning.
	b. Use technology tools for individual and collaborative writing, communication and publishing activities to create curricular related products for audiences inside and outside the classroom.
	<ul> <li>Collaboratively use telecommunications and online resources.</li> </ul>

#### 8<sup>th</sup> Grade Idaho Student Information Technology Standards

#### **STANDARD 5**: **Technology Research Tools**

Standard The student will:	Content Knowledge and Skills:
1. Use technology to	a. Locate information from electronic resources.
collect information from a variety of sources.	<ul> <li>Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources.</li> </ul>
2. Use technology tools to process data and report results.	<ul> <li>Select appropriate technology tools for data analysis and reporting.</li> </ul>

#### **STANDARD 6:**

Standard The student will:	Content Knowledge and Skills:
1. Use technology resources for solving problems and making informed decisions.	<ul> <li>Determine when technology is useful, select and use the appropriate tools, and technology resources to solve the problem, and report findings.</li> </ul>

### 7<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 1: Basic Operations and Concepts

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate a sound understanding of the basic nature and operation of technology systems.	<ul> <li>Use developmentally appropriate and accurate technology terminology.</li> </ul>
	<ul> <li>Identify the appropriate technology device to complete a task.</li> </ul>
	<ul> <li>c. Identify choices among technology systems, resources and services.</li> </ul>
2. Demonstrate proficiency in the use of technology.	<ul> <li>Demonstrate increasingly sophisticated operation of technology components.</li> </ul>
	<ul> <li>Apply strategies for identifying and solving routine software and hardware problems that occur in everyday use.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
<ol> <li>Demonstrate an understanding of the ethical, cultural, and societal issues related to technology.</li> </ol>	<ul> <li>Demonstrate knowledge of current changes in technologies and the effect those changes have on the workplace and society.</li> </ul>
	<ul> <li>Demonstrate knowledge of legal and ethical issues when using technology, information sources, and consequences of misuse.</li> </ul>
2. Practice responsible	<ul> <li>Practice responsible use of technological devices and software.</li> </ul>
use of technology systems, information,	<ul> <li>Demonstrate respect for others while using technology.</li> </ul>
and software.	<ul> <li>Exhibit legal and ethical behaviors when using technology and information.</li> </ul>

## 7<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 3: Technology Productivity Tools

Standard The student will:	Content Knowledge and Skills:
1 Use technology tools	<ul> <li>Use formatting capabilities of technology for communicating and illustrating.</li> </ul>
to enhance learning, increase productivity,	<ul> <li>b. Use a variety of technology tools for data collection and analysis.</li> </ul>
and promote creativity.	<ul> <li>Publish and present information using technology tools.</li> </ul>
	<ul> <li>Use technology tools to support analysis and modeling.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
1. Use telecommunications	<ul> <li>Use telecommunications efficiently and effectively to access remote information and communicate with others in support of facilitated and independent learning.</li> </ul>
to collaborate, publish, and interact with peers, experts, and other audiences.	<ul> <li>b. Use technology tools for individual and collaborative writing, communication and publishing activities to create curricular related products for audiences inside and outside the classroom.</li> </ul>
	<ul> <li>Collaboratively use telecommunications and online resources.</li> </ul>

#### 7<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### **STANDARD 5**: **Technology Research Tools**

Standard The student will:	Content Knowledge and Skills:
1. Use technology to locate, evaluate, and collect information from a variety of sources.	a. Locate information from electronic resources.
	<ul> <li>Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources</li> </ul>
2. Use technology tools to process data and report results.	<ul> <li>Select appropriate technology tools for data analysis and reporting.</li> </ul>

#### STANDARD 6:

Standard The student will:	Content Knowledge and Skills:
1. Use technology	<ul> <li>Determine when technology is useful, select and</li></ul>
resources for solving	use the appropriate tools, and technology
problems and making	resources to solve the problem, and report
informed decisions.	findings.

### 6th Grade Idaho Student Information Technology Benchmarks

#### STANDARD 1: Basic Operations and Concepts

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate a sound understanding of the basic nature and	<ul> <li>Use developmentally appropriate and accurate technology terminology.</li> </ul>
	<ul> <li>Identify the appropriate technology device to complete a task.</li> </ul>
technology systems.	<ul> <li>c. Explore choices among technology systems, resources and services.</li> </ul>
2. Demonstrate proficiency in the use of technology.	<ul> <li>Demonstrate increasingly sophisticated operation of technology components.</li> </ul>
	<ul> <li>Apply strategies for identifying and solving routine software and hardware problems that occur in everyday use.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
<ol> <li>Demonstrate an understanding of the ethical, cultural, and societal issues related to technology.</li> </ol>	<ul> <li>Demonstrate knowledge of current changes in technologies and the effect those changes have on the workplace and society.</li> </ul>
	<ul> <li>Demonstrate knowledge of legal and ethical issues when using technology, information sources, and consequences of misuse.</li> </ul>
2. Practice responsible use of technology systems, information, and software.	<ul> <li>Practice responsible use of technological devices and software.</li> </ul>
	<ul> <li>Demonstrate respect for others while using technology.</li> </ul>
	<ul> <li>Exhibit legal and ethical behaviors when using technology and information.</li> </ul>

### 6<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 3: Technology Productivity Tools

Standard The student will:	Content Knowledge and Skills:
1. Use technology tools to enhance learning, increase productivity, and promote creativity.	<ul> <li>Use formatting capabilities of technology for communicating and illustrating.</li> </ul>
	<ul> <li>b. Use a variety of technology tools for data collection and analysis.</li> </ul>
	<ul> <li>Publish and present information using technology tools.</li> </ul>
	<ul> <li>Use technology tools to support analysis and modeling.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
1. Use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.	<ul> <li>Use telecommunications efficiently and effectively to access remote information and communicate with others in support of facilitated and independent learning.</li> </ul>
	<ul> <li>b. Use technology tools for individual and collaborative writing, communication and publishing activities to create curricular related products for audiences inside and outside the classroom.</li> </ul>
	<ul> <li>Collaboratively use telecommunications and online resources.</li> </ul>

#### 6<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 5: Technology Research Tools

Standard The student will:	Content Knowledge and Skills:
1. Use technology to locate, evaluate, and collect information from a variety of sources.	a. Locate information from electronic resources.
	<ul> <li>Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources</li> </ul>
2. Use technology tools to process data and report results.	<ul> <li>Select appropriate technology tools for data analysis and reporting.</li> </ul>

#### STANDARD 6:

#### Technology Problem-Solving and Decision Making Tools

Problem solving is inherent in all disciplines. Technology Standard 6 is designed to provide a cumulative (capstone) experience.

Standard The student will:	Content Knowledge and Skills:
1. Use technology	<ul> <li>Determine when technology is useful, select and</li></ul>
resources for solving	use the appropriate tools, and technology
problems and making	resources to solve the problem, and report
informed decisions.	findings.

#### 5<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 1: Basic Operations and Concepts

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate a sound understanding of the basic nature and operation of	<ul> <li>Use developmentally appropriate and accurate technology terminology.</li> </ul>
	<ul> <li>Identify the appropriate technology device to complete a task.</li> </ul>
technology systems.	c. N/A
2. Demonstrate proficiency in the use of technology.	<ul> <li>Demonstrate increasingly sophisticated operation of technology components.</li> </ul>
	<ul> <li>Acquire and apply strategies for identifying and solving routine software and hardware problems that occur in everyday use.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate an understanding of the ethical, cultural, and societal issues related to technology.	<ul> <li>Discuss common uses of technology in daily life and related advantages and disadvantages.</li> </ul>
	<ul> <li>Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use.</li> </ul>
2. Practice responsible use of technology systems, information, and software.	<ul> <li>Practice responsible use of technological devices and software.</li> </ul>
	<ul> <li>Demonstrate respect for others while using technology.</li> </ul>
	<ul> <li>Exhibit legal and ethical behaviors when using technology and information.</li> </ul>

## 5<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 3: Technology Productivity Tools

Standard The student will:	Content Knowledge and Skills:
1. Use technology tools to enhance learning, increase productivity, and promote creativity.	<ul> <li>Use formatting capabilities of technology for communicating and illustrating.</li> </ul>
	<ul> <li>b. Use a variety of technology tools for data collection and analysis.</li> </ul>
	<ul> <li>Publish and present information using technology tools.</li> </ul>
	<ul> <li>Use technology tools to support analysis and modeling.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
1. Use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.	<ul> <li>Use telecommunications efficiently and effectively to access remote information and communicate with others in support of facilitated and independent learning.</li> </ul>
	<ul> <li>b. Use technology tools for individual and collaborative writing, communication and publishing activities to create curricular related products for audiences inside and outside the classroom.</li> </ul>
	<ul> <li>Collaboratively use telecommunications and online resources.</li> </ul>

#### 5<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### **STANDARD 5**: **Technology Research Tools**

Standard The student will:	Content Knowledge and Skills:
1. Use technology to locate, evaluate, and collect information from a variety of sources.	a. Locate information from electronic resources.
	<ul> <li>Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources</li> </ul>
2. Use technology tools to process data and report results.	a. N/A

#### STANDARD 6:

Standard The student will:	Content Knowledge and Skills:
1. Use technology resources for solving problems and making informed decisions.	a. N/A

#### 4<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 1: Basic Operations and Concepts

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate a sound understanding of the basic nature and operation of	<ul> <li>Use developmentally appropriate and accurate technology terminology.</li> </ul>
	<ul> <li>Explore the appropriate technology device to complete a task.</li> </ul>
technology systems.	c. N/A
2. Demonstrate proficiency in the use of technology.	<ul> <li>Demonstrate increasingly sophisticated operation of technology components.</li> </ul>
	<ul> <li>Acquire and apply strategies for identifying and solving routine software and hardware problems that occur in everyday use.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
<ol> <li>Demonstrate an understanding of the ethical, cultural, and societal issues related to technology.</li> </ol>	<ul> <li>Discuss common uses of technology in daily life and related advantages and disadvantages.</li> </ul>
	<ul> <li>Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use.</li> </ul>
2. Practice responsible use of technology systems, information, and software.	<ul> <li>Practice responsible use of technological devices and software.</li> </ul>
	<ul> <li>Demonstrate respect for others while using technology.</li> </ul>
	<ul> <li>Exhibit legal and ethical behaviors when using technology and information.</li> </ul>

### 4<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 3: Technology Productivity Tools

Standard The student will:	Content Knowledge and Skills:
1. Use technology tools to enhance learning, increase productivity, and promote creativity.	<ul> <li>Use formatting capabilities of technology for communicating and illustrating.</li> </ul>
	<ul> <li>b. Use a variety of technology tools for data collection and analysis.</li> </ul>
	<ul> <li>Publish and present information using technology tools.</li> </ul>
	<ul> <li>Use technology tools to support analysis and modeling.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
1. Use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.	<ul> <li>Use telecommunications efficiently and effectively to access remote information and communicate with others in support of facilitated and independent learning.</li> </ul>
	<ul> <li>b. Use technology tools for individual and collaborative writing, communication and publishing activities to create curricular related products for audiences inside and outside the classroom.</li> </ul>
	<ul> <li>Collaboratively use telecommunications and online resources.</li> </ul>

#### 4<sup>th</sup> Grade Idaho Student Information Technology Benchmarks

#### **STANDARD 5**: **Technology Research Tools**

Standard The student will:	Content Knowledge and Skills:
1. Use technology to locate, evaluate, and collect information from a variety of sources.	a. Locate information from electronic resources.
	<ul> <li>Evaluate the accuracy, relevance, appropriateness, comprehensiveness and bias of electronic information sources</li> </ul>
2. Use technology tools to process data and report results.	a. N/A

#### STANDARD 6:

Standard The student will:	Content Knowledge and Skills:
1. Use technology resources for solving problems and making informed decisions.	a. N/A

#### 3<sup>rd</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 1: Basic Operations and Concepts

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate a sound understanding of the basic nature and operation of	<ul> <li>Use developmentally appropriate and accurate technology terminology.</li> </ul>
	<ul> <li>Explore the appropriate technology device to complete a task.</li> </ul>
technology systems.	c. N/A
2. Demonstrate proficiency in the use of technology.	a. Demonstrate functional operation of technology components.
	<ul> <li>Acquire and apply strategies for identifying and solving routine software and hardware problems that occur in everyday use.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
<ol> <li>Demonstrate an understanding of the ethical, cultural, and societal issues related to technology.</li> </ol>	<ul> <li>Discuss common uses of technology in daily life and related advantages and disadvantages.</li> </ul>
	<ul> <li>Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use.</li> </ul>
2. Practice responsible use of technology systems, information, and software.	<ul> <li>Practice responsible use of technological devices and software.</li> </ul>
	<ul> <li>Demonstrate respect for others while using technology.</li> </ul>
	<ul> <li>Discuss legal and ethical behaviors when using technology and information.</li> </ul>

#### 3<sup>rd</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 3: Technology Productivity Tools

Standard The student will:	Content Knowledge and Skills:
1. Use technology tools to enhance learning, increase productivity, and promote creativity.	<ul> <li>Use prescribed technology writing or drawing tools for communicating and illustrating.</li> </ul>
	<ul> <li>b. Use prescribed technology tools for data collection and analysis.</li> </ul>
	<ul> <li>Explore prescribed technology for publishing and presenting information.</li> </ul>
	d. N/A

Standard The student will:	Content Knowledge and Skills:
1. Use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.	<ul> <li>Use telecommunications efficiently and effectively to access remote information and communicate with others in support of facilitated and independent learning.</li> </ul>
	<ul> <li>b. Use technology tools for individual and collaborative writing, communication and publishing activities to create curricular related products for audiences inside and outside the classroom.</li> </ul>
	c. N/A

#### 3<sup>rd</sup> Grade Idaho Student Information Technology Benchmarks

#### **STANDARD 5**: **Technology Research Tools**

Standard The student will:	Content Knowledge and Skills:
1. Use technology to locate, evaluate, and collect information from a variety of sources.	a. Explore electronic information sources.
	<ul> <li>Evaluate the accuracy and relevance of electronic information sources.</li> </ul>
2. Use technology tools to process data and report results.	a. N/A

#### STANDARD 6:

Standard The student will:	Content Knowledge and Skills:
1. Use technology resources for solving problems and making informed decisions.	a. N/A

#### 2<sup>nd</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 1: Basic Operations and Concepts

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate a sound understanding of the	<ul> <li>Use developmentally appropriate and accurate technology terminology.</li> </ul>
basic nature and	b. N/A
technology systems.	c. N/A
2. Demonstrate proficiency in the use of technology.	a. Demonstrate functional operation of technology components.
	<ul> <li>Explore and acquire and apply strategies for identifying and solving routine software and hardware problems that occur in everyday use.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate an understanding of the	a. N/A
societal issues related to technology.	<ul> <li>Demonstrate an awareness and respect for the ethical use of technology.</li> </ul>
2. Practice responsible use of technology systems, information,	<ul> <li>Practice responsible use of technological devices and software.</li> </ul>
	<ul> <li>Demonstrate respect for others while using technology.</li> </ul>
and software.	c. N/A

### 2<sup>nd</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 3: Technology Productivity Tools

Standard The student will:	Content Knowledge and Skills:
1. Use technology tools to enhance learning, increase productivity, and promote creativity.	<ul> <li>Use prescribed technology writing or drawing tools for communicating and illustrating.</li> </ul>
	<ul> <li>b. Use prescribed technology tools for data collection and analysis.</li> </ul>
	<ul> <li>Explore prescribed technology for publishing and presenting information.</li> </ul>
	d. N/A

Standard The student will:	Content Knowledge and Skills:
1. Use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.	<ul> <li>Gather information and communicate with others using telecommunications, with support from teachers, family members or student partners.</li> </ul>
	<ul> <li>b. Use technology tools for individual and collaborative writing, communication and publishing activities to create curricular related products for audiences inside and outside the classroom.</li> </ul>
	c. N/A

#### 2<sup>nd</sup> Grade Idaho Student Information Technology Benchmarks

#### **STANDARD 5**: **Technology Research Tools**

Standard The student will:	Content Knowledge and Skills:
1. Use technology to locate, evaluate, and collect information from a variety of sources.	a. Explore electronic information sources.
	b. N/A
2. Use technology tools to process data and report results.	a. N/A

#### **STANDARD 6:**

Standard The student will:	Content Knowledge and Skills:
1. Use technology resources for solving problems and making informed decisions.	a. N/A

### 1st Grade Idaho Student Information Technology Benchmarks

#### STANDARD 1: Basic Operations and Concepts

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate a sound understanding of the	<ul> <li>Use developmentally appropriate and accurate technology terminology.</li> </ul>
basic nature and	b. N/A
technology systems.	c. N/A
2. Demonstrate proficiency in the use of technology.	a. Demonstrate functional operation of technology components.
	<ul> <li>Explore and acquire and apply strategies for identifying and solving routine software and hardware problems that occur in everyday use.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate an understanding of the ethical, cultural, and societal issues related to technology.	a. N/A
	<ul> <li>Demonstrate an awareness and respect for the ethical use of technology.</li> </ul>
2. Practice responsible use of technology systems, information, and software.	<ul> <li>Practice responsible use of technological devices and software.</li> </ul>
	<ul> <li>Demonstrate respect for others while using technology.</li> </ul>
	c. N/A

### 1<sup>st</sup> Grade Idaho Student Information Technology Benchmarks

#### STANDARD 3: Technology Productivity Tools

Standard The student will:	Content Knowledge and Skills:
1. Use technology tools to enhance learning, increase productivity, and promote creativity.	<ul> <li>Use prescribed technology writing or drawing tools for communicating and illustrating.</li> </ul>
	<ul> <li>b. Use prescribed technology tools for data collection and analysis.</li> </ul>
	<ul> <li>Explore prescribed technology for publishing and presenting information.</li> </ul>
	d. N/A

Standard The student will:	Content Knowledge and Skills:
<ol> <li>Use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.</li> </ol>	<ul> <li>Gather information and communicate with others using telecommunications, with support from teachers, family members or student partners.</li> </ul>
	<ul> <li>b. Use technology tools for individual and collaborative writing, communication and publishing activities to create curricular related products for audiences inside and outside the classroom.</li> </ul>
	c. N/A

#### 1st Grade Idaho Student Information Technology Benchmarks

#### **STANDARD 5**: **Technology Research Tools**

Standard The student will:	Content Knowledge and Skills:
1. Use technology to locate, evaluate, and collect information from a variety of sources.	a. Explore electronic information sources.
	b. N/A
2. Use technology tools to process data and report results.	c. N/A

#### **STANDARD 6:**

Standard The student will:	Content Knowledge and Skills:
1. Use technology resources for solving problems and making informed decisions.	a. N/A

#### Kindergarten Idaho Student Information Technology Benchmarks

#### STANDARD 1: Basic Operations and Concepts

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate a sound understanding of the	<ul> <li>Use developmentally appropriate and accurate technology terminology.</li> </ul>
basic nature and	b. N/A
technology systems.	c. N/A
2. Demonstrate proficiency in the use of technology.	<ul> <li>Use input and output devices successfully to operate computers, VCRs, audio tapes and other technologies.</li> </ul>
	<ul> <li>Explore and acquire and apply strategies for identifying and solving routine software and hardware problems that occur in everyday use.</li> </ul>

Standard The student will:	Content Knowledge and Skills:
1. Demonstrate an understanding of the	a. N/A
societal issues related to technology.	<ul> <li>Demonstrate an awareness and respect for the ethical use of technology.</li> </ul>
2. Practice responsible	<ul> <li>Practice responsible use of technological devices and software.</li> </ul>
use of technology systems, information,	<ul> <li>Demonstrate respect for others while using technology.</li> </ul>
and software.	c. N/A

#### Kindergarten Idaho Student Information Technology Benchmarks

#### STANDARD 3: Technology Productivity Tools

Standard The student will:	Content Knowledge and Skills:
1. Use technology tools to enhance learning, increase productivity, and promote creativity.	a. N/A
	b. N/A
	c. N/A
	d. N/A

#### STANDARD 4: Technology Communications Tools

Standard The student will:	Content Knowledge and Skills:
<ol> <li>Use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.</li> </ol>	a. N/A
	b. N/A
	c. N/A

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#### Kindergarten Idaho Student Information Technology Benchmarks

#### **STANDARD 5**: **Technology Research Tools**

Standard The student will:	Content Knowledge and Skills:
1. Use technology to locate, evaluate, and collect information from a variety of sources.	a. N/A
	b. N/A
2. Use technology tools to process data and report results.	c. N/A

#### **STANDARD 6**:

Standard The student will:	Content Knowledge and Skills:
1. Use technology resources for solving problems and making informed decisions.	a. N/A

#### IDAHO CONTENT STANDARDS K – 2 INFORMATION AND COMMUNICATION TECHNOLOGY

#### Standard 1: Creativity and Innovation

Goal 1.1: Demonstrate creative thinking, construct knowledge, and use information and communication technologies to develop innovative products and processes.

#### Objective(s): By the end of Grade 2, the student will be able to:

K-2.ICT.1.1.1	Use multiple forms of knowledge to create products.
K-2.ICT.1.1.2	Create original works as a means of personal or group
	expression.
K-2.ICT.1.1.3	Use models and games to introduce systems.

#### **Standard 2: Communication and Collaboration**

Goal 2.1: Use digital media and environments to communicate and work collaboratively to support individual learning and to contribute to the learning of others.

#### Objective(s): By the end of Grade 2, the student will be able to:

K-2.ICT.2.1.1 Identify and use digital media and environments to share ideas. K-2.ICT.2.1.2 Identify issues in a group setting using digital tools.

#### Standard 3: Research Skills and Critical Thinking

## Goal 3.1: Exercise critical thinking to plan and conduct research using a variety of information resources including print, digital, and other sources

#### Objective(s): By the end of Grade 2, the student will be able to:

K-2.ICT.3.1.1	Identify information needs and questions to solve an information
	problem or make an informed decision.
K-2.ICT.3.1.2	Identify information resources for specific tasks.
K-2.ICT.3.1.3	Identify navigation skills in accessing resources such as table of
	contents, index, menu, and search neids.
K-2.ICT.3.1.4	Collect and analyze data and information to make decisions and
	draw conclusions.

#### Standard 4: Digital Citizenship

Goal 4.1: Understand human, cultural, and societal issues related to information and communication technologies and practice legal and ethical behavior.

#### Objective(s): By the end of Grade 2, the student will be able to:

- K-2.ICT.4.1.1 Identify safe and responsible use of information and technology such as careful disclosure of personal information.
- K-2.ICT.4.1.2 Identify the source of information

NETS.S: http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS\_for\_Students\_2007.htm

#### Standard 5: Technology Operations & Concepts

# Goal 5.1: Demonstrate a sound understanding of technology concepts, systems, and operations.

#### Objective(s): By the end of Grade 2, the student will be able to:

K-2.ICT.5.1.1 Identify and use technology tools including hardware and electronic devices.

K-2.ICT.5.1.2 Identify and use software applications with assistance.

#### IDAHO CONTENT STANDARDS 3 – 5 INFORMATION AND COMMUNICATION TECHNOLOGY

#### Standard 1: Creativity and Innovation

Goal 1.1: Demonstrate creative thinking, construct knowledge, and use information and communication technologies to develop innovative products and processes.

#### **Objective(s):** By the end of Grade 5, the student will be able to:

3-5.ICT.1.1.1	Demonstrate different ways to gain knowledge to create
	products.
3-5.ICT.1.1.2	Create original works as a means of personal or group
	expression incorporating teacher selected resources
3-5 ICT.1.1.3	Interpret models and simulations to explore systems and issues.

#### Standard 2: Communication and Collaboration

# Goal 2.1: Use digital media and environments to communicate and work collaboratively to support individual learning and to contribute to the learning of others.

#### **Objective(s):** By the end of Grade 5, the student will be able to:

3-5.ICT.2.1.1	Illustrate and present ideas using digital media and
	environments.
3-5.ICT.2.1.2	Select an issue and use digital tools and media to present
	solutions collaboratively.

#### Standard 3: Research Skills and Critical Thinking

# Goal 3.1: Exercise critical thinking to plan and conduct research using a variety of information resources including print, digital and other sources

#### Objective(s): By the end of Grade 5, the student will be able to:

- 3-5.ICT.3.1.1 Categorize and understand information needs and create research questions to solve an information problem or make an informed decision.
- 3-5.ICT.3.1.2 Select information resources to solve an information problem or make an informed decision.

NETS.S: http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS\_for\_Students\_2007.htm

3-5.ICT.3.1.3	Demonstrate navigation skills in accessing information
	resources.
3-5 ICT.3.1.4	Collect and analyze data and information to make decisions,
	draw conclusions, and create new understanding.

#### **Standard 4: Digital Citizenship**

Goal 4.1: Understand human, cultural, and societal issues related to information and communication technologies and practice legal and ethical behavior.

#### Objective(s): By the end of Grade 5, the student will be able to:

responsible manner.

3-5 ICT.4.1.1 Describe safe, ethical, and responsible practices in the use of information and technology.3-5.ICT.4.1.2 Identify and cite information and sources in an ethical and

#### Standard 5: Technology Operations & Concepts

Goal 5.1: Demonstrate a sound understanding of technology concepts, systems, and operations.

#### **Objective(s):** By the end of Grade 5, the student will be able to:

3-5. ICT5.1.1	Identify and use technology tools independently such as
	electronic devices and keyboards.
3-5. ICT.5.1.2	Identify and use software applications independently.
3-5. ICT.5.1.3	Identify technology tools and software application problems.
3-5. ICT.5.1.4	Identify and experiment with new technologies such as
	hardware, software applications and web-based applications.

#### IDAHO CONTENT STANDARDS 6 – 8

#### INFORMATION AND COMMUNICATION TECHNOLOGY

#### **Standard 1: Creativity and Innovation**

Goal 1.1: Demonstrate creative thinking, construct knowledge, and use information and communication technologies to develop innovative products and processes.

#### Objective(s): By the end of Grade 8, the student will be able to:

6-8. ICT.1.1.1	Apply existing knowledge to generate new ideas, products, or
	processes.
6-8. ICT.1.1.2	Create original works as a means of personal or group
	expression using student selected resources.
6-8.ICT.1.1.3	Build models and simulations to explore systems, issues and trends.

NETS.S: http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS for Students 2007.htm

#### **Standard 2: Communication and Collaboration**

# Goal 2.1: Use digital media and environments to communicate and work collaboratively to support individual learning and to contribute to the learning of others.

#### Objective(s): By the end of Grade 8, the student will be able to:

- 6-8.ICT.2.1.1 Inquire, interact, and communicate ideas, employing a variety of digital media and environments.
- 6-8. ICT.2.1.2 Collaborate with others, using digital tools and media to identify and research an issue, compare solutions and make a decision.

#### Standard 3: Research Skills and Critical Thinking

# Goal 3.1: Exercise critical thinking to plan and conduct research using a variety of information resources including print, digital and other sources

#### Objective(s): By the end of Grade 8, the student will be able to:

6-8.ICT.3.1.1	Organize and analyze information needs to formulate research questions to solve an information problem or make an informed
	decision.
6-8.ICT.3.1.2	Compare and select information resources to solve an
	information problem or make an informed decision.
6-8.ICT.3.1.3	Demonstrate navigation skills in accessing a variety of
	information resources and begin using advanced search skills.
6-8.ICT.3.1.4	Collect, analyze and organize data and information to make decisions, draw conclusions, and create new understanding.

#### **Standard 4: Digital Citizenship**

Goal 4.1: Understand human, cultural, and societal issues related to information and communication technologies and practice legal and ethical behavior.

#### **Objective(s):** By the end of Grade 8, the student will be able to:

- 6-8.ICT.4.1.1 Practice safe, ethical, legal, and responsible use of information and technology.
- 6-8.ICT.4.1.2. Use and cite all information and sources in an ethical and responsible manner.

#### Standard 5: Technology Operations & Concepts

## Goal 5.1: Demonstrate a sound understanding of technology concepts, systems, and operations.

#### **Objective(s):** By the end of Grade 8, the student will be able to:

6-8.ICT.5.1.1	Differentiate, use and integrate technology tools.
6-8.ICT.5.1.2	Select and use software applications.
6-8.ICT.5.1.3	Troubleshoot technology tools and software applications.
6-8.ICT.5.1.4	Apply previous knowledge to new technologies.

NETS.S: http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS for Students 2007.htm
## IDAHO CONTENT STANDARDS 9 – 12 INFORMATION AND COMMUNICATION TECHNOLOGY

## **Standard 1: Creativity and Innovation**

Goal 1.1: Demonstrate creative thinking, construct knowledge, and use information and communication technologies to develop innovative products and processes.

## Objective(s): By the end of Grade 12, the student will be able to:

9-12.ICT.1.1.1	Evaluate and interpret existing knowledge to generate new
	ideas, products, or processes.
9-12.ICT.1.1.2	Create original works as a means of personal or group
	expression using multiple resources and formats.
9-12.ICT.1.1.3	Create models and simulations to explore complex systems and issues to identify trends and forecast possibilities.

## **Standard 2: Communication and Collaboration**

Goal 2.1: Use digital media and environments to communicate and work collaboratively to support individual learning and to contribute to the learning of others.

## **Objective(s):** By the end of Grade 12, the student will be able to:

9-12.ICT.2.1.1	Inquire, interact, and publish with peers, experts, or others
	employing a variety of digital media and environments.
9-12.ICT.2.1.2	Collaborate with others using digital tools and media to identify
	issues and exchange ideas, develop new understandings, make
	decisions and/or solve problems

## Standard 3: Research Skills and Critical Thinking

Goal 3.1: Exercise critical thinking to plan and conduct research using a variety of information resources including print, digital and other sources

## **Objective(s):** By the end of Grade 12, the student will be able to:

- 9-12.ICT.3.1.1 Design research questions and strategies based on information needs to solve an information problem or make an informed decision.
  9-12.ICT.3.1.2 Evaluate and select a variety of resources to solve an information problem or make an informed decision.
  9-12.ICT.3.1.3 Formulate specific searches using advanced navigation skills to
- 9-12.ICT.3.1.3 Formulate specific searches using advanced navigation skills to access a variety of resources.
- 9-12.ICT.3.1.4 Collect, analyze, organize, and interpret data and information to make informed decisions, draw conclusions, and construct new understanding and knowledge.

NETS.S: http://www.iste.org/Content/NavigationMenu/NETS/ForStudents/2007Standards/NETS\_for\_Students\_2007.htm

## Standard 4: Digital Citizenship

Goal 4.1: Understand human, cultural, and societal issues related to information and communication technologies and practice legal and ethical behavior.

## **Objective(s):** By the end of Grade 12, the student will be able to:

- 9-12. ICT.4.1.1 Practice and explain importance of safe, ethical, legal, and responsible use of information and technology.
- 9-12. ICT.4.1.2 Practice and explain importance of citing information.

## Standard 5: Technology Operations & Concepts

# Goal 5.1: Demonstrate a sound understanding of technology concepts, systems, and operations.

## **Objective(s):** By the end of Grade 12, the student will be able to:

- 9-12.ICT.5.1.1 Evaluate, configure, and implement various technologies.
- 9-12.ICT.5.1.2 Select, use and integrate various software applications.
- 9-12.ICT.5.1.3 Troubleshoot technology systems and software applications.
- 9-12.ICT.5.1.4 Integrate new technologies into current knowledge and practices.

## SUBJECT

Proposed Rule- IDAPA 08.02.03.004, Rules Governing Thoroughness, Incorporated by Reference- Common Core Standards for Math

## APPLICABLE STATUTE, RULE, OR POLICY

IDAPA 08.02.03.004, Rules of the Board Governing Thoroughness Section 33-1612, Idaho Code

## BACKGROUND/DISCUSSION

The Common Core Standards have been developed as a joint effort between the Council of Chief State School Officers (CCSSO) and the National Governors Association (NGA). The goal of the work was to ensure that students graduating from high school are college and career ready. The development team vowed to make the standards clearer, higher, and fewer. The work was started during the spring of 2009 and we have been given draft documents for review along this process.

We met with teams of math teachers, curricular specialists, and administrators that serve the content area of mathematics. We developed comments and shared them with CCSSO and NGA. This first public draft document was published on March 10<sup>th</sup>. Our math "working group" met on March 15<sup>th</sup> to discuss the future plan for Idaho in regards to these standards. Although these standards will be common across the nation, Idaho may add up to 15% unique state goals and objectives to be incorporated into the document after the June public comment period to better serve Idaho students.

These standards are entirely new; therefore, a document with strikethrough as typically attached is not included this time.

## ATTACHMENTS

Attachment 1 – Proposed change of IDAPA 08.02.03.004	Page 3
Attachment 2 – Common Core Document for Math	Page 5

## STAFF COMMENTS AND RECOMMENDATIONS

A final version of the Common Core Standards will be brought back to the board for approval at the completion of the comment period. It is expected that there will be no substantial changes from those submitted for approval at this time.

## **BOARD ACTION**

A motion to approve the Idaho Content Standards for Math as submitted.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No \_\_\_\_

A motion to approve the proposed rule change to IDAPA 08.02.03.004, Rules Governing Thoroughness to incorporate by reference the Idaho Content Standards for Math.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No \_\_\_\_\_

#### 004. INCORPORATION BY REFERENCE.

The following documents are incorporated into this rule:

01. The Idaho Content Standards. The Idaho Content Standards as adopted by the State Board of Education. Individual subject content standards are adopted in various years in relation to the curricular materials adoption schedule. Copies of this document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (SD 2010)(\_\_\_\_)

a.	Driver Education, as revised and adopted on August 21, 2008.	(SD 2010)
b.	Health, as revised and adopted on April 17, 2009.	(SD 2010)
c.	Humanities Categories:	(SD 2010)
i.	Art, as revised and adopted on April 17, 2009;	(SD 2010)
ii.	Dance, as revised and adopted on April 17, 2009;	(SD 2010)
iii.	Drama, as revised and adopted on April 17, 2009;	(SD 2010)
iv.	Interdisciplinary, as revised and adopted on April 17, 2009;	(SD 2010)
v.	Music, as revised and adopted on April 17, 2009;	(SD 2010)
vi.	World languages, as revised and adopted on April 17, 2009.	(SD 2010)
d.	English Language Arts, Part I: reading, as revised and adopted on August 21, 200	8 <u>April 22,</u>
	<u>2010</u> .	<del>SD 2010)()</del>
e.	- Language Arts, Part II: language arts, as revised and adopted on August 21, 2008.	(SD 2010)
<u>fe</u> .	Limited English Proficiency, as revised and adopted on August 21, 2008.	(SD 2010)
<u>gf</u> .	Mathematics, as revised and adopted on August 21, 2008 April 22, 2010.	<del>SD 2010)()</del>
<u>hg</u> .	Physical Education, as revised and adopted on April 17, 2009.	(SD 2010)
<u>ih</u> .	Science, as revised and adopted on April 17, 2009.	(SD 2010)
<u>ji</u> .	Social Studies, as revised and adopted on April 17, 2009.	(SD 2010)
<u>i</u> .	Information and Communication Technology, as revised and adopted on April 22,	2010 ( )

**02.** The Idaho English Language Development Standards. The Idaho English Language Development Standards as adopted by the State Board of Education on August 10, 2006. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

03. The Limited English Proficiency Program Annual Measurable Achievement Objectives (AMAOs) and Accountability Procedures. The Limited English Proficiency Program Annual Measurable Achievement Objectives and Accountability Procedures as adopted by the State Board of Education on August 10, 2006. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

**04.** The Idaho English Language Assessment (IELA) Achievement Standards. The Idaho English Language Assessment (IELA) Achievement Standards as adopted by the State Board of Education on August 10, 2006. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

**05.** The Idaho Standards Achievement Tests (ISAT) Achievement Standards. Achievement Standards as adopted by the State Board of Education on May 30, 2007. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

(3-30-07)

**06.** The Idaho Extended Content Standards. The Idaho Extended Content Standards as adopted by the State Board of Education on April 17, 2008. Copies of the document can be found at the State Board of Education website at http://www.boardofed.idaho.gov. (SD 0802)

**07. The Idaho Alternative Assessment Extended Achievement Standards**. Alternative Assessment Extended Achievement Standards as adopted by the State Board of Education on February 28, 2008. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (SD 0802)

**08.** The Idaho Standards for Infants, Toddlers, Children, and Youth Who Are Deaf or Hard of Hearing. As adopted by the State Board of Education on October 11, 2007. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

**09.** The Idaho Standards for Infants, Toddlers, Children, and Youth Who Are Blind or Visually Impaired. As adopted by the State Board of Education on October 11, 2007. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

# COMMON CORE STATE STANDARDS FOR Mathematics

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# **Introduction** Toward greater focus and coherence

The composite standards [of Hong Kong, Korea and Singapore] have a number of features that can inform an international benchmarking process for the development of K—6 mathematics standards in the US. First, the composite standards concentrate the early learning of mathematics on the number, measurement, and geometry strands with less emphasis on data analysis and little exposure to algebra. The Hong Kong standards for grades 1-3 devote approximately half the targeted time to numbers and almost all the time remaining to geometry and measurement.

Ginsburg, Leinwand and Decker, 2009

Mathematics experiences in early childhood settings should concentrate on (1) number (which includes whole number, operations, and relations) and (2) geometry, spatial relations, and measurement, with more mathematics learning time devoted to number than to other topics. The mathematical process goals should be integrated in these content areas. Children should understand the concepts and learn the skills exemplified in the teaching-learning paths described in this report.

National Research Council, 2009

In general, the US textbooks do a much worse job than the Singapore textbooks in clarifying the mathematical concepts that students must learn. Because the mathematics concepts in these textbooks are often weak, the presentation becomes more mechanical than is ideal. We looked at both traditional and non-traditional textbooks used in the US and found this conceptual weakness in both.

Ginsburg et al., 2005

Notable in the research base for these standards are conclusions from TIMSS and other studies of high-performing countries that the traditional US mathematics curriculum must become substantially more coherent and more focused in order to improve student achievement in mathematics. To deliver on the promise of common standards, the standards must address the problem of a curriculum that is 'a mile wide and an inch deep.' The draft Common Core State Standards for Mathematics are a substantial answer to this challenge.

It is important to recognize that "fewer standards" are no substitute for *focused* standards. Achieving "fewer standards" would be easy to do by simply resorting to broad, general statements. Instead, the draft Common Core State Standards for Mathematics aim for clarity and specificity.

Assessing the coherence of a set of standards is more difficult than assessing their focus. William Schmidt and Richard Houang (2002) have said that content standards and curricula are coherent if they are:

articulated over time as a sequence of topics and performances that are logical and reflect, where appropriate, the sequential or hierarchical nature of the disciplinary content from which the subject matter derives. That is, what and how students are taught should reflect not only the topics that fall within a certain academic discipline, but also the key ideas that determine how knowledge is organized and generated within that discipline. This implies that "to be coherent," a set of content standards must evolve from particulars (e.g., the meaning and operations of whole numbers, including simple math facts and routine computational procedures associated with whole numbers and fractions) to deeper structures inherent in the discipline. This deeper structure then serves as a means for connecting the particulars (such as an understanding of the rational number system and its properties). (emphasis added)

The draft Common Core State Standards for Mathematics endeavor to follow such a design, not only by stressing conceptual understanding of the key ideas, but also by continually returning to organizing principles such as place value or the laws of arithmetic to structure those ideas.

The standards in this draft document define what students should understand and be able to do. Asking a student to understand something means asking a teacher to assess whether the student has understood it. But what does mathematical understanding look like? One hallmark of mathematical understanding is the ability to justify, in a way appropriate to the student's mathematical maturity, *why* a particular mathematical statement is true or where a mathematical rule comes from. There is a world of difference between the student who can summon a mnemonic device such as "FOIL" to expand a product such as (a + b)(x + y) and a student who can explain where that mnemonic comes from. Teachers often observe this difference firsthand, even if large-scale assessments in the year 2010 often do not. The student who can explain the rule understands the mathematics, and may have a better chance to succeed at a less familiar task such as expanding (a + b + c)(x + y). Mathematical understanding and procedural skill are equally important, and both are assessable using mathematical tasks of sufficient richness.

The draft Common Core State Standards for Mathematics begin on the next page with eight Standards for Mathematical Practice. These are not a list of individual math topics, but rather a list of ways in which developing student-practitioners of mathematics increasingly ought to engage with those topics as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years.

Grateful acknowledgment is here made to Dr. Cathy Kessel for editing the draft standards.

## Mathematics | Standards for Mathematical Practice

Proficient students of all ages expect mathematics to make sense. They take an active stance in solving mathematical problems. When faced with a non-routine problem, they have the courage to plunge in and try something, and they have the procedural and conceptual tools to continue. They are experimenters and inventors, and can adapt known strategies to new problems. They think strategically.

The practices described below are encouraged in apprentices by expert mathematical thinkers. Students who engage in these practices, individually and with their classmates, discover ideas and gain insights that spur them to pursue mathematics beyond the classroom walls. They learn that effort counts in mathematical achievement. Encouraging these practices in students of all ages should be as much a goal of the mathematics curriculum as the learning of specific content.

## 1 Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

## 2 Reason abstractly and quantitatively.

Mathematically proficient students make sense of the quantities and their relationships in problem situations. Students bring two complementary abilities to bear on problems involving quantitative relationships: the ability to *decontextualize*—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

## 3 Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

## 4 Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a

student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, 2-by-2 tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

## 5 Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer algebra system, statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students interpret graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

### 6 Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

#### 7 Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see  $7 \times 8$  equals the well remembered  $7 \times 5 + 7 \times 3$ , in preparation for learning about the distributive property. In the expression  $x^2 + 9x + 14$ , older students can see the 14 as  $2 \times 7$  and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see  $5 - 3(x - y)^2$  as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers *x* and *y*.

## 8 Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation (y - 2)/(x - 1) = 3. Noticing the regularity in the way terms cancel when expanding (x - 1)(x + 1),  $(x - 1)(x^2 + x + 1)$ , and  $(x - 1)(x^3 + x^2 + x + 1)$  might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

# How to read the grade level standards



**Standards** define what students should understand and be able to do. **Clusters** are groups of related standards. Note that standards from different clusters may sometimes be closely related, because mathematics is a connected subject. **Domains** are larger groups of related standards. For each grade level in Grades K–8, the standards are organized into four or five domains. Standards from different domains may sometimes be closely related.

Algebra Symbol: Key standards for the development of algebraic thinking in Grades K–5 are indicated by \*.

**Dotted Underlines:** Dotted underlines, for example, <u>decade words</u>, indicate terms that are explained in the Glossary. In each grade, underlining is used for the first occurrence of a defined term, but not in subsequent occurrences.

Note on Grade Placement of Topics. What students can learn at any particular grade level depends upon what they have learned before. Ideally then, each standard in this document might have been phrased in the form, "Students who already know A should next come to learn B." But in the year 2010 this approach is unrealistic—not least because existing education research cannot specify all such learning pathways. Of necessity therefore, grade placements for specific topics have been made on the basis of state and international comparisons and the collective experience and collective professional judgment of educators, researchers and mathematicians. One promise of common state standards is that over time they will allow research on learning progressions to inform and improve the design of standards to a much greater extent than is possible today. Learning opportunities will continue to vary across schools and school systems, and educators should make every effort to meet the needs of individual students based on their current understanding.

**Note on Ordering of Topics within a Grade**. These standards do not dictate curriculum. In particular, just because topic A appears before topic B in the standards for a given grade, it does not necessarily mean that topic A must be taught before topic B. A teacher might prefer to teach topic B before topic A, or might choose to highlight connections by teaching topic A and topic B at the same time. Or, a teacher might prefer to teach a topic of his or her own choosing that leads, as a byproduct, to students reaching the standards for topics A and B.

# Overview of the Mathematics Standards Grades K-5

This table shows the domains and clusters in each grade K-5

	K	1	2	3	4	5
Number— Counting and Cardinality	<ul> <li>Number names</li> <li>Counting to tell the number of objects</li> <li>Comparing and ordering numbers</li> </ul>					
Number— Operations and the Problems They Solve	• Composing and decomposing numbers; addition and subtraction	<ul> <li>Addition and subtraction</li> <li>Describing situations and solving problems with addition and subtraction</li> </ul>	<ul> <li>Addition and subtraction</li> <li>Describing situations and solving problems with addition and subtraction</li> </ul>	<ul> <li>Multiplication and division</li> <li>Describing situations and solving problems with multiplication and division</li> </ul>	<ul> <li>Multiplication and Division</li> <li>Problem solving with the four operations</li> </ul>	Ť
Number— Base Ten	<ul> <li>Two-digit numbers</li> <li>Composing and decomposing ten</li> </ul>	<ul> <li>Numbers up to 100</li> <li>Adding and subtracting in base ten</li> </ul>	<ul> <li>Numbers up to 1000</li> <li>Adding and subtracting in base ten</li> </ul>	<ul> <li>Numbers up to 10,000</li> <li>Adding and subtracting in base ten</li> <li>Multiplying and dividing in base ten</li> </ul>	<ul> <li>Numbers up to 100,000</li> <li>Multiplying and dividing in base ten</li> </ul>	<ul> <li>Whole numbers in base ten</li> <li>Decimal concepts</li> <li>Operations on decimals</li> </ul>
Number— Fractions				<ul> <li>Fractions as representations of numbers</li> <li>Fractional quantities</li> </ul>	<ul><li> Operations on fractions</li><li> Decimal concepts</li></ul>	<ul><li>Fraction equivalence</li><li>Operations on fractions</li></ul>
Measurement and Data	<ul> <li>Direct measurement</li> <li>Representing and interpreting data</li> </ul>	<ul> <li>Length measurement</li> <li>Time measurement</li> <li>Representing and interpreting data</li> </ul>	<ul> <li>Length measurement</li> <li>Time and money</li> <li>Representing and interpreting data</li> </ul>	<ul> <li>The number line and units of measure</li> <li>Perimeter and area</li> <li>Representing and interpreting data</li> </ul>	<ul> <li>The number line and units of measure</li> <li>Perimeter and area</li> <li>Angle measurement</li> <li>Representing and interpreting data</li> </ul>	<ul> <li>Units of measure</li> <li>Volume</li> <li>Representing and interpreting data</li> </ul>
Geometry	• Shapes, their attributes, and spatial reasoning	• Shapes, their attributes, and spatial reasoning	• Shapes, their attributes, and spatial reasoning	<ul> <li>Properties of 2- dimensional shapes</li> <li>Structuring rectangular shapes</li> </ul>	<ul><li>Lines and angles</li><li>Line symmetry</li></ul>	<ul><li>Coordinates</li><li>Plane figures</li></ul>

# Overview of the Mathematics Standards Grades 6–8

This table shows the domains and clusters in each grade 6-8.

	Grade				
	6	7	8		
Ratios and Proportional Relationships	• Ratios • Unit rates	<ul> <li>Analyzing proportional relationships</li> <li>Percent</li> </ul>			
The Number System	<ul><li> Operations</li><li> The system of rational numbers</li></ul>	<ul><li> The system of rational numbers</li><li> The system of real numbers</li></ul>	• The system of real numbers		
Expressions and Equations	<ul> <li>Expressions</li> <li>Quantitative relationships and the algebraic approach to problems</li> </ul>	<ul> <li>Expressions</li> <li>Quantitative relationships and the algebraic approach to solving problems</li> </ul>	<ul><li>Slopes of lines in the coordinate plane</li><li>Linear equations and systems</li></ul>		
Functions			<ul> <li>Function concepts</li> <li>Functional relationships between quantities</li> </ul>		
Geometry	• Properties of area, surface area, and volume	<ul><li>Congruence and similarity</li><li>Angles</li></ul>	<ul><li>Congruence and similarity</li><li>The Pythagorean Theorem</li><li>Plane and solid geometry</li></ul>		
Statistics and Probability	<ul> <li>Variability and measures of center</li> <li>Summarizing and describing distributions</li> </ul>	<ul> <li>Situations involving randomness</li> <li>Random sampling to draw inferences about a population</li> <li>Comparative inferences about two populations</li> </ul>	• Patterns of association in bivariate data		

## Mathematics | Kindergarten

In Kindergarten, instructional time should focus on two critical areas: (1) representing, comparing and ordering whole numbers and joining and separating sets; (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

(1) Students use numbers, including written numerals, to represent quantities and to solve quantitative problems, such as counting objects in a set; creating a set with a given number of objects; comparing and ordering sets or numerals; and modeling simple joining and separating situations with objects. They choose, combine, and apply effective strategies for answering quantitative questions, including quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.

(2) Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic shapes, such as squares, triangles, circles, rectangles, (regular) hexagons, and (isosceles) trapezoids, presented in a variety of ways (e.g., with different sizes or orientations), as well as three-dimensional shapes such as spheres, cubes, and cylinders. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

#### Number-Counting and Cardinality

#### Number names

- 1. Say the number name sequence to 100.
- 2. Know the decade words to ninety and recite them in order ("ten, twenty, thirty, ...").
- 3. Say the number name sequence forward or backward beginning from a given number within the known sequence (instead of always beginning at 1).
- 4. Write numbers from 1 to 20 in base-ten notation.

#### Counting to tell the number of objects

- 5. Count to answer "how many?" questions about as many as 20 things. Objects may be arranged in a line, a rectangular array, a circle, or a scattered configuration.
- 6. Understand that when counting objects,
  - a. The number names are said in the standard order.
  - b. Each object is paired with one and only one number name.
  - c. The last number name said tells the number of objects counted.
- 7. Understand that when counting forward, each successive number name refers to a quantity that is 1 larger.

#### Comparing and ordering numbers

- 8. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. *Include groups with up to ten objects*.
- 9. Compare and put in order numbers between 1 and 10 presented in written symbols: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

#### Number–Operations and the Problems They Solve

K-NOP

K-NBT

#### Composing and decomposing numbers; addition and subtraction

- 1. Understand addition as putting together—e.g., finding the number of objects in a group formed by putting two groups together. Understand subtraction as taking apart—e.g., finding the number of objects left when a one group is taken from another.
- 2. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. *Note that drawings need not show details, but should show the mathematics in the problem. (This note also applies wherever drawings are mentioned in subsequent standards.)*
- 3. \*Decompose numbers less than or equal to 10 into pairs in various ways, e.g., using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3). Compose numbers whose sum is less than or equal to 10, e.g., using objects or drawings, and record each composition by a drawing or equation (e.g., 3 + 1 = 4). \*
- 4. Compose and decompose numbers less than or equal to 10 in two different ways, and record compositions and decompositions by drawings or equations. For example, 7 might be composed or decomposed in two different ways by a drawing showing how a group of 2 and a group of 5 together make the same number as do a group of 3 and a group of 4.
- 5. Understand that addition and subtraction are related. For example, when a group of 9 is decomposed into a group of 6 and a group of 3, this means not only 9 = 6 + 3 but also 9 3 = 6 and 9 6 = 3.
- 6. \*Solve addition and subtraction word problems, and calculate <u>additions and subtractions within 10</u>, e.g., using objects or drawings to represent the problem.
- 7. Fluently add and subtract, for sums and minuends of 5 or less.

#### Number–Base Ten

Two-digit numbers

- 1. Understand that 10 can be thought of as a bundle of ones—a unit called a "ten."
- 2. Understand that a teen number is composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.
- 3. Compose and decompose teen numbers into a ten and some ones, e.g., by using objects or drawings, and record the compositions and decompositions in base-ten notation. *For example,* 10 + 8 = 18 and 14 = 10 + 4.
- 4. Put in order numbers presented in base-ten notation from 1 to 20 (inclusive), and be able to explain the reasoning.
- 5. Understand that a decade word refers to one, two, three, four, five, six, seven, eight, or nine tens.
- 6. Understand that the two digits of a two-digit number represent amounts of tens and ones. In 29, for example, the 2 represents two tens and the 9 represents nine ones.

#### Composing and decomposing ten

- 7. Decompose 10 into pairs of numbers, e.g., by using objects or drawings, and record each decomposition with a drawing or equation.
- 8. Compose numbers to make 10, e.g., by using objects or drawings, and record each composition with a drawing or equation.
- 9. \*For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation.

#### Measurement and Data

#### Direct measurement

- 1. Understand that objects have measurable attributes, such as length or weight. A single object might have several measurable attributes of interest.
- 2. Directly compare two objects with a measurable attribute in common, to see which object has "more of" the attribute. For example, directly compare the heights of two books and identify which book is taller.

#### Representing and interpreting data

3. Classify objects or people into given categories; count the numbers in each category and sort the categories by count. *Limit category counts to be less than or equal to 10.* 

#### Geometry

#### Shapes, their attributes, and spatial reasoning

- 1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as *above*, *below*, *beside*, *in front of*, *behind*, and *next to*.
- 2. Understand that names of shapes apply regardless of the orientation or overall size of the shape. For example, a square in any orientation is still a square. Students may initially need to physically rotate a shape until it is "level" before they can correctly name it.
- 3. Understand that shapes can be two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
- 4. Understand that shapes can be seen as having parts, such as sides and vertices ("corners"), and that shapes can be put together to compose other shapes.
- 5. Analyze and compare a variety of two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, component parts (e.g., number of sides and vertices) and other attributes (e.g., having sides of equal length).
- 6. Combine two- or three-dimensional shapes to solve problems such as deciding which puzzle piece will fit into a place in a puzzle.

K-MD

K-G

## Mathematics | Grade 1

In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for <u>additions and subtractions within 20</u>; (2) developing understanding of whole number relationships, including grouping in tens and ones, (3) developing understanding of linear measurement and measuring lengths, and (4) composing and decomposing geometric shapes.

(1) Students develop strategies for adding and subtracting whole numbers based on their prior work with small numbers. They use a variety of models, including discrete objects and length-based models (e.g., cubes connected to form lengths), to model "put together/take apart," "add to," "take from," and "compare" situations to develop meaning for the operations of addition and subtraction, and to develop strategies to solve arithmetic problems with these operations. Students understand connections between counting and addition and subtraction (i.e., adding two is the same as counting on two). They use properties of addition (commutativity and associativity) to add whole numbers and to create and use increasingly sophisticated strategies based on these properties (e.g., "making tens") to solve addition and subtraction problems within 20. By comparing a variety of solution strategies, children build their understanding of the inverse relationship between addition and subtraction.

(2) Students compare and order whole numbers (at least to 100), to develop understanding of and solve problems involving their relative sizes. They think of whole numbers between 10 and 100 in terms of tens and ones (especially recognizing the numbers 11 to 19 as composed of a ten and some ones). They understand the sequential order of the counting numbers and their relative magnitudes through activities such as representing numbers on paths of numbered things.

(3) Students develop an understanding of the meaning and processes of measurement, including underlying concepts such as partitioning (the mental activity of decomposing the length of an object into equal-sized units) and transitivity (e.g., in terms of length, if object A is longer than object B and object B is longer than object C, then object A is longer than object C). They understand linear measure as an iteration of units, and use rulers and other measurement tools with that understanding.

(4) Students compose and decompose plane and solid figures (e.g., put two congruent isosceles triangles together to make a rhombus), building understanding of part-whole relationships as well as the properties of the original and composite shapes. As they combine solid and plane figures, they recognize them from different perspectives and orientations, describe their geometric attributes, and determine how they are alike and different, to develop the background for measurement and for initial understandings of properties such as congruence and symmetry.

#### Number–Operations and the Problems They Solve

#### Addition and subtraction

- 1. \*Understand the properties of addition.
  - a. Addition is commutative. For example, if 3 cups are added to a stack of 8 cups, then the total number of cups is the same as when 8 cups are added to a stack of 3 cups; that is, 8 + 3 = 3 + 8.
  - b. Addition is associative. For example, 4 + 3 + 2 can be found by first adding 4 + 3 = 7 then adding 7 + 2 = 9, or by first  $adding \ 3 + 2 = 5 \ then \ adding \ 4 + 5 = 9.$
  - c. 0 is the additive identity.
- 2. \*Explain and justify properties of addition and subtraction, e.g., by using representations such as objects, drawings, and story contexts. Explain what happens when:
  - a. The order of addends in a sum is changed in a sum with two addends.
  - b. 0 is added to a number.
  - c. A number is subtracted from itself.
  - d. One addend in a sum is increased by 1 and the other addend is decreased by 1. Limit to two addends.
- 3. \*Understand that addition and subtraction have an inverse relationship. For example, if 8 + 2 = 10 is known, then 10 2 = 8and 10 - 8 = 2 are also known.
- \*Understand that when all but one of three numbers in an addition or subtraction equation are known, the unknown number can be found. Limit to cases where the unknown number is a whole number.
- 5. Understand that addition can be recorded by an expression (e.g., 6 + 3), or by an equation that shows the sum (e.g., 6 + 3) = 9). Likewise, subtraction can be recorded by an expression (e.g., 9 - 5), or by an equation that shows the difference (e.g., 9-5=4).

#### Describing situations and solving problems with addition and subtraction

- 6. Understand that addition and subtraction apply to situations of adding-to, taking-from, putting together, taking apart, and comparing. See Glossary, Table 1.
- 7. \*Solve word problems involving addition and subtraction within 20, e.g., by using objects, drawings and equations to represent the problem. Students should work with all of the addition and subtraction situations shown in the Glossary, Table 1, solving problems with unknowns in all positions, and representing these situations with equations that use a symbol for the unknown (e.g., a question mark or a small square). Grade 1 students need not master the more difficult problem types.
- 8. Solve word problems involving addition of three whole numbers whose sum is less than or equal to 20.

#### Number-Base Ten

#### Numbers up to 100

SDE

- 1. Read and write numbers to 100.
- 2. Starting at any number, count to 100 or beyond.
- 3. Understand that when comparing two-digit numbers, if one number has more tens, it is greater; if the amount of tens is the same in each number, then the number with more ones is greater.
- 4. Compare and order two-digit numbers based on meanings of the tens and ones digits, using > and < symbols to record the results of comparisons.

#### Adding and subtracting in base ten

- 5. Calculate mentally, additions and subtractions within 20.
  - a. Use strategies that include counting on; making ten (for example, 7 + 6 = 7 + 3 + 3 = 10 + 3 = 13); and decomposing a number (for example, 17 - 9 = 17 - 7 - 2 = 10 - 2 = 8).
- 6. Demonstrate fluency in addition and subtraction within 10.
- 7. Understand that in adding or subtracting two-digit numbers, one adds or subtracts like units (tens and tens, ones and ones) and sometimes it is necessary to compose or decompose a higher value unit.
- 8. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count.
- 9. Add one-digit numbers to two-digit numbers, and add multiples of 10 to one-digit and two-digit numbers.
- 10. Explain addition of two-digit numbers using concrete models or drawings to show composition of a ten or a hundred.
- 11. \*Add two-digit numbers to two-digit numbers using strategies based on place value, properties of operations, and/or the inverse relationship between addition and subtraction; explain the reasoning used.

1-NBT

#### Measurement and Data

#### Length measurement

- 1. Order three objects by length; compare the length of two objects indirectly by using a third object.
- 2. Understand that the length of an object can be expressed numerically by using another object as a length unit (such as a paper-clip, yardstick, or inch length on a ruler). The object to be measured is partitioned into as many equal parts as possible with the same length as the length unit. The length measurement of the object is the number of length units that span it with no gaps or overlaps. *For example, "I can put four paperclips end to end along the pencil, so the pencil is four paperclips long."*
- 3. Measure the length of an object by using another object as a length unit.

#### Time measurement

4. Tell time from analog clocks in hours and half- or quarter-hours.

#### Representing and interpreting data

5. Organize, represent, and interpret data with several categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

#### Geometry

1-G

#### Shapes, their attributes, and spatial reasoning

- 1. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) for a wide variety of shapes.
- 2. Understand that shapes can be joined together (composed) to form a larger shape or taken apart (decomposed) into a collection of smaller shapes. Composing multiple copies of some shapes creates tilings. *In this grade, "circles," "rectangles," and other shapes include their interiors as well as their boundaries.*
- 3. Compose two-dimensional shapes to create a unit, using cutouts of rectangles, squares, triangles, half-circles, and quartercircles. Form new shapes by repeating the unit.
- 4. Compose three-dimensional shapes to create a unit, using concrete models of cubes, right rectangular prisms, right circular cones, and right circular cylinders. Form new shapes by repeating the unit. *Students do not need to learn formal names such as "right rectangular prism."*
- 5. Decompose circles and rectangles into two and four equal parts. Describe the parts using the words *halves*, *fourths*, and *quarters*, and using the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the parts. Understand that decomposing into more equal shares creates smaller shares.
- 6. Decompose two-dimensional shapes into rectangles, squares, triangles, half-circles, and quarter-circles, including decompositions into equal shares.

## Mathematics | Grade 2

In Grade 2, instructional time should focus on three critical areas: (1) developing understanding of base-ten notation; (2) developing fluency with <u>additions and subtractions within 20</u> and fluency with multi-digit addition and subtraction; and (3) describing and analyzing shapes.

(1) Students develop an understanding of the base-ten system (at least to 1000). Their understanding of the base-ten system includes ideas of counting in units (twos, fives, and tens) and multiples of hundreds, tens, and ones, as well as number relationships, including comparing and ordering. They understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).

(2) Students use their understanding of addition to develop fluency with <u>additions and subtractions within 20</u>. They solve arithmetic problems by applying their understanding of models for addition and subtraction (such as combining or separating sets or using number lines that begin with zero), relationships and properties of numbers, and properties of addition. They develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of two-digit whole numbers. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences. They develop fluency with efficient procedures, including standard algorithms, for adding and subtracting whole numbers; understand and explain why the procedures work based on their understanding of base-ten notation and properties of operations; and use them to solve problems.

(3) Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding attributes of two- and three-dimensional space such as area and volume, and properties such as congruence and symmetry that they will learn about in later grades.

Number–Operations and the Problems They Solve

#### Addition and subtraction

- 1. \*Explain and justify properties of addition and subtraction, e.g., by using representations such as objects, drawings, and story contexts. Include properties such as:
  - a. Changing the order of addends does not change their sum.
  - b. Subtracting one addend from a sum of two numbers results in the other addend.
  - c. If more is subtracted from a number, the difference is decreased, and if less is subtracted the difference is increased.
  - d. In an addition equation, each addend can be decomposed and the parts can be recombined in any order without changing the sum. For example, 5 + 3 = 8. Because 5 decomposes as 4 + 1, the first addend can be replaced by 4 + 1, yielding (4 + 1) + 3 = 8. Recombining in two different orders: 4 + 4 = 8, also 7 + 1 = 8.

#### Describing situations and solving problems with addition and subtraction

- 2. \*Solve word problems involving <u>addition and subtraction within 100</u>, e.g., by using drawings or equations to represent the problem. Students should work with all of the addition and subtraction situations shown in the Glossary, Table 1, solving problems with unknown sums, addends, differences, minuends, and subtrahends, and representing these situations with equations that use a symbol for the unknown (e.g., a question mark or a small square). Focus on the more difficult problem types.
- 3. Solve two-step word problems involving <u>addition and subtraction within 100</u>, e.g., by using drawings or equations to represent the problem.

#### Number-Base Ten

#### Numbers up to 1000

- 1. Understand that 100 can be thought of as a bundle of tens—a unit called a "hundred."
- 2. Read and write numbers to 1000 using base-ten notation, number names, and expanded form.
- 3. Count within 1000; skip count by 2s, 5s, 10s, and 100s.
- 4. Understand that when comparing three-digit numbers, if one number has more hundreds, it is greater; if the amount of hundreds is the same in each number, then the number with more tens is greater. If the amount of tens and hundreds is the same in each number, then the number ones is greater.
- 5. Compare and order three-digit numbers based on meanings of the hundreds, tens, and ones digits.

#### Adding and subtracting in base ten

- 6. Fluently add and subtract within 20. By end of Grade 2, know from memory sums of one-digit numbers.
- 7. Mentally compute sums and differences of multiples of 10. For example, mentally calculate 130 80.
- 8. Understand that in adding or subtracting three-digit numbers, one adds or subtracts like units (hundreds and hundreds, tens and tens, ones and ones) and sometimes it is necessary to compose or decompose a higher value unit.
- 9. Given a number from 100 to 900, mentally find 10 more or 10 less than the number, and mentally find 100 more or 100 less than the number, without counting.
- 10. Understand that algorithms are predefined steps that give the correct result in every case, while strategies are purposeful manipulations that may be chosen for specific problems, may not have a fixed order, and may be aimed at converting one problem into another. For example, one might mentally compute 503 398 as follows: 398 + 2 = 400, 400 + 100 = 500, 500 + 3 = 503, so the answer is 2 + 100 + 3, or 105.
- 11. Compute sums and differences of one-, two-, and three-digit numbers using strategies based on place value, properties of operations, and/or the inverse relationship between addition and subtraction; explain the reasoning used.
- 12. \*Explain why addition and subtraction strategies and algorithms work, using place value and the <u>properties of operations</u>. Include explanations supported by drawings or objects. A range of reasonably efficient algorithms may be covered, not only the standard algorithm.
- 13. Compute sums of two three-digit numbers, and compute sums of three or four two-digit numbers, using the standard algorithm; compute differences of two three-digit numbers using the standard algorithm.

#### Measurement and Data

2-MD

#### Length measurement

- 1. Understand that 1 inch, 1 foot, 1 centimeter, and 1 meter are conventionally defined lengths used as standard units.
- 2. Measure lengths using measurement tools such as rulers, yardsticks and measuring tapes; understand that these tools are used to find out how many standard length units span an object with no gaps or overlaps, when the 0 mark of the tool is aligned with an end of the object.

2-NBT

- 3. Understand that when measuring a length, if a smaller unit is used, more copies of that unit are needed to measure the length than would be necessary if a larger unit were used.
- 4. Understand that units can be decomposed into smaller units, e.g., 1 foot can be decomposed into 12 inches and 1 meter can be decomposed into 100 centimeters. A small number of long units might compose a greater length than a large number of small units.
- 5. Understand that lengths can be compared by placing objects side by side, with one end lined up. The difference in lengths is how far the longer extends beyond the end of the shorter.
- 6. Understand that a sum of two whole numbers can represent a combination of two lengths; a difference of two whole numbers can represent a difference in length; find total lengths and differences in lengths using addition and subtraction.

#### Time and money

- 7. Find time intervals between hours in one day.
- 8. Solve word problems involving dollar bills, quarters, dimes, nickels and pennies. *Do not include dollars and cents in the same problem*.

#### Representing and interpreting data

- 9. Generate measurement data by measuring whole-unit lengths of several objects, or by making repeated measurements of the same object. Show the measurements by making a <u>dot plot</u>, where the horizontal scale is marked off in whole-number units.
- 10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with several categories. Connect representations on bar graph scales, rulers, and number lines that begin with zero. Solve simple Put Together/Take Apart and Compare problems using information presented in a bar graph. *See Glossary, Table 1*.

#### Geometry

#### Shapes, their attributes, and spatial reasoning

- 1. Understand that different categories of shapes (e.g., rhombuses, trapezoids, rectangles, and others) can be united into a larger category (e.g., quadrilaterals) on the basis of shared attributes (e.g., having four straight sides).
- 2. Identify and name polygons of up to six sides by the number of their sides or angles.
- 3. Recognize rectangles, rhombuses, squares and trapezoids as examples of quadrilaterals; draw examples of quadrilaterals that do not belong to any of these subcategories.
- 4. Draw and identify shapes that have specific attributes, such as number of equal sides or number of equal angles. Sizes of lengths and angles are compared directly or visually, not compared by measuring.
- 5. Recognize objects as resembling spheres, right circular cylinders, and right rectangular prisms. *Students do not need to learn formal names such as "right rectangular prism."*
- 6. Decompose circular and rectangular objects into two, three, or four equal parts. Describe the parts using the words *halves*, *thirds*, *half of*, *a third of*, etc.; describe the wholes as two halves, three thirds, four fourths. Recognize that a half, a third, or a fourth of a circular or rectangular object—a graham cracker, for example—is the same size regardless of its shape.

2-G

## Mathematics | Grade 3

In Grade 3, instructional time should focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, starting with unit fractions; (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes. Multiplication, division, and fractions are the most important developments in Grade 3.

(1) Students develop an understanding of the meanings of multiplication and division of whole numbers through the use of representations such as equal-sized groups, arrays, area models, and equal jumps on number lines for multiplication; and successive subtraction, partitioning, and sharing for division. Through this process, numbers themselves take on new meaning and are no longer only counters for single objects. They represent groups, a number of groups (for example, 3 teams of 6 people), or a comparative factor (3 times as long).

Students use properties of operations to calculate products of whole numbers. They use increasingly sophisticated strategies based on these properties to solve multiplication and division problems involving single-digit factors. By comparing a variety of solution strategies, students learn the inverse relationship between multiplication and division.

(2) Students develop an understanding of a definition of a fraction, beginning with unit fractions. They use fractions to represent parts of a whole or distances on a number line that begins with zero. Students understand that the size of a fractional part is relative to the size of the whole (for example, <sup>1</sup>/<sub>4</sub> of a mile is longer than <sup>3</sup>/<sub>4</sub> of a foot, even though <sup>1</sup>/<sub>4</sub> < <sup>3</sup>/<sub>4</sub>), and they are able to use fractions to represent numbers equal to, less than, and greater than one. They solve problems that involve comparing and ordering fractions using by models or strategies based on noticing common numerators or denominators.

(3) Students recognize area as an attribute of two-dimensional regions. They understand that area can be quantified by finding the total number of same-size units of area required to cover the shape without gaps or overlaps. They understand that a 1-unit by 1-unit square is the standard unit for measuring area. Students understand that rectangular arrays can be decomposed into identical rows or into identical columns. By decomposing rectangles into rectangular arrays of squares, students connect area measure to the area model used to represent multiplication, and they use this connection to justify using multiplication to determine the area of a rectangle. Students contrast area with perimeter.

(4) Students describe, analyze, and compare properties of two-dimensional shapes. They compare and classify the shapes by their sides and angles, and connect these with definitions of shapes. Students investigate, describe, and reason about decomposing and combining polygons to make other polygons. Through building, drawing, and analyzing two-dimensional shapes, students deepen their understanding of attributes and properties of two-dimensional objects.

Number–Operations and the Problems They Solve

- 1. Understand that multiplication of whole numbers is repeated addition. For example,  $5 \times 7$  means 7 added to itself 5 times. Products can be represented by rectangular arrays, with one factor the number of rows and the other the number of columns.
- 2. \*Understand the properties of multiplication.
  - a. Multiplication is <u>commutative</u>. For example, the total number in 3 groups with 6 things each is the same as the total number in 6 groups with 3 things each, that is,  $3 \times 6 = 6 \times 3$ .
  - b. Multiplication is associative. For example,  $4 \times 3 \times 2$  can be calculated by first calculating  $4 \times 3 = 12$  then calculating  $12 \times 2 = 24$ , or by first calculating  $3 \times 2 = 6$  then calculating  $4 \times 6 = 24$ .
  - c. 1 is the multiplicative identity.
  - d. Multiplication distributes over addition (the <u>distributive property</u>). For example,  $5 \times (3 + 4) = (5 \times 3) + (5 \times 4)$ .
- 3. \*Explain and justify properties of multiplication and division, e.g., by using representations such as objects, drawings, and story contexts. Include properties such as:
  - a. Changing the order of two factors does not change their product.
  - b. The product of a number and 1 is the number.
  - c. Dividing a nonzero number by itself yields 1.
  - d. Multiplying a quantity by a nonzero number, then dividing by the same number, yields the original quantity.
  - e. When one factor in a product is multiplied by a number and another factor divided by the same number, the product is unchanged. *Limit to multiplying and dividing by numbers that result in whole-number quotients.*
  - f. Products where one factor is a one-digit number can be computed by decomposing one factor as the sum of two numbers, multiplying each number by the other factor, and adding the two products.
- 4. \*Understand that multiplication and division have an inverse relationship. For example, if  $5 \times 7 = 35$  is known, then  $35 \div 5 = 7$  and  $35 \div 7 = 5$  are also known. The division  $35 \div 5$  means the number which yields 35 when multiplied by 5; because  $5 \times 7 = 35$ , then  $35 \div 5 = 7$ .
- 5. \*Understand that when all but one of three numbers in a multiplication or division equation are known, the unknown number can be found. *Limit to cases where the unknown number is a whole number*.

#### Describing situations and solving problems with multiplication and division

- 6. Understand that multiplication and division apply to situations with equal groups, arrays or area, and comparing. *See Glossary, Table 2.*
- 7. \*Solve word problems involving <u>multiplication and division within 100</u>, using an equation with a symbol for the unknown to represent the problem. *This standard is limited to problems with whole-number quantities and whole-number quotients. Focus on situations described in the Glossary, Table 2.*
- 8. \*Solve one- or two-step word problems involving the four operations. *This standard is limited to problems with whole-number quantities and whole-number quotients.*
- 9. Understand that multiplication and division can be used to compare quantities (see Glossary, Table 2); solve multiplicative comparison problems with whole numbers (problems involving the notion of "times as much").

#### Number-Base Ten

3-NBT

## Numbers up to 10,000

- 1. Understand that 1000 can be thought of as a bundle of hundreds—a unit called a "thousand."
- 2. Read and write numbers to 10,000 using base-ten notation, number names, and expanded form.
- 3. Count within 10,000; skip count by 10s, 100s and 1000s.
- 4. Understand that when comparing four-digit numbers, if one number has more thousands, it is greater; if the amount of thousands is the same in each number, then the number with more hundreds is greater; and so on. Compare and order four-digit numbers based on meanings of the digits.

#### Adding and subtracting in base ten

- 5. Mentally calculate sums and differences of multiples of 10, 100, and 1000. For example, mentally calculate 1300 800
- 6. Given a number from 1000 to 9000, mentally find 100 more or 100 less than the number, and mentally find 1000 more or 1000 less than the number, without counting.

Multiplying and dividing in base ten

- 7. \*Understand that the <u>distributive property</u> is at the heart of strategies and algorithms for multiplication and division computations with numbers in base-ten notation; use the <u>distributive property</u> and other <u>properties of operations</u> to explain patterns in the multiplication table and to derive new multiplication and division equations from known ones. For example, the distributive property makes it possible to multiply  $4 \times 7$  by decomposing 7 as 5 + 2 and using  $4 \times 7 = 4 \times (5 + 2) = (4 \times 5) + (4 \times 2) = 20 + 8 = 28$ .
- 8. Fluently multiply one-digit numbers by 10.
- 9. Use a variety of strategies for <u>multiplication and division within 100</u>. By end of Grade 3, know from memory products of one-digit numbers where one of the factors is 2, 3, 4, or 5.

#### Number-Fractions

#### Fractions as representations of numbers

- 1. Understand that a <u>unit fraction</u> corresponds to a point on a number line. For example, 1/3 represents the point obtained by decomposing the interval from 0 to 1 into three equal parts and taking the right-hand endpoint of the first part. In Grade 3, all number lines begin with zero.
- 2. Understand that fractions are built from unit fractions. For example, 5/4 represents the point on a number line obtained by marking off five lengths of <sup>1</sup>/<sub>4</sub> to the right of 0.
- 3. Understand that two fractions are equivalent (represent the same number) when both fractions correspond to the same point on a number line. Recognize and generate equivalent fractions with denominators 2, 3, 4, and 6 (e.g., 1/2 = 2/4, 4/6 = 2/3), and explain the reasoning.
- 4. Understand that whole numbers can be expressed as fractions. Three important cases are illustrated by the examples 1 = 4/4, 6 = 6/1, and  $7 = (4 \times 7)/4$ . Expressing whole numbers as fractions can be useful for solving problems or making calculations.

#### Fractional quantities

- 5. Understand that fractions apply to situations where a whole is decomposed into equal parts; use fractions to describe parts of wholes. *For example, to show 1/3 of a length, decompose the length into 3 equal parts and show one of the parts.*
- 6. Compare and order fractional quantities with equal numerators or equal denominators, using the fractions themselves, <u>tape</u> <u>diagrams</u>, number line representations, and area models. Use > and < symbols to record the results of comparisons.

#### Measurement and Data

#### The number line and units of measure

- 1. Understand that a number line has an origin (0) and a unit (1), with whole numbers one unit distance apart. Use number lines to represent problems involving distances, elapsed time, amounts of money and other quantities. *In such problems, the interval from 0 to 1 may represent a unit of distance, time, money, etc.*
- 2. Understand that a unit of measure can be decomposed into equal-sized parts, whose sizes can be represented as fractions of the unit. Convert measurements in one unit to measurements in a smaller or a larger unit, and solve problems involving such mixed units (e.g., feet and inches, weeks and days).

#### Perimeter and area

- 3. Understand and use concepts of area measurement.
  - a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.
  - b. A plane figure which can be covered without gaps or overlaps by *n* unit squares has an area of *n* square units. Areas of some other figures can be measured by using fractions of unit squares or using figures whose areas have been found by decomposing other figures.
  - c. When measuring an area, if a smaller unit of measurement is used, more units must be iterated to measure the area in those units.
  - d. Determine and compare areas by counting square units. Use  $cm^2$ ,  $m^2$ ,  $in^2$ ,  $ft^2$ , and improvised units.
- 4. Understand that multiplication of whole numbers can be represented by area models; a rectangular region that is *a* length units by *b* length units (where *a* and *b* are whole numbers) and tiled with unit squares illustrates why the rectangle encloses an area of  $a \times b$  square units.
- 5. Solve problems involving perimeters of polygons.
  - a. Add given side lengths, and multiply for the case of equal side lengths.
  - b. \*Find an unknown length of a side in a polygon given the perimeter and all other side lengths; represent these problems with equations involving a letter for the unknown quantity.
  - c. Exhibit rectangles with the same perimeter and different area, and with the same area and different perimeter.

3-NF

3-MD

#### Representing and interpreting data

- 6. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *Include single-unit scales and multiple-unit scales; for example, each square in the bar graph might represent 1 pet, 5 pets, or 10 pets.*
- 7. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a <u>dot plot</u>, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.

#### Geometry

3-G

#### Properties of 2-dimensional shapes

- 1. Understand that a given category of plane figures (e.g., triangles) has subcategories (e.g., isosceles triangles) defined by special properties.
- 2. Describe, analyze, compare and classify two-dimensional shapes by their properties and connect these properties to the classification of shapes into categories and subcategories (e.g., squares are "special rectangles" as well as "special rhombuses"). *Focus on triangles and quadrilaterals*.

#### Structuring rectangular shapes

- 3. Understand that rectangular regions can be tiled with squares in rows and columns, or decomposed into such arrays.
- 4. Structure a rectangular region spatially by decomposing it into rows and columns of squares. Determine the number of squares in the region using that spatial structure (e.g., by multiplication or skip counting).
- 5. Understand that shapes can be decomposed into parts with equal areas; the area of each part is a unit fraction of the whole. *For example, when a shape is partitioned into 4 parts with equal area, the area of each part is 1/4 of the area of the shape.*

## Mathematics | Grade 4

In Grade 4, instructional time should focus on four critical areas: (1) continuing to develop understanding and fluency with whole number multiplication, and developing understanding of multi-digit whole number division; (2) developing an understanding of addition and subtraction of fractions with like denominators, multiplication of fractions by whole numbers, and division of whole numbers with fractional answers; (3) developing an understanding of area; and (4) understanding that geometric figures can be analyzed and classified using properties such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.

(1) Students use understandings of multiplication to develop fluency with multiplication and division within 100. They apply their understanding of models for multiplication (equal-sized groups, arrays, area models, equal intervals on a number line), place value, and properties of operations, in particular the distributive property, as they develop, discuss, and use efficient, accurate, and generalizable methods to compute products of multi-digit whole numbers. Depending on the numbers and the context, they select and accurately apply appropriate methods to estimate products or mentally calculate products. They develop fluency with efficient procedures, including the standard algorithm, for multiplying whole numbers; understand and explain why the procedures work based on place value and properties of operations, and the relationship of division to multiplication as they develop, discuss, and use efficient, accurate, and generalizable procedures to find quotients involving multi-digit dividends. They select and accurately apply appropriate methods.

(2) Students develop understanding of operations with fractions. They apply their understandings of fractions as built from unit fractions, and use fraction models to represent the addition and subtraction of fractions with like denominators. Students use the meaning of fractions and the meaning of multiplication to understand and explain why the procedure for multiplying a fraction by a whole number makes sense. They understand and explain the connection between division and fractions.

(3) Students develop their understanding of area. They understand and apply the area formula for rectangles and also find areas of shapes that can be decomposed into rectangles. They select appropriate units, strategies (e.g., decomposing shapes), and tools for solving problems that involve estimating and measuring area.

(4) Students describe, analyze, compare, and classify two-dimensional shapes. Through building, drawing, and analyzing two-dimensional shapes, students deepen their understanding of properties of two-dimensional objects and the use of them to solve problems involving symmetry.

#### Number–Operations and the Problems They Solve

#### Multiplication and division

1. Find the factor pairs for a given whole number less than or equal to 100; recognize prime numbers as numbers greater than 1 with exactly one factor pair. *Example: The factor pairs of 42 are {42, 1}, {21, 2}, {14, 3}, {7, 6}.* 

#### Problem solving with the four operations

- 2. \*Solve multistep word problems involving the four operations with whole numbers.
- 3. \*Solve problems posed with both whole numbers and fractions. Understand that while quantities in a problem might be described with whole numbers, fractions, or decimals, the operations used to solve the problem depend on the relationships between the quantities regardless of which number representations are involved.
- 4. Assess the reasonableness of answers using mental computation and estimation strategies including rounding to the nearest 10 or 100.

#### Number-Base Ten

#### Numbers up to 100,000

- 1. Understand that a digit in one place represents ten times what it represents in the place to its right. For example, 7 in the thousands place represents 10 times as many as than 7 in the hundreds place.
- 2. Read, write and compare numbers to 100,000 using base-ten notation, number names, and expanded form.

#### Multiplying and dividing in base ten

- 3. Understand how the <u>distributive property</u> and the expanded form of a multi-digit number can be used to calculate products of multi-digit numbers.
  - a. \*The product of a one-digit number times a multi-digit number is the sum of the products of the one-digit number with the summands in the <u>expanded form</u> of the multi-digit number. Illustrate this numerically and visually using equations, rectangular arrays, area models, and <u>tape diagrams</u>.
  - b. Algorithms for multi-digit multiplication can be derived and explained by writing multi-digit numbers in expanded form and applying the distributive property.
- 4. Fluently <u>multiply and divide within 100</u>. By end of Grade 4, know from memory products of one-digit numbers where one of the factors is 6, 7, 8, or 9.
- 5. Mentally calculate products of one-digit numbers and one-digit multiples of 10, 100, and 1000 (e.g., 7 × 6000). Mentally calculate whole number quotients with divisors of 10 and 100.
- 6. Compute products and whole number quotients of two-, three- or four-digit numbers and one-digit numbers, and compute products of two two-digit numbers, using strategies based on place value, the properties of operations, and/or the inverse relationship between multiplication and division; explain the reasoning used.
- 7. Explain why multiplication and division strategies and algorithms work, using place value and the properties of operations. *Include explanations supported by drawings, equations, or both. A range of reasonably efficient algorithms may be covered, not only the standard algorithms.*
- 8. Compute products of two-digit numbers using the standard algorithm, and check the result using estimation.
- 9. Given two whole numbers, find an equation displaying the largest multiple of one which is less than or equal to the other. For example, given 325 and 7, the equation  $325 = 46 \times 7 + 3$  shows the largest multiple of 7 less than or equal to 325.

#### Number-Fractions

#### **Operations on fractions**

- 1. Understand addition of fractions:
  - a. Adding or subtracting fractions with the same denominator means adding or subtracting copies of <u>unit fractions</u>. For example, 2/3 + 4/3 is 2 copies of 1/3 plus 4 copies of 1/3, or 6 copies of 1/3 in all, that is 6/3.
  - b. Sums of <u>related fractions</u> can be computed by replacing one with an <u>equivalent fraction</u> that has the same denominator as the other. For example, the sum of the related fractions 2/3 and 1/6 can be computed by rewriting 2/3 as 4/6 and computing 4/6 + 1/6 = 5/6.
- 2. Compute sums and differences of fractions with like denominators, add and subtract related fractions within 1 (e.g., 1/2 + 1/4, 3/10 + 4/100, 7/8 1/4), and solve word problems involving these operations.
- 3. \* Understand that the meaning of multiplying a fraction by a whole number comes from interpreting multiplication by a whole number as repeated addition. *For example,*  $3 \times 2/5 = 6/5$  *because*  $3 \times 2/5 = 2/5 + 2/5 + 2/5 = 6/5$ .

4-NBT

- 4. Solve word problems that involve multiplication of fractions by whole numbers; represent multiplication of fractions by whole numbers using <u>tape diagrams</u> and area models that explain numerical results.
- 5. \*Understand that fractions give meaning to the quotient of any whole number by any non-zero whole number. For example,  $3 \div 4 = 3/4$ , because 3/4 multiplied by 4 equals 3. (The division  $3 \div 4$  means the number which yields 3 when multiplied by 4.)
- 6. Solve word problems that involve non-whole number quotients of whole numbers; represent quotients of whole numbers using tape diagrams and area models that explain numerical results.

#### Decimal concepts

- 7. Understand that a two-digit decimal is a sum of fractions with denominators 10 and 100. For example, 0.34 is 3/10 + 4/100.
- 8. Use decimals to hundredths to describe parts of wholes; compare and order decimals to hundredths based on meanings of the digits; and write fractions of the form a/10 or a/100 in decimal notation. Use > and < symbols to record the results of comparisons.

#### Measurement and Data

#### 4-MD

#### The number line and units of measure

 Understand that the unit length on a number line (interval from 0 to 1) can be divided into parts of equal fractional length. Draw number line representations of problem situations involving length, height, and distance including fractional or decimal units. For example, show distances along a race course to tenths of a mile on a number line, by dividing the unit length into 10 equal parts to get parts of length 1/10; the endpoint of the segment of 1/10 length from 0 represents 1/10 of a mile from the starting point of the race. In Grade 4, all numbers lines begin with zero.

#### Perimeter and area

- 2. Understand that if a region is decomposed into several disjoint pieces, then the area of the region can be found by adding the areas of the pieces (when these areas are expressed in the same units).
- 3. \*Apply the formulas for area of squares and rectangles. Measure and compute whole-square-unit areas of objects and regions enclosed by geometric figures which can be decomposed into rectangles. *Limit to situations requiring products of one-or two-digit numbers.*
- 4. \*Find one dimension of a rectangle, given the other dimension and the area or perimeter; find the length of one side of a square, given the area or perimeter. Represent these problems using equations involving a letter for the unknown quantity.

#### Angle measurement

- 5. Understand what an angle is and how it is measured:
  - a. An angle is formed by two rays with a common endpoint.
  - b. An angle is measured by reference to a circle with its center at the common endpoint of the rays. The measure of an angle is based on the fraction of the circle between the points where the two rays intersect the circle.
  - c. A one-degree angle turns through 1/360 of a circle, where the circle is centered at the common endpoint of its rays; the measure of a given angle is the number of one-degree angles turned with no gaps or overlaps.
- 6. Measure angles in whole-number degrees using a protractor; sketch angles of specified measure; \*find the measure of a missing part of an angle, given the measure of the angle and the measure of a part of it, representing these problems with equations involving a letter for the unknown quantity.

#### Representing and interpreting data

7. Make a <u>dot plot</u> to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in dot plots. *For example, from a dot plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.* 

#### Geometry

#### 4-G

#### Lines and angles

- 1. Draw points, lines, line segments, rays, angles, and perpendicular and parallel lines; identify these in plane figures.
- 2. Identify right angles, and angles smaller than or greater than a right angle in geometric figures; recognize right triangles.
- 3. Classify shapes based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of specified size.

#### Line symmetry

4. Understand that a line of symmetry for a geometric figure is a line across the figure such that the figure can be folded along the line into matching parts

5. Identify line-symmetric figures; given a horizontal or vertical line and a drawing that is not a closed figure, complete the drawing to create a figure that is symmetric with respect to the given line.

## Mathematics | Grade 5

In Grade 5, instructional time should focus on four critical areas: (1) developing fluency with addition and subtraction of fractions, developing understanding of the multiplication of fractions and of division of fractions in limited cases (fractions divided by whole numbers and whole numbers divided by unit fractions); (2) developing understanding of and fluency with division of multi-digit whole numbers; (3) developing understanding of and fluency with addition, subtraction, multiplication, and division of decimals; and (4) developing understanding of volume.

(1) Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them. Students also use the meaning of fractions, of multiplication and division, and the inverse relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing fractions by whole numbers and whole numbers by unit fractions.)

(2) Students develop fluency with division of whole numbers; understand why procedures work based on the meaning of base-ten notation and properties of operations; and use these procedures to solve problems. Based on the context of a problem situation, they select the most useful form of the quotient for the answer and interpret it appropriately.

(3) Students apply their understandings of models for decimals, decimal notation, and properties of operations to compute sums and differences of finite decimals. They develop fluency in these computations, and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of finite decimals efficiently and accurately.

(4) Students recognize volume as an attribute of three-dimensional space. They understand that volume can be quantified by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to determine volumes to solve problems.

#### Number–Base Ten

5-NF

#### Whole numbers in base ten

- 1. Compute quotients of two-, three-, and four-digit whole numbers and two-digit whole numbers using strategies based on place value, the properties of operations, and/or the inverse relationship between multiplication and division; explain the reasoning used.
- 2. Explain why division strategies and algorithms work, using place value and the properties of operations. *Include explanations* supported by drawings, equations, or both. A range of reasonably efficient algorithms may be covered, not only the standard algorithm.
- 3. Use the standard algorithm to compute quotients of two-, three- and four-digit whole numbers and two-digit whole numbers, expressing the results as an equation (e.g.,  $145 = 11 \times 13 + 2$  or  $120 \div 7 = 17 1/7$ ).
- 4. Fluently add, subtract and multiply whole numbers using the standard algorithm for each operation.

#### Decimal concepts

- 5. Read, write, and compare numbers expressed as decimals. Understand that a digit in one place represents ten times what it represents in the place to its right. *For example, 7 in the hundredths place represents 10 times as many as 7 in the thousandths place.*
- 6. Round decimals (to hundredths) to the nearest whole number.
- 7. Write fractions in decimal notation for fractions with denominators 2, 4, 5, 8, 10, and 100.

#### Operations on decimals

- 8. Understand that in adding or subtracting finite decimals, one adds or subtracts like units (tenths and tenths, hundredths and hundredths, etc.) and sometimes it is necessary to compose or decompose a higher value unit.
- 9. Fluently find 0.1 more than a number and less than a number; 0.01 more than a number and less than a number; and 0.001 more than a number and less than a number, for numbers expressed as finite decimals.
- 10. Compute sums and differences of finite decimals by expressing the decimals as fractions and adding the fractions. For example, 0.05 + 0.91 = 5/100 + 91/100 = 96/100 or 0.96.
- 11. Compute sums, differences, products, and quotients of finite decimals using strategies based on place value, the properties of operations, and/or the inverse relationships between addition and subtraction and between multiplication and division; explain the reasoning used. *For example, transform*  $1.5 \div 0.3$  *into*  $15 \div 3 = 5$ .
- 12. Explain why strategies and algorithms for computations with finite decimals work. *Include explanations supported by drawings, equations, or both. A range of reasonably efficient algorithms may be covered, not only the standard algorithm.*
- 13. Use the standard algorithm for each of the four operations on decimals (to hundredths).
- 14. Solve word problems involving operations on decimals.

#### Number-Fractions

#### Fraction equivalence

- 1. \*Understand fraction equivalence:
  - a. Multiplying the numerator and denominator of a fraction by the same nonzero whole number produces an <u>equivalent</u> fraction. For example,  $2/3 = (2 \times 4)/(3 \times 4) = 8/12$ . (1/3 is 4 copies of 1/12, so 2/3 is 8 copies of 1/12.)
  - b. Equivalent fractions correspond to the same point on a number line. In Grade 5, all numbers lines begin with zero.
  - c. When the numerators of equivalent fractions are divided by their denominators, the resulting quotients are the same.
- 2. Identify pairs of equivalent fractions; given two fractions with unlike denominators, find two fractions with the same denominator and equivalent to each.
- 3. Compare and order fractions with like or unlike denominators, e.g., by finding equivalent fractions with the same denominator, and describe the sizes of fractional quantities from a context with reference to the context. *Compare using the fractions themselves, tape diagrams or number line representations, and area models.*

#### **Operations on fractions**

- 4. Understand that sums and differences of fractions with unlike denominators can be computed by replacing each with an equivalent fraction so that the resulting fractions have the same denominator. For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12.
- 5. Compute sums and differences of fractions with like or unlike denominators, and solve word problems involving addition and subtraction of fractions. Estimate fraction sums and differences to assess the reasonableness of results.
- 6. Understand that multiplying a fraction by a/b means taking *a* parts of a decomposition of the fraction into *b* equal parts. For example, to multiply  $2/3 \times 4/5 = 8/15$ , one may decompose *a* whole of size 4/5 into 3 equal parts; each part has size 4/15. Two

of these parts then make 8/15, so  $2/3 \times 4/5 = 8/15$ . (In general,  $a/b \times p/q = ap/bq$ .) This standard includes multiplication of a whole number by a fraction, by writing the whole number as fraction with denominator 1.

- 7. Understand that the area of a rectangle with side lengths a/b and c/d is the product  $a/b \times p/q$ . This extends the area formula for rectangles to fractional side lengths, and also allows products of fractions to be represented visually as areas of rectangles.
- 8. \*Explain and justify the properties of operations with fractions, e.g., by using equations, number line representations, area models, and story contexts.
- 9. Understand division of unit fractions by whole numbers and division of whole numbers by unit fractions:
  - a. Dividing a unit fraction 1/b by a whole number a results in a smaller unit fraction  $1/a \times b$ . For example,  $1/3 \div 2 = 1/6$  because when 1/3 is divided into 2 equal parts, the size of each part is 1/6; a third of a pound of cheese shared between two people will give each person a sixth of a pound. (Using the inverse relationship between multiplication and division:  $1/3 \div 2 = 1/6$  because  $1/6 \times 2 = 1/3$ .)
  - b. Dividing a whole number a by a unit fraction 1/b results in a greater whole number  $a \times b$ . For example,  $2 \div 1/3 = 6$  because 6 is the number of 1/3s in 2; two pounds of cheese will make six portions of a third of a pound each. (Using the inverse relationship between multiplication and division:  $2 \div 1/3 = 6$  because  $6 \times 1/3 = 2$ .)
- 10. Calculate products of fractions, and quotients of unit fractions and nonzero whole numbers (with either as divisor), and solve word problems involving these operations. Represent these operations using equations, area models and length models.
- 11. Understand that a mixed number such as 3 2/5 represents the sum of a whole number and a fraction less than one. Because a whole number can be represented as a fraction (3 = 3/1), and the sum of two fractions is also a fraction, a mixed number also represents a fraction (3 2/5 = 3 + 2/5 = 15/5 + 2/5 = 17/5). Write fractions as equivalent mixed numbers and vice versa.

#### Measurement and Data

5-MD

#### Units of measure

- 1. Understand that quantities expressed in like units can be added or subtracted giving a sum or difference with the same unit; different quantities may be multiplied to obtain a new kind of quantity (e.g., as when two lengths are multiplied to compute an area, or when an area and a length are multiplied to compute a volume).
- 2. Understand that when measuring a quantity, if a smaller unit is used, more units must be iterated to measure the quantity in those units.
- 3. Convert among different-sized standard measurement units within a given measurement system (e.g., feet to yards, centimeters to meters) and use conversion in solving multi-step word problems.

#### Volume

- 4. Understand concepts of volume measurement:
  - a. A cube with side length 1 unit (a unit cube) is said to have "one cubic unit" of volume, and can be used to measure volume.
  - b. The volume of a right rectangular prism with whole-unit side lengths can be found by packing it with unit cubes and using multiplication to count their number. For example, decomposing a right rectangular prism 3 length units wide by 5 units deep by 2 units tall shows that its volume is  $3 \times 5 \times 2$  cubic units. The base of the prism has area  $3 \times 5$  square units, so the volume can also be expressed as the height times the area of the base.
  - c. When measuring a volume, if a smaller unit is used, more units must be iterated to measure the volume in those units.
  - d. If a solid figure is decomposed into several disjoint pieces, then the volume enclosed by the figure can be found by adding the volumes of the pieces (when these volumes are expressed in the same units).
- 5. Decompose right rectangular prisms into layers of arrays of cubes; determine and compare volumes of right rectangular prisms, and objects well described as right rectangular prisms, by counting cubic units (using cm<sup>3</sup>, m<sup>3</sup>, in<sup>3</sup>, ft<sup>3</sup>, and improvised units).

#### Representing and interpreting data

6. Make a <u>dot plot</u> to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in dot plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.* 

#### Geometry

#### Coordinates

- 1. Understand that a pair of perpendicular number lines, called axes, defines a coordinate system.
  - a. Their intersection is called the origin, usually arranged to coincide with the  $0 \mbox{ on each line.}$
  - b. A given point in the plane can be located by using an ordered pair of numbers, called its coordinates. The first number indicates how far to travel from the origin in the direction of one axis, the second number indicates how far to travel in the direction of the second axis.
  - c. To avoid ambiguity, conventions dictate that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).
- 2. Graph points in the first quadrant of the coordinate plane, and identify the coordinates of graphed points. Where ordered pairs arise in a problem situation, interpret the coordinate values in the context of the situation.

## Plane figures

- 3. Understand that properties belonging to a category of plane figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
- 4. Classify plane figures in a hierarchy based on properties.
## Mathematics | Grade 6

In Grade 6, instructional time should focus on four critical areas: (1) connecting ratio and rate to whole number multiplication and division; (2) developing understanding of and fluency with division of fractions and developing fluency with multiplication of fractions; (3) developing understanding of and using formulas to determine areas of two-dimensional shapes and distinguishing between volume and surface area of three-dimensional shapes; and (4) writing, interpreting, and using expressions and equations.

(1) Students use reasoning about multiplication and division with quantities to solve ratio and rate problems. By viewing equivalent ratios and rates as deriving from, and extending, pairs of rows (or columns) in the multiplication table, and by analyzing simple drawings that indicate the relative size of quantities, students extend whole number multiplication and division to ratios and rates. Thus students expand their repertoires of problems in which multiplication and division can be used to solve problems, and they build on their understanding of fractions to understand ratios. Students solve a wide variety of problems involving ratios and rates.

(2) Students use the meaning of fractions, the meanings of multiplication and division, and the inverse relationship between multiplication and division to understand and explain why the procedures for dividing fractions make sense. Students are able to add, subtract, multiply, and divide fractions fluently, and use these operations to solve problems, including multi-step problems and problems involving measurement.

(3) Students reason about relationships among shapes to determine area and surface area. They find areas of right triangles, other triangles, and special quadrilaterals by decomposing these shapes, rearranging or removing pieces, and relating the shapes to rectangles. Using these methods, students discuss, develop, and justify formulas for areas of triangles and parallelograms. Students find areas of polygons and surface areas of prisms and pyramids by decomposition into pieces whose area they can determine.

(4) Students write mathematical expressions and equations that correspond to given situations, they evaluate expressions, and they use expressions and formulas to solve problems. Students understand that a variable is a letter standing for a number, where the number is unknown, or where, for the purpose at hand, it can be any number in the domain of interest. Students understand that expressions in different forms can be equivalent, and they use the laws of arithmetic to rewrite expressions to represent a total quantity in a different way (such as to represent it more compactly or to feature different information). Students know that the solutions of an equation are the values of the variables that make the equation true. Students use properties of operations and the idea of maintaining the equality of both sides of an equation to solve simple one-step equations. Students construct and analyze tables, such as tables of quantities that are in equivalent ratios, and they use equations (such as 3x = y) to describe relationships in a table.

Having represented and analyzed data in Grades K–5, students in Grade 6 begin a serious engagement with statistics. The study of variability in data distinguishes statistics from mathematics. Students beginning their study of variability must first recognize statistical questions as those that anticipate variability in the answers. From this conceptual beginning, they learn to describe and summarize distributions of data—an activity that goes beyond merely computing summary statistics to include assessing the shape of a distribution and considering other issues as described in the standards.

#### **Ratios and Proportional Relationships**

#### Ratios

- 1. Understand the concept of a ratio: Two quantities are said to be in a ratio of *a* to *b* when for every *a* units of the first quantity there are *b* units of the second. For example, in a flock of birds, the ratio of wings to beaks might be 2 to 1; this ratio is also written 2:1. In Grade 6, limit to ratios of whole numbers.
- 2. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.
- 3. Solve for an unknown quantity in a problem involving two equal ratios.
- 4. Describe categorical data sets using ratios (e.g., for every vote candidate A received, candidate C received nearly three votes; the ratio of type O blood donors to type B blood donors was 9:2).

#### Unit rates

- 5. Understand that for a ratio *a*:*b*, the corresponding unit rate is a/b. If there are *a* units of the first quantity for every *b* units of the second, where  $b \neq 0$ , then there are a/b units of the first quantity for 1 unit of the second. For example, if a recipe has a ratio of 3 cups of flour to 4 cups of sugar, then there is 3/4 cup of flour for each cup of sugar.
- 6. \*Solve unit rate problems including unit pricing and constant speed, including reasoning with equations such as  $d = r \times t$ , r = d/t,  $t = d \div r$ .

#### The Number System

#### Operations

- 1. Understand that the properties of operations apply to, and can be used with, addition and multiplication of fractions.
- 2. Understand that division of fractions is defined by viewing a quotient as the solution for an unknown-factor multiplication problem. For example,  $(2/3) \div (5/7) = 14/15$  because  $(5/7) \times (14/15) = (2/3)$ .
- 3. Solve word problems requiring arithmetic with fractions, using the <u>properties of operations</u> and converting between forms as appropriate; estimate to check reasonableness of answers.
- 4. Fluently divide whole numbers using the standard algorithm.

#### The system of rational numbers

- 5. Understand that a number is a point on the number line.
- 6. Understand that some quantities have opposite directions, such as elevation above and below sea level or money received and spent. These quantities can be described using positive and negative numbers.
- 7. Understand that number lines familiar from previous grades can be extended to represent negative numbers to the left of zero. Number lines can also be vertically oriented, as when a coordinate system is formed. Then the conventional terms "to the right of 0" and "to the left of 0" conventionally become "above 0" and "below 0."
  - a. Two different numbers, such as 7 and -7, that are equidistant from zero on a number line are said to be opposites of one another. The opposite of the opposite of a number is the number itself, e.g., -(-3) = 3. The opposite of 0 is 0.
  - b. The absolute value of a number q, written |q|, is its distance from zero, and is always positive or zero.
  - c. Fractions and their opposites form a system of numbers called the rational numbers, represented by points on a number line. Whole numbers and their opposites form the <u>integers</u>, which are contained in the rational numbers.
  - d. Previous ways of comparing positive numbers can be extended to the rational numbers. The statement  $p \ge q$  means that p is located to the right of q on a number line, while p < q means that p is located to the left of q on a number line. Comparisons can also be made by reasoning appropriately about signed quantities (e.g.,  $-3 \ge -7$  makes sense because  $-3^{\circ}$ C is a higher temperature than  $-7^{\circ}$ C). The way two numbers compare does not always agree with the way their absolute values compare; for example,  $-3 \ge -7$ , but  $|-3| \le |-7|$ .
- 8. Find and position rational numbers, including integers, on a number line.
- 9. Use rational numbers to describe quantities such as elevation, temperature, account balance and so on. Compare these quantities, recording the results of comparisons using > and < symbols.
- 10. Graph points and identify coordinates of points on the coordinate plane in all four quadrants. Where ordered pairs arise in a problem situation, interpret the coordinate values in the context of the situation.

6-NS

#### **Expressions and Equations**

#### Expressions

- 1. Understand that an expression records operations with numbers or with letters standing for numbers. For example, the expression  $2 \cdot (8 + 7)$  records adding 8 and 7 then multiplying by 2; the expression 5 y records subtracting y from 5. Focus on the operations of addition, subtraction, multiplication and division, with some attention to square or cube roots.
- 2. Understand the use of variables in expressions and algebraic conventions:
  - a. A letter is used to stand for a number in an expression in cases where the number is unknown, or where, for the purpose at hand, it can be any number in a domain of interest. Such a letter is called a variable.
  - b. If a variable appears in an expression more than once (e.g., as in t + 3t), that variable is understood to refer to the same number in each instance.
  - c. The multiplication symbol can be omitted when writing products of two or more variables or of a number and a variable. *For example, the expressions xy and 2a indicate x \times y and 2 \times a, respectively.*
- 3. Describe the structure and elements of simple expressions using correct terminology (sum, term, product, factor, quotient, coefficient); describe an expression by viewing one or more of its parts as a single entity. For example, describe the expression  $2 \cdot (8 + 7)$  as a product of two factors, by viewing (8 + 7) as a single entity. The second factor is itself a sum of two terms.
- 4. Understand and generate equivalent expressions:
  - a. Understand that two expressions are equivalent if they name the same number regardless of which numbers the variables in them stand for. For example, the expressions x + 3 and 4x are not equivalent, even though they happen to name the same number in the case when x stands for 1.
  - b. Understand that applying the laws of arithmetic to an expression results in an equivalent expression. For example, applying the <u>distributive law</u> to the expression  $3 \cdot (2 + x)$  leads to the equivalent expression 6 + 3x. Applying the distributive law to y + y + y leads to the equivalent expression  $y \times (1 + 1 + 1)$ , i.e.,  $y \times 3$  and then the <u>commutative law of multiplication</u> leads to the equivalent expression 3y.
  - c. Generate equivalent expressions to reinterpret the meaning of an expression. For example, 2t + 3t records the addition of twice a quantity to three times itself; applying the <u>distributive law</u> leads to the equivalent expression 5t, so that the original expression can be reinterpreted as recording five times the quantity.

#### Quantitative relationships and the algebraic approach to problems

- 5. Understand that an equation is a statement that two expressions are equal, and a solution to an equation is a replacement value of the variable (or replacement values for all the variables if there is more than one) that makes the equation true.
- 6. Using the idea of maintaining equality between both sides of the equation, solve equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.
- 7. Choose variables to represent quantities in a word problem, and construct simple expressions or equations to solve the problem by reasoning about the quantities.
- 8. Understand that a variable can be used to represent a quantity that can change, often in relationship to another changing quantity, and an equation can express one quantity, thought of as the dependent variable, in terms of other quantities, thought of as the independent variables; represent a relationship between two quantities using equations, graphs, and tables; translate between any two of these representations. For example, describe the terms in a sequence t = 3, 6, 9, 12, ... of multiples of 3 by writing the equation t = 3n for n = 1, 2, 3, 4, ...

#### Geometry

#### 6-G

#### Properties of area, surface area, and volume

- 1. Understand that plane figures can be decomposed, reassembled, and completed into new figures; use this technique to derive area formulas.
- 2. Find the areas enclosed by right triangles, other triangles, special quadrilaterals, and polygons (by composing into rectangles or decomposing into triangles and other shapes).
- 3. Understand that three-dimensional figures can be formed by joining rectangles and triangles along their edges to enclose a solid region with no gaps or overlaps. The surface area is the sum of the areas of the enclosing rectangles and triangles.
- 4. Find the surface area of cubes, prisms and pyramids (include the use of nets to represent these figures).
- 5. Solve problems involving area, volume and surface area of objects.
- 6. Give examples of right rectangular prisms with the same surface area and different volumes, and with the same volume and different surface areas.

7. \*Use exponents and symbols for square roots and cube roots to express the area of a square and volume of a cube in terms of their side lengths, and to express their side lengths in terms of their area or volume.

#### Statistics and Probability

#### Variability and measures of center

- 1. Understand that a statistical question is one that anticipates variability in the data related to the question and accounts for it in the answers. For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.
- 2. Understand that a set of data generated by answers to a statistical question typically shows variability—not all of the values are the same—and yet often the values show an overall pattern, often with a tendency to cluster.
  - a. A measure of center for a numerical data set summarizes all of its values using a single number. The <u>median</u> is a measure of center in the sense that approximately half the data values are less than the median, while approximately half are greater. The <u>mean</u> is a measure of center in the sense that it is the value that each data point would take on if the total of the data values were redistributed fairly, and in the sense that it is the balance point of a data distribution shown on a dot plot.
  - b. A measure of variation for a numerical data set describes how its values vary using a single number. The <u>interquartile</u> range and the <u>mean absolute deviation</u> are both measures of variation.

#### Summarizing and describing distributions

- 3. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
- 4. Summarize numerical data sets, such as by:
  - a. Reporting the number of observations.
  - b. Describing the nature of the variable, including how it was measured and its units of measurement. *Data sets can include fractional values at this grade but not negative values*.
  - c. Describing center and variation, as well as describing any overall pattern and any striking deviations from the overall pattern.
- 5. Relate the choice of the median or mean as a measure of center to the shape of the data distribution being described and the context in which it is being used. Do the same for the choice of interquartile range or mean average deviation as a measure of variation. *For example, why are housing prices often summarized by reporting the median selling price, while students' assigned grades are often based on mean homework scores?*

6-SP

## Mathematics | Grade 7

In Grade 7, instructional time should focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and solving linear equations; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence; and (4) drawing inferences about populations based on samples.

(1) Students extend their understanding of ratios and develop understanding of proportionality to solve single- and multi-step problems. Students use their understanding of ratios and proportionality to solve a wide variety of percent problems, including those involving discounts, interest, taxes, tips, and percent increase or decrease. Students solve problems about similar objects (including geometric figures) by using scale factors that relate corresponding lengths between the objects or by using the fact that relationships of lengths within an object are preserved in similar objects. Students graph proportional relationships and understand the unit rate informally as a measure of the steepness of the related line, called the slope. They distinguish proportional relationships from other relationships.

(2) Students develop a unified understanding of number, recognizing fractions, decimals, and percents as different representations of rational numbers. Students extend addition, subtraction, multiplication, and division and their properties to all rational numbers, including integers and numbers represented by complex fractions and negative fractions. By applying the laws of arithmetic, and by viewing negative numbers in terms of everyday contexts (e.g., amounts owed or temperatures below zero), students explain why the rules for adding, subtracting, multiplying, and dividing with negative numbers make sense. They use the arithmetic of rational numbers as they formulate and solve linear equations in one variable and use these equations to solve problems.

(3) Students use ideas about distance and angles, how they behave under dilations, translations, rotations and reflections, and ideas about congruence and similarity to describe and analyze figures and situations in two- and threedimensional space and to solve problems, including multi-step problems. Students prove that various configurations of lines give rise to similar triangles because of the angles created when a transversal cuts parallel lines. Students apply this reasoning about similar triangles to solve problems, such as finding heights and distances. Students see the plausibility of the formulas for the circumference and area of a circle. For example, in the case of area, they may do so by reasoning about how lengths and areas scale in similar figures or by decomposing a circle or circular region and rearranging the pieces.

(4) Students build on their previous work with single data distributions to compare two data distributions and address questions about differences between populations. They begin informal work with random sampling to generate data sets and learn about the importance of representative samples for drawing inferences.

#### **Ratios and Proportional Relationships**

#### Analyzing proportional relationships

- 1. Form ratios of nonnegative <u>rational numbers</u> and compute corresponding unit rates. For example, a person might walk <sup>1</sup>/<sub>2</sub> mile in each <sup>1</sup>/<sub>4</sub> hour; the unit rate for this ratio is (1/2)/(1/4) miles per hour, equivalently 2 miles per hour. Include ratios of lengths, areas and other quantities, including when quantities being compared are measured in different units.
- 2. Recognize situations in which two quantities covary and have a constant ratio. (The quantities are then said to be in a proportional relationship and the unit rate is called the constant of proportionality.) Decide whether two quantities that covary are in a proportional relationship, e.g., by testing for equivalent ratios or graphing on a coordinate plane.
- 3. Compute unit rates and solve proportional relationship problems in everyday contexts, such as shopping, cooking, carpentry, party planning, etc. Represent proportional relationships by equations that express how the quantities are related via the constant of proportionality or unit rate. *For example, total cost, t, is proportional to the number, n, purchased at a constant price, p; this relationship can be expressed as t = pn.*
- 4. Plot proportional relationships on a coordinate plane where each axis represents one of the two quantities involved, observe that the graph is a straight line through the origin, and find unit rates from a graph. Explain what a point (x, y) means in terms of the situation, with special attention to the points (0, 0) and (1, r) where *r* is the unit rate.
- 5. Compare tables, graphs, formulas, diagrams, and verbal descriptions that represent or partially represent proportional relationships; explain correspondences among the representations including how the unit rate is shown in each.

#### Percent

- 6. Understand that percentages are rates per 100. For example, 30% of a quantity means 30/100 times the quantity. A percentage can be a <u>complex fraction</u>, as in 3.75% = 3.75/100.
- 7. Find a percentage of a quantity; solve problems involving finding the whole given a part and the percentage.
- 8. Solve multistep percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error, expressing monthly rent as a percentage of take-home pay.

#### The Number System

#### The system of rational numbers

- 1. Understand that the rules for manipulating fractions extend to complex fractions.
- 2. Understand and perform addition and subtraction with rational numbers:
  - a. Understand that on a number line, the sum p + q is the number located a distance |q| from p, to the right of p if q is positive and to the left of p if q is negative. A number and its opposite are <u>additive inverses</u> (i.e., their sum is zero).
  - b. Compute sums of signed numbers using the laws of arithmetic. For example, 7 + (-3) = 4 because 7 + (-3) = (4 + 3) + (-3) = 4 + [3 + (-3)] = 4 + [0] = 4.
  - c. Understand that subtraction of rational numbers is defined by viewing a difference as the solution of an unknownaddend addition problem. Subtraction of a rational number gives the same answer as adding its additive inverse.
  - d. Explain and justify rules for adding and subtracting rational numbers, using a number line and practical contexts. For example, relate r + (-s) = r s to a bank transaction; explain why p (q + r) = p q r.
  - e. Understand that the additive inverse of a sum is the sum of the additive inverses, that is -(p + q) = -p + -q. For example, -(6 + -2) = (-6) + 2 because [6 + (-2)] + [(-6) + 2] = [6 + (-6)] + [(-2) + 2] = [0] + [0] = 0.
- 3. Understand and perform multiplication and division with rational numbers:
  - a. Understand that the extension of multiplication from fractions to rational numbers is determined by the requirement that multiplication and addition satisfy the laws of arithmetic, particularly the <u>distributive law</u>, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers.
  - b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p/q is a rational number, then -(p/q) = (-p)/q = p/(-q).
  - c. Calculate products and quotients of rational numbers, and use multiplication and division to solve word problems. *Include signed quantities.*

#### The system of real numbers

4. Understand that there are numbers that are not rational numbers, called <u>irrational numbers</u>, e.g.,  $\pi$  and  $\sqrt{2}$ . Together the rational and irrational numbers form the real number system. In school mathematics, the real numbers are assumed to satisfy the laws of arithmetic.

#### **Expressions and Equations**

7-EE

7-NS

#### Expressions

- 1. Interpret numerical expressions at a level necessary to calculate their value using a calculator or spreadsheet. For expressions with variables, use and interpret conventions of algebraic notation, such as y/2 is  $y \div 2$  or  $1/2 \times y$ ;  $(3 \pm y)/5$  is  $(3 \pm y) \div 5$  or  $1/5 \times (3 \pm y)$ ;  $a^2$  is  $a \times a$ ,  $a^3$  is  $a \times a \times a$ ,  $a^2b$  is  $a \times a \times b$ .
- 2. Generate equivalent expressions from a given expression using the laws of arithmetic and conventions of algebraic notation. Include:
  - a. Adding and subtracting linear expressions, as in (2x + 3) + x + (2 x) = 2x + 5.
  - b. Factoring, as in 4x + 4y = 4(x + y) or 5x + 7x + 10y + 14y = 12x + 24y = 12(x + 2y).
  - c. Simplifying, as in -2(3x-5) + 4x = 10 2x or x/3 + (x-2)/4 = 7x/12 1/2.

#### Quantitative relationships and the algebraic approach to problems

- 3. Choose variables to represent quantities in a word problem, and construct simple equations to solve the problem by reasoning about the quantities.
  - a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are nonnegative rational numbers and the solution is a nonnegative rational number. Fluently solve equations of these forms, e.g., by undoing the operations involved in producing the expression on the left.
  - b. Solve the same word problem arithmetically and algebraically. For example, "J. has 4 packages of balloons and 5 single balloons. In all, he has 21 balloons. How many balloons are in a package?" Solve this problem arithmetically (using a sequence of operations on the given numbers), and also solve it by using a variable to stand for the number of balloons in a package, constructing an equation such as 4b + 5 = 21 to describe the situation then solving the equation.
  - c. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, P + 0.05P = 1.05P means that "increase by 5%" is the same as "multiply by 1.05."

#### Geometry

#### Congruence and similarity

- 1. Verify experimentally the fact that a rigid motion (a sequence of rotations, reflections, and translations) preserves distance and angle, e.g., by using physical models, transparencies, or dynamic geometry software:
  - a. Lines are taken to lines, and line segments to line segments of the same length.
  - b. Angles are taken to angles of the same measure.
  - c. Parallel lines are taken to parallel lines.
- 2. Understand the meaning of congruence: a plane figure is congruent to another if the second can be obtained from the first by a rigid motion.
- 3. Verify experimentally that a dilation with scale factor *k* preserves lines and angle measure, but takes a line segment of length *L* to a line segment of length *kL*.
- 4. Understand the meaning of similarity: a plane figure is similar to another if the second can be obtained from the first by a similarity transformation (a rigid motion followed by a dilation).
- 5. Solve problems involving similar figures and scale drawings. Include computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
- 6. Use informal arguments involving approximation by lines, squares, and cubes to see that a similarity transformation with a scale factor of k leaves angle measures unchanged, changes lengths by a factor of k, changes areas by a factor of  $k^2$ , and changes volumes by a factor of  $k^3$ .
- 7. Know the formulas relating the area, radius and circumference of a circle and solve problems requiring the use of these formulas; give an informal derivation of the relationship between the circumference and area of a circle.

#### Angles

- 8. Justify facts about the angle sum of triangles, exterior angles, and alternate interior angles created when parallel lines are cut by a transversal, e.g., by using physical models, transparencies, or dynamic geometry software to make rigid motions and give informal arguments. For example, arrange three copies of the same triangle so that the three angles appear to form a line, and give an argument in terms of transversals why this is so.
- 9. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

7-G

#### Statistics and Probability

#### Situations involving randomness

- 1. Simulate situations involving randomness using random numbers generated by a calculator or a spreadsheet or taken from a table. For example, if you quess at all ten true/false questions on a quiz, how likely are you to get at least seven answers correct?
- 2. Use proportional reasoning to predict relative frequencies of outcomes for situations involving randomness, but for which a theoretical answer can be determined. For example, when rolling a number cube 600 times, one would predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times. How far off might your prediction be? Use technology to generate multiple samples to approximate a distribution of sample proportions. Repeat the process for smaller sample sizes.

#### Random sampling to draw inferences about a population

- 3. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
- 4. Understand the importance of measures of variation in sample quantities (like means or proportions) in reasoning about how well a sample quantity estimates or predicts the corresponding population quantity.
- 5. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.

#### Comparative inferences about two populations

- 6. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean average deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.
- 7. Use measures of center and measures of variability for numerical data from uniform random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade book are generally longer than the words in a chapter of a sixth-grade book.

SDE

## Mathematics | Grade 8

In Grade 8, instructional time should focus on three critical areas: (1) solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) understanding and applying the Pythagorean Theorem.

(1) Students use linear equations, and systems of linear equations to represent, analyze, and solve a variety of problems. Students recognize proportions (y/x = m or y = mx) as a special case of linear equations, y = mx + b, understanding that the constant of proportionality (m) is the slope and the graphs are lines through the origin. They understand that the slope (m) of a line is a constant rate of change, so that if the input or *x*-coordinate changes by an amount *A*, the output or *y*-coordinate changes by the amount *mA*. Students also formulate and solve linear equations in one variable and use these equations to solve problems. Students also use a linear equation to describe the association between two quantities in a data set (such as arm span vs. height for students in a classroom). At this grade, fitting the model, and assessing its fit to the data are done informally. Interpreting the model in the context of the data requires students to express a relationship between the two quantities in question.

Students strategically choose and efficiently implement procedures to solve linear equations in one variable, understanding that when they use the properties of equality and the concept of logical equivalence, they maintain the solutions of the original equation. Students solve systems of two linear equations in two variables and relate the systems to pairs of lines in the plane; these intersect, are parallel, or are the same line. Students use linear equations, systems of linear equations, linear functions, and their understanding of slope of a line to analyze situations and solve problems.

(2) Students grasp the concept of a function as a rule that assigns to each element of its domain exactly one element of its range. They use function notation and understand that functions describe situations where one quantity determines another. They can translate among verbal, tabular, graphical, and algebraic representations of functions (noting that tabular and graphical representations are usually only partial representations), and they describe how aspects of the function are reflected in the different representations.

(3) Students understand the statement of the Pythagorean Theorem and its converse, and can explain why the Pythagorean Theorem is valid, for example, by decomposing a square in two different ways. They apply the Pythagorean Theorem to find distances between points on the coordinate plane, to find lengths, and to analyze polygons.

#### The Number System

#### The system of real numbers

- 1. Understand informally that every number on a number line has a decimal expansion, which can be found for rational numbers using long division. Rational numbers are those with repeating decimal expansions (this includes finite decimals which have an expansion that ends in a sequence of zeros).
- 2. Informally explain why  $\sqrt{2}$  is irrational.
- 3. Use rational approximations (including those obtained from truncating decimal expansions) to compare the size of irrational numbers, locate them approximately on a number line, and estimate the value of expressions (e.g.,  $\pi^2$ ). For example, show that the square root of 2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.

#### **Expressions and Equations**

8-EE

#### Linear equations in one variable

- 1. Understand that a linear equation in one variable might have one solution, infinitely many solutions, or no solutions. Which of these possibilities is the case can be determined by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where *a* and *b* are different numbers).
- 2. Solve linear equations with rational number coefficients, including equations that require expanding expressions using the distributive law and collecting like terms.

#### Linear equations in two variables

- 3. Understand that the slope of a non-vertical line in the coordinate plane has the same value for any two distinct points used to compute it. This can be seen using similar triangles.
- 4. Understand that two lines with well-defined slopes are parallel if and only if their slopes are equal.
- 5. Understand that the graph of a linear equation in two variables is a line, the set of pairs of numbers satisfying the equation. If the equation is in the form y = mx + b, the graph can be obtained by shifting the graph of y = mx by *b* units (upwards if *b* is positive, downwards if *b* is negative). The slope of the line is *m*.
- 6. Understand that a proportional relationship between two variable quantities y and x can be represented by the equation y = mx. The constant m is the unit rate, and tells how much of y per unit of x.
- 7. Graph proportional relationships and relationships defined by a linear equation; find the slope and interpret the slope in context.
- 8. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.

#### Systems of linear equations

- 9. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
- 10. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because the quantity 3x + 2y cannot simultaneously be 5 and 6.
- 11. Solve and explain word problems leading to two linear equations in two variables.
- 12. Solve problems involving lines and their equations. For example, decide whether a point with given coordinates lies on the line with a given equation; construct an equation for a line given two points on the line or one point and the slope; given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.

#### **Functions**

8-F

#### **Function concepts**

- 1. Understand that a function from one set (called the domain) to another set (called the range) is a rule that assigns to each element of the domain (an input) exactly one element of the range (the corresponding output). The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. *Function notation is not required in Grade 8*.
- 2. Evaluate expressions that define functions, and solve equations to find the input(s) that correspond to a given output.
- 3. Compare properties of two functions represented in different ways (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.

4. Understand that a function is linear if it can be expressed in the form y = mx + b or if its graph is a straight line. For example, the function  $y = x^2$  is not a linear function because its graph contains the points (1,1), (-1,1) and (0,0), which are not on a straight line.

#### Functional relationships between quantities

- 5. Understand that functions can describe situations where one quantity determines another.
- 6. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship; from two (x, y) values, including reading these from a table; or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
- 7. Describe qualitatively the functional relationship between two quantities by reading a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

#### Geometry

#### Congruence and similarity

- 1. Use coordinate grids to transform figures and to predict the effect of dilations, translations, rotations and reflections.
- 2. Explain using rigid motions the meaning of congruence for triangles as the equality of all pair of sides and all pairs of angles.
- 3. Give an informal explanation using rigid motions of the SAS and ASA criteria for triangle congruence, and use them to prove simple theorems.
- 4. Explain using similarity transformations the meaning of similarity for triangles as the equality of all pairs of angles and the proportionality of all pairs of sides.
- 5. Give an informal explanation using similarity transformations of the AA and SAS criteria for triangle similarity, and use them to prove simple theorems.

#### The Pythagorean Theorem

- 6. The side lengths of a right triangle are related by the Pythagorean Theorem. Conversely, if the side lengths of a triangle satisfy the Pythagorean Theorem, it is a right triangle.
- 7. Explain a proof of the Pythagorean Theorem and its converse.
- 8. Use the Pythagorean Theorem to determine unknown side lengths in right triangles and to solve problems in two and three dimensions.
- 9. Use the Pythagorean Theorem to find the distance between two points in a coordinate system.

#### Plane and solid geometry

- 10. Draw (freehand, with ruler and protractor, and with technology) geometric shapes from given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the triangle is uniquely defined, ambiguously defined or nonexistent.
- 11. Understand that slicing a three-dimensional figure with a plane produces a two-dimensional figure. Describe plane sections of right rectangular prisms and right rectangular pyramids.
- 12. Use hands-on activities to demonstrate and describe properties of: parallel lines in space, the line perpendicular to a given line through a given point, lines perpendicular to a given plane, lines parallel to a given plane, the plane or planes passing through three given points, and the plane perpendicular to a given line at a given point.

#### Statistics and Probability

#### 8-SP

8-G

#### Patterns of association in bivariate data

- 1. Understand that scatter plots for bivariate measurement data may reveal patterns of association between two quantities.
- 2. Construct and interpret scatter plots for bivariate measurement data. Describe patterns such as clustering, outliers, positive or negative association, linear association, nonlinear association.
- 3. Understand that a straight line is a widely used model for exploring relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
- 4. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.
- 5. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables

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APRIL 22, 2010 collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?

## Mathematics Standards for High School

#### Where is the College-and-Career-Readiness line drawn?

The high school standards specify the mathematics that all students should learn in order to be college and career ready. The high school standards also describe additional mathematics that students should learn to pursue careers and majors in science, technology, engineering and mathematics (STEM) fields. Other forms of advanced work are possible (for example in discrete mathematics or advanced statistics) and can be eventually added to the standards.

Standards beyond the college and career readiness level that are necessary for STEM careers are prefixed with a symbol STEM, as in this example:

STEM Graph complex numbers in polar form and interpret arithmetic operations on complex numbers geometrically.

Any standard without this tag is understood to be in the common core mathematics curriculum for all students.

#### How are the high school standards organized?

The high school standards are listed in conceptual categories, as shown in the Table below. **Appendix A (online) contains drafts of model course descriptions based on these standards**. Conceptual categories portray a coherent view of core high school mathematics; a student's work with Functions, for example, crosses a number of traditional course boundaries, potentially up through and including Calculus.

	Con	Conceptual Organization of the High School Standards		
		CCRS Draft September 17 <sup>th</sup> Number	High School Standards Draft March 10 Number and Quantity	
		Expressions Equations Coordinates	Algebra	
		Functions Geometry	Functions Geometry	
		Statistics Probability	Statistics and Probability	
	* Standards form	Modeling** rdinates now appear under other he	adings.	
** Making mathematical models is now a Standard for Mathematical Practice. Standards formerly appearing under Modeling are now distributed under other major headings. Hi school standards with relevance to modeling are flagged with a (★) symbol. A narrative description of modeling remains in the high school standards, but there are no specific standard statements in that narrative description.				

## Mathematics | High School-Number and Quantity

**Numbers and Number Systems.** During the years from kindergarten to eighth grade, students must repeatedly extend their conception of number. At first, "number" means "counting number": 1, 2, 3, ... Soon after that, 0 is used to represent "none" and the whole numbers are formed by the counting numbers together with zero. The next extension is fractions. At first, fractions are barely numbers and tied strongly to pictorial representations. Yet by the time students understand division of fractions, they have a strong concept of fractions as numbers and have connected them, via their decimal representations, with the base-ten system used to represent the whole numbers. During middle school, fractions are augmented by negative fractions to form the rational numbers. In Grade 7, students extend this system once more, augmenting the rational numbers with the irrational numbers to form the real numbers are augmented by the imaginary numbers to form the complex numbers.

Students sometimes have difficulty accepting new kinds of numbers when these differ in appearance and properties from those of a familiar system. For example, students might decide that complex numbers are not numbers because they are not written with numerical digits, or because they do not describe positive or negative quantities. Indeed, this ascent through number systems makes it fair to ask: what does the word *number* mean that it can mean all of these things? One possible answer is that a number is something that can be used to do mathematics: calculate, solve equations, or represent measurements. Historically, number systems have been extended when there is an intellectual or practical benefit in using the new numbers to solve previously insoluble problems.<sup>1</sup>

Although the referent of "number" changes, the four operations stay the same in important ways. The commutative, associative, and distributive laws extend the properties of operations to the integers, rational numbers, real numbers, and complex numbers. The inverse relationships between addition and subtraction, and multiplication and division are maintained in these larger systems.

Calculators are useful in this strand to generate data for numerical experiments, to help understand the workings of matrix, vector, and complex number algebra, and to experiment with non-integer exponents.

**Quantities.** In their work in measurement up through Grade 8, students primarily measure commonly used attributes such as length, area, volume, and so forth. In high school, students encounter novel situations in which they themselves must conceive the attributes of interest. Such a conceptual process might be called quantification. Quantification is important for science, as when surface area suddenly "stands out" as an important variable in evaporation. Quantification is also important for companies, who must conceptualize relevant attributes and create or choose suitable metrics by which to measure them.

## **Content Outline**

The Real Number System

#### Quantities

The Complex Number System Vector Quantities and Matrices

<sup>&</sup>lt;sup>1</sup> See Harel, G., "A Standpoint of Research on Middle/Higher Number and Quantity," a research review provided for the Common Core State Standards Initiative.

#### The Real Number System

N-O

N-CN

- 1. Understand that the laws of exponents for positive integer exponents follow from an understanding of exponents as indicating repeated multiplication, and from the associative law for multiplication.
- 2. Understand that the definition of the meaning of zero, positive rational, and negative exponents follows from extending the laws of exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, since  $(5^{1/3})^3 = 5^{(1/3)\cdot 3} = 5^1 = 5$ ,  $5^{1/3}$  is a cube root of 5.
- 3. Understand that sums and products of rational numbers are rational.
- 4. Understand that the sum of a rational number and an irrational number is irrational, and that the product of a nonzero rational number and an irrational number is irrational.
- 5. Rewrite expressions using the laws of exponents. For example,  $(5^{1/2})^3 = 5^{3/2}$  and  $1/5 = 5^{-1}$ .

#### Quantities\*

- 1. Understand that the magnitude of a quantity is independent of the unit used to measure it. For example, the density of a liquid does not change when it is measured in another unit. Rather, its measure changes. The chosen unit "measures" the quantity by giving it a numerical value ("the density of lead is 11.3 times that of water").
- 2. Use units as a way to understand problems and to guide the solution of multi-step problems, involving, e.g., acceleration, currency conversions, derived quantities such as person-hours and heating degree days, social science rates such as per-capita income, and rates in everyday life such as points scored per game.
- 3. Define metrics for the purpose of descriptive modeling. For example, find a good measure of overall highway safety; propose and debate measures such as fatalities per year, fatalities per year per driver, or fatalities per vehicle-mile traveled.
- 4. Add, subtract, multiply, and divide numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
- 5. Use and interpret quantities and units correctly in algebraic formulas.
- 6. Use and interpret quantities and units correctly in graphs and data displays (function graphs, data tables, scatter plots, and other visual displays of quantitative information). Generate graphs and data displays using technology.

#### The Complex Number System

- 1. Understand that the relation  $i^2 = -1$  and the commutative, associative, and distributive laws can be used to calculate with complex numbers.
- 2. STEM Understand that polynomials can be factored over the complex numbers, e.g., as in  $x^2 + 4 = (x + 2i)(x 2i)$ .
- 3. STEM Understand that complex numbers can be visualized on the complex plane. Real numbers correspond to points on the horizontal (real) axis, and imaginary numbers to points on the vertical axis.
- 4. STEM Understand that on the complex plane, arithmetic of complex numbers can be interpreted geometrically: addition is analogous to vector addition, and multiplication can be understood as rotation and dilation about the origin. Complex conjugation is reflection across the real axis.
- 5. STEM Understand that on the complex plane, as on the real line, the distance between numbers is the absolute value of the difference, and the midpoint of a segment is the average of the numbers at its endpoints.
- 6. Add, subtract, and multiply complex numbers.
- 7. STEM Find the conjugate of a complex number; use conjugates to find absolute values and quotients of complex numbers.
- 8. STEM Solve quadratic equations with real coefficients that have complex solutions using a variety of methods.
- 9. STEM Graph complex numbers in rectangular form.
- 10. STEM Graph complex numbers in polar form and interpret arithmetic operations on complex numbers geometrically.
- 11. STEM Explain why the rectangular and polar forms of a complex number represent the same number.

<sup>★</sup> Standard with close connection to modeling.

#### Vector Quantities and Matrices

- 1. STEM Understand that vector quantities have both magnitude and direction. Vector quantities are typically represented by directed line segments. The magnitude of a vector  $\mathbf{v}$  is commonly denoted  $|\mathbf{v}|$  or  $||\mathbf{v}||$ .
- 2. STEM Understand that vectors are determined by the coordinates of their initial and terminal points, or by their components.
- 3. STEM Understand that vectors can be added end-to-end, component-wise, or by the parallelogram rule. The magnitude of a sum of two vectors is typically not the sum of the magnitudes.
- 4. STEM Understand that a vector  $\mathbf{v}$  can be multiplied by a real number c (called a scalar in this context) to form a new vector  $c\mathbf{v}$  with magnitude |c|v. When  $|c|v \neq 0$ , the direction of  $c\mathbf{v}$  is either along  $\mathbf{v}$  (for c > 0) or against  $\mathbf{v}$  (for c < 0). Scalar multiplication can be shown graphically by scaling vectors and possibly reflecting them in the origin; scalar multiplication can also be performed component-wise, e.g., as  $c(v_s, v_y) = (cv_s, cv_y)$ .
- 5. STEM Understand that vector subtraction  $\mathbf{v} \mathbf{w}$  is defined as  $\mathbf{v} + (-\mathbf{w})$ . Two vectors can be subtracted graphically by connecting the tips in the appropriate order.
- 6. STEM Understand that matrices can be multiplied by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled. Matrices of the same dimensions can be added or subtracted. Matrices with compatible dimensions can be multiplied. Unlike multiplication of numbers, matrix multiplication is not a commutative operation, but still satisfies the associative and distributive laws.
- 7. STEM Understand that a vector, when regarded as a matrix with one column, can be multiplied by a matrix of suitable dimensions to produce another vector. A 2 × 2 matrix can be viewed as a transformation of the plane.
- 8. STEM Understand that a system of linear equations can be represented as a single matrix equation in a vector variable.
- 9. STEM Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.
- 10. STEM Perform basic vector operations (addition, subtraction, scalar multiplication) both graphically and algebraically.
- 11. STEM Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum.
- 12. STEM Solve problems involving velocity and quantities that can be represented by vectors.\*
- 13. STEM Add, subtract, and multiply matrices of appropriate dimensions.
- 14. STEM Use matrices to store and manipulate data, e.g., to represent payoffs or incidence relationships in a network.
- 15. STEM Represent systems of linear equations as matrix equations.
- 16. STEM Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension greater than 3 × 3).

Standard with close connection to modeling.

## Mathematics | High School—Algebra

**Expressions.** An expression is a description of a computation on numbers and symbols that represent numbers, using arithmetic operations and the operation of raising a number to rational exponents. Conventions about the use of parentheses and the order of operations assure that each expression is unambiguous. Creating an expression that describes a computation involving a general quantity requires the ability to express the computation in general terms, abstracting from specific instances.

Reading an expression with comprehension involves analysis of its underlying structure. This may suggest a different but equivalent way of writing the expression that exhibits some different aspect of its meaning. For example, p + 0.05p can be interpreted as the addition of a 5% tax to a price p. Rewriting p + 0.05p as 1.05p shows that adding a tax is the same as multiplying the price by a constant factor.

Algebraic manipulations are governed by deductions from the commutative, associative, and distributive laws and the inverse relationships between the four operations, and the conventions of algebraic notation. These extend what students have learned about arithmetic expressions in K–8 to expressions that involve exponents, radicals, and representations of real numbers, and, for STEM-intending students, complex numbers.

At times, an expression is the result of applying operations to simpler expressions. Viewing such an expression by singling out these simpler expressions can sometimes clarify its underlying structure.

A spreadsheet or a CAS environment can be used to experiment with algebraic expressions, perform complex algebraic manipulations, and understand how algebraic manipulations behave.

**Equations and inequalities**. An equation is a statement that two expressions are equal. Solutions to an equation are numbers that make the equation true when assigned to the variables in it. If the equation is true for all numbers, then it is called an identity; identities are often discovered by using the laws of arithmetic or the laws of exponents to transform one expression into another.

The solutions of an equation in one variable form a set of numbers; the solutions of an equation in two variables form a set of ordered pairs of numbers, which can be graphed in the coordinate plane. Two or more equations and/or inequalities form a system. A solution for such a system must satisfy every equation and inequality in the system.

An equation can often be solved by successively transforming it into one or more simpler equations. The process is governed by deductions based on the properties of equality. For example, one can add the same constant to both sides without changing the solutions, but squaring both sides might lead to extraneous solutions. Strategic competence in solving includes looking ahead for productive manipulations and anticipating the nature and number of solutions.

Some equations have no solutions in a given number system, stimulating the extension of that system. For example, the solution of x + 1 = 0 is an integer, not a whole number; the solution of 2x + 1 = 0 is a rational number, not an integer; the solutions of  $x^2 - 2 = 0$  are real numbers, not rational numbers; and the solutions of  $x^2 + 2 = 0$  are complex numbers, not real numbers.

The same solution techniques used to solve equations can be used to rearrange formulas. For example, the formula for the area of a trapezoid,  $A = ((b_1+b_2)/2)h$ , can be solved for *h* using the same deductive process.

Inequalities can be solved by reasoning about the properties of inequality. Many, but not all, of the properties of equality continue to hold for inequalities and can be useful in solving them.

*Connections to Functions and Modeling.* Expressions can define functions, and equivalent expressions define the same function. Equations in two variables may also define functions. Asking when two functions have the same value leads to an equation; graphing the two functions allows for the approximate solution of the equation. Converting a verbal description to an equation, inequality, or system of these is an essential skill in modeling.

## **Content Outline**

Seeing Structure in Expressions Arithmetic with Polynomials and Rational Expressions Creating Equations that Describe Numbers or Relationships Reasoning with Equations and Inequalities

#### Seeing Structure in Expressions

A-APR

A-CFD\*

- 1. Understand that different forms of an expression may reveal different properties of the quantity in question; a purpose in transforming expressions is to find those properties. Examples: factoring a quadratic expression reveals the zeros of the function it defines, and putting the expression in vertex form reveals its maximum or minimum value; the expression 1.15<sup>t</sup> can be rewritten as  $(1.15^{1/12})^{12t} \approx 1.012^{12t}$  to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.
- 2. Understand that complicated expressions can be interpreted by viewing one or more of their parts as single entities.
- 3. Interpret an expression that represents a quantity in terms of the context. *Include interpreting parts of an expression, such as terms, factors and coefficients.*\*
- 4. Factor, expand, and complete the square in quadratic expressions.
- 5. See expressions in different ways that suggest ways of transforming them. For example, see  $x^4 y^4$  as  $(x^2)^2 (y^2)^2$ , thus recognizing it as a difference of squares that can be factored as  $(x^2 y^2)(x^2 + y^2)$ .
- 6. Rewrite expressions using the laws of exponents. For example,  $(x^{1/2})^3 = x^{3/2}$  and  $1/x = x^{-1}$ .
- 7. Use the laws of exponents to interpret expressions for exponential functions, recognizing positive rational exponents as indicating roots of the base and negative exponents as indicating the reciprocal of a power. For example, identify the per unit percentage change in functions such as  $y = (1.02)^t$ ,  $y = (0.97)^t$ ,  $y = (1.01)^{12t}$ ,  $y = (1.2)^{t/10}$ , and conclude whether it represents exponential growth or decay. Recognize that any nonzero number raised to the zero power is 1, for example,  $12(1.05)^0 = 12$ . Avoid common errors such as confusing  $6(1.05)^t$  with  $(6\cdot1.05)^t$  and  $5(0.03)^t$  with  $5(1.03)^t$ .
- 8. STEM Prove the formula for the sum of a geometric series, and use the formula to solve problems.

#### Arithmetic with Polynomials and Rational Expressions

- 1. Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication.
- 2. Understand that polynomial identities become true statements no matter which real numbers are substituted. For example, the polynomial identity  $(x^2 + y^2)^2 = (x^2 y^2)^2 + (2xy)^2$  can be used to generate Pythagorean triples.
- 3. Understand the Remainder Theorem: For a polynomial p(x) and a number a, the remainder on division by x a is p(a), so p(a) = 0 if and only if (x a) is a factor of p(x).
- 4. STEM Understand that the Binomial Theorem gives the expansion of  $(x + a)^n$  in powers of x for a positive integer n and a real number a, with coefficients determined for example by Pascal's Triangle. The Binomial Theorem can be proved by mathematical induction or by a combinatorial argument.
- 5. STEM Understand that rational expressions are quotients of polynomials. They form a system analogous to the rational numbers, closed under division by a nonzero rational function.
- 6. Add, subtract and multiply polynomials.
- 7. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the polynomial.
- 8. Transform simple rational expressions using the commutative, associative, and distributive laws, and the inverse relationship between multiplication and division.
- 9. Divide a polynomial p(x) by a divisor of the form x a using long division.
- 10. STEM Identify zeros and asymptotes of rational functions, when suitable factorizations are available, and use the zeros and asymptotes to construct a rough graph of the function.
- 11. STEM Divide polynomials, using long division for linear divisors and long division or a computer algebra system for higher degree divisors.

#### Creating Equations That Describe Numbers or Relationships

- 1. Understand that equations in one variable are often created to describe properties of a specific but unknown number.
- 2. Understand that equations in two or more variables that represent a relationship between quantities can be built by experimenting with specific numbers in the relationship.
- 3. Write equations and inequalities that specify an unknown quantity or to express a relationship between two or more quantities. Use the equations and inequalities to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*

<sup>\*</sup> Standard with close connection to modeling.

4. Rearrange formulas to highlight a quantity of interest. For example, transform Ohm's law V = IR to highlight resistance R; in motion with constant acceleration, transform  $v_{f,x}^2 - v_{i,x}^2 = 2a_x(x_f - x_i)$  to highlight the change in position along the x-axis,  $x_f - x_i$ .

#### **Reasoning with Equations and Inequalities**

A-REI

- 1. Understand that to solve an equation algebraically, one makes logical deductions from the equality asserted by the equation, often in steps that replace it with a simpler equation whose solutions include the solutions of the original one.
- 2. Understand that the method of completing the square can transform any quadratic equation in *x* into an equivalent equation of the form  $(x p)^2 = q$ . This leads to the quadratic formula.
- 3. Understand that given a system of two linear equations in two variables, adding a multiple of one equation to another produces a system with the same solutions. This principle, combined with principles already encountered with equations in one variable, allows for the simplification of systems.
- 4. Understand that the graph of an equation in two variables is the set of its solutions plotted in the coordinate plane, often forming a curve or a line.
- 5. Understand that solutions to two equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
- 6. Understand that the solutions to a linear inequality in two variables can be graphed as a half-plane (excluding the boundary in the case of a strict inequality).
- 7. Understand that solutions to several linear inequalities in two variables correspond to points in the intersection of the regions in the plane defined by the solutions to the inequalities.
- 8. Understand that equations and inequalities can be viewed as constraints in a problem situation, e.g., inequalities describing nutritional and cost constraints on combinations of different foods. \*
- 9. STEM Understand that the relationship between an invertible function f and its inverse function can be used to solve equations of the form f(x) = c.
- 10. Solve simple rational and radical equations in one variable, noting and explaining extraneous solutions.
- 11. Solve linear equations in one variable, including equations with coefficients represented by letters.
- 12. Solve quadratic equations in one variable. Include methods such as inspection (e.g. for  $x^2 = 49$ ), square roots, completing the square, the quadratic formula and factoring. Recognize when the quadratic formula gives complex solutions and write them as  $a \pm bi$  for real numbers a and b.
- 13. Solve equations f(x) = g(x) approximately by finding the intersections of the graphs of f(x) and g(x), e.g. using technology to graph the functions. Include cases where f(x) and/or g(x) are linear, polynomial, rational, exponential, and logarithmic functions.
- 14. Solve linear inequalities in one variable and graph the solution set on a number line.
- 15. Solve systems of linear equations algebraically and graphically, focusing on pairs of linear equations in two variables.
- 16. Solve algebraically a simple system consisting of one linear equation and one quadratic equation in two variables; for example, find points of intersection between the line y = -3x and the circle  $x^2 + y^2 = 3$ .
- 17. Graph the solution set of a system of linear inequalities in two variables.
- 18. In modeling situations, represent constraints by systems of equations and/or inequalities, and interpret solutions of these systems as viable or non-viable options in the modeling context. \*
- 19. In the context of exponential models, solve equations of the form  $a b^a = d$  where a, c, and d are specific numbers and the base b is 2, 10, or e.\*
- 20. STEM Relate the properties of logarithms to the laws of exponents and solve equations involving exponential functions.
- 21. STEM Use inverse functions to solve equations of the form  $a\sin(bx + c) = d$ ,  $a\cos(bx + c) = d$ , and  $a\tan(bx + c) = d$ .

<sup>\*</sup> Standard with close connection to modeling.

## Mathematics | High School—Functions

Functions describe situations where one quantity determines another. For example, the return on \$10,000 invested at an annualized percentage rate of 4.25% is a function of the length of time the money is invested. Because nature and society are full of dependencies between quantities, functions are important tools in the construction of mathematical models.

In school mathematics, functions usually have numerical inputs and outputs and are often defined by an algebraic expression. For example, the time in hours it takes for a car to drive 100 miles is a function of the car's speed in miles per hour, *v*; the rule T(v) = 100/v expresses this relationship algebraically and defines a function whose name is *T*.

The set of inputs to a function is called its domain. We often infer the domain to be all inputs for which the expression defining a function has a value, or for which the function makes sense in a given context.

A function can be described in various ways, such as by a graph (e.g., the trace of a seismograph); by a verbal rule, as in, "I'll give you a state, you give me the capital city"; or by an algebraic expression like f(x) = a + bx. The graph of a function is often a useful way of visualizing the relationship the function models, and manipulating a mathematical expression for a function can throw light on the function's properties. Graphing technology and spreadsheets are also useful tools in the study of functions.

Functions presented as expressions can model many important phenomena. Two important families of functions characterized by laws of growth are linear functions, which grow at a constant rate, and exponential functions, which grow at a constant percent rate. Linear functions with a constant term of zero describe proportional relationships.

A graphing utility or a CAS can be used to experiment with properties of the functions and their graphs and to build computational models of functions, including recursively defined functions.

*Connections to Expressions, Equations, Modeling and Coordinates.* Determining an output value for a particular input involves evaluating an expression; finding inputs that yield a given output involves solving an equation. Questions about when two functions have the same value lead to equations, whose solutions can be visualized from the intersection of their graphs. Because functions describe relationships between quantities, they are frequently used in modeling. Sometimes functions are defined by a recursive process, which can be displayed effectively using a spreadsheet or other technology.

## **Content Outline**

Interpreting Functions Building Functions Linear, Quadratic, and Exponential Models Trigonometric Functions Limits and Continuity<sup>†</sup> Differential Calculus<sup>†</sup> Applications of Derivatives<sup>†</sup> Integral Calculus<sup>†</sup> Applications of Integration<sup>†</sup> Infinite Series<sup>†</sup>

<sup>&</sup>lt;sup>†</sup> Specific standards for calculus domains are not listed.

#### **Interpreting Functions**

- 1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of *f* corresponding to the input *x*.
- 2. Understand that functions of a single variable have key characteristics, including: zeros; extreme values; average rates of change (over intervals); intervals of increasing, decreasing and/or constant behavior; and end behavior.
- 3. Understand that a function defined by an expression may be written in different but equivalent forms, which can reveal different properties of the function.
- Use function notation and evaluate functions for inputs in their domains.
- 5. Describe qualitatively the functional relationship between two quantities by reading a graph (e.g., where the function is increasing or decreasing, what its long-run behavior appears to be, and whether it appears to be periodic).
- 6. Sketch a graph that exhibits the qualitative features of a function that models a relationship between two quantities.\*
- 7. Compare properties of two functions represented in different ways (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, draw conclusions about the graph of a quadratic function from its algebraic expression.
- 8. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function."
- 9. Describe the qualitative behavior of functions presented in graphs and tables. Identify: intercepts; intervals where the function is increasing, decreasing, positive or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.\*
- 10. Use technology to exhibit the effects of parameter changes on the graphs of linear, power, quadratic, square root, cube root, and polynomial functions, and simple rational, exponential, logarithmic, sine, cosine, absolute value, and step functions."
- 11. Transform quadratic polynomials algebraically to reveal different features of the function they define, such as zeros, extreme values, and symmetry of the graph.

#### **Building Functions**

- 1. Understand that functions can be described by specifying an explicit expression, a recursive process or steps for calculation.
- 2. Understand that sequences are functions whose domain is a subset of the nonnegative integers.
- 3. STEM Understand that composing a function f with a function g creates a new function called the composite function—for an input number x, the output of the composite function is f(q(x)).
- 4. STEM Understand that the inverse of an invertible function "undoes" what the function does; that is, composing the function with its inverse in either order returns the original input. One can sometimes produce an invertible function from a noninvertible function by restricting the domain (e.g., squaring is not an invertible function on the real numbers, but squaring is invertible on the nonnegative real numbers).
- 5. Write a function that describes a relationship between two quantities, for example by varying parameters in and combining standard function types (such as linear, quadratic or exponential functions). Use technology to experiment with parameters and to illustrate an explanation of the behavior of the function when parameters vary.\*
- 6. Solve problems involving linear, quadratic, and exponential functions.\*
- Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology.
- 8. Generate an arithmetic or geometric sequence given a recursive rule for the sequence.\*
- 9. As a way to describe routine modeling situations, write arithmetic and geometric sequences both recursively and in closed form, and translate between the two forms.\*
- 10. STEM Evaluate composite functions and compose functions symbolically.
- 11. STEM Read values of an inverse function from a graph or a table, given that the function has an inverse.
- 12. STEM For linear or simple exponential functions, find a formula for an inverse function by solving an equation.
- 13. STEM Verify symbolically by composition that one function is the inverse of another.

Linear, Quadratic, and Exponential Models

A-BF

A-IF

- 1. Understand that a linear function, defined by f(x) = mx + b for some constants *m* and *b*, models a situation in which a quantity changes at a constant rate, *m*, relative to another. \*
- 2. Understand that quadratic functions have maximum or minimum values and can be used to model problems with optimum solutions.\*
- 3. Understand that an exponential function, defined by  $f(x) = ab^x$  or by  $f(x) = a(1 + r)^x$  for some constants a, b > 0 and r > -1, models a situation where a quantity grows or decays by a constant factor or a constant percentage change over each unit interval. \*
- Understand that linear functions grow by equal differences over equal intervals; exponential functions grow by equal factors over equal intervals.
- Understand that in an arithmetic sequence, differences between consecutive terms form a constant sequence, and <u>second</u> <u>differences</u> are zero. Conversely, if the second differences are zero, the sequence is arithmetic. Arithmetic sequences can be seen as linear functions.\*
- 6. Understand that in a sequence that increases quadratically (e.g.,  $a_n = 3n^2 + 2n + 1$ ), differences between consecutive terms form an arithmetic sequence, and second differences form a constant sequence. Conversely, if the second differences form a constant sequence with nonzero value, the sequence increases quadratically.
- 7. Understand that in a geometric sequence, ratios of consecutive terms are all the same.\*
- Understand that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.★
- Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. \*
- 10. Construct a function to describe a linear relationship between two quantities. Determine the rate of change and constant term of a linear function from a graph, a description of a relationship, or from two (x, y) values (include reading these from a table).\*
- 11. Use quadratic functions to model problems, e.g., in situations with optimum solutions.\*
- 12. Construct an exponential function in the form  $f(x) = a(1 + r)^x$  or  $f(x) = ab^x$  to describe a relationship in which one quantity grows with respect to another at a constant percent growth rate or a with a constant growth factor.
- 13. Interpret the rate of change and constant term of a linear function or sequence in terms of the situation it models, and in terms of its graph or a table of values. \*
- 14. Calculate and interpret the growth factor for an exponential function (presented symbolically or as a table) given a fixed interval. Estimate the growth factor from a graph.\*
- 15. Recognize a quantitative relationship as linear, exponential, or neither from description of a situation.\*
- 16. Compare quantities increasing exponentially to quantities increasing linearly or as a polynomial function.\*

#### **Trigonometric Functions**

- 1. STEM Understand that the unit circle in the coordinate plane enables one to define the sine, cosine, and tangent functions for real numbers.
- 2. STEM Understand that trigonometric functions are periodic by definition, and sums and products of functions with the same period are periodic.
- 3. STEM Understand that restricting trigonometric functions to a domain on which they are always increasing or always decreasing allows for the construction of an inverse function.
- 4. STEM Revisit trigonometric functions and their graphs in terms of radians.
- 5. STEM Use the unit circle to determine geometrically the values of sine, cosine, tangent for integer multiples of  $\pi/4$  and  $\pi/6$ .
- 6. STEM Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.
- 7. STEM Solve simple trigonometric equations formally using inverse trigonometric functions and evaluate the solutions numerically using technology. *Solving trigonometric equations by means of the quadratic formula is optional.*

Limits and Continuity<sup>†</sup>

F-LC

E-TE

<sup>\*</sup> Standard with close connection to modeling.

<sup>&</sup>lt;sup>1</sup> Specific standards for calculus domains are not listed.

Differential Calculus <sup>†</sup>	F-DC
Applications of Derivatives <sup>†</sup>	F-AD
Integral Calculus <sup>†</sup>	F-IC
Applications of Integration <sup>+</sup>	F-AI
Infinite Series <sup>†</sup>	F-IS

 $<sup>^\</sup>dagger$  Specific standards for calculus domains are not listed.

## Mathematics | High School–Modeling

Modeling links classroom mathematics and statistics to everyday life, work, and decision-making. Modeling is the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions. Quantities and their relationships in physical, economic, public policy, social and everyday situations can be modeled using mathematical and statistical methods. When making mathematical models, technology is valuable for varying assumptions, exploring consequences, and comparing predictions with data.

A model can be very simple, such as writing total cost as a product of unit price and number bought, or using a geometric shape to describe a physical object like a coin. Even such simple models involve making choices. It is up to us whether to model a coin as a three-dimensional cylinder, or whether a two-dimensional disk works well enough for our purposes. Other situations—modeling a delivery route, a production schedule, or a comparison of loan amortizations—need more elaborate models that use other tools from the mathematical sciences. Real-world situations are not organized and labeled for analysis; formulating tractable models, representing such models, and analyzing them is appropriately a creative process. Like every such process, this depends on acquired expertise as well as creativity.

Some examples of such situations might include:

- Estimating how much water and food is needed for emergency relief in a devastated city of 3 million people, and how it might be distributed.
- Planning a table tennis tournament for 7 players at a club with 4 tables, where each player plays against each other player.
- Designing the layout of the stalls in a school fair so as to raise as much money as possible.
- Analyzing stopping distance for a car.
- Modeling savings account balance, bacterial colony growth, or investment growth.
- Critical path analysis, e.g., applied to turnaround of an aircraft at an airport.
- Risk situations, like extreme sports, pandemics and terrorism.
- Relating population statistics to individual predictions.

In situations like these, the models devised depend on a number of factors: How precise an answer do we want or need? What aspects of the situation do we most need to understand, control, or optimize? What resources of time and tools do we have? The range of models that we can create and analyze is also constrained by the limitations of our mathematical, statistical, and technical skills, and our ability to recognize significant variables and relationships among them. Diagrams of various kinds, spreadsheets and other technology, and algebra are powerful tools for understanding and solving problems drawn from different types of real-world situations.

One of the insights provided by mathematical modeling is that essentially the same mathematical or statistical structure can model seemingly different situations. Models can also shed light on the mathematical structures themselves, for example as when a model of bacterial growth makes more vivid the explosive growth of the exponential function.

The basic modeling cycle is summarized in the diagram. It involves (1) identifying variables in the situation and selecting those than represent essential features, (2) formulating a model by creating and selecting geometric, graphical, tabular, algebraic, or statistical representations that describe relationships between the variables, (3) analyzing and performing operations on these relationships to draw conclusions, (4) interpreting the



results of the mathematics in terms of the original situation, (5) validating the conclusions by comparing them with the situation, and then, either improving the model or, if it is acceptable, (6) reporting on the conclusions and the reasoning behind them. Choices, assumptions and approximations are present throughout this cycle.

In descriptive modeling, a model simply describes the phenomena or summarizes them in a compact form. Graphs of observations are a familiar descriptive model—for example, graphs of global temperature and atmospheric  $CO_2$  over time.

Analytic modeling seeks to explain data on the basis of deeper theoretical ideas, albeit with parameters that are empirically based; for example, exponential growth of bacterial colonies (until cut-off mechanisms such as pollution or starvation intervene) follows from a constant reproduction rate. Functions are an important tool for analyzing such

problems.

Graphing utilities, spreadsheets, CAS environments, and dynamic geometry software are powerful tools that can be used to model purely mathematical phenomena (e.g., the behavior of polynomials) as well as physical phenomena.

#### **Modeling Standards**

Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol  $(\bigstar)$ .

## STATE DEPARTMENT OF EDUCATION APRIL 22, 2010 Mathematics | High School—Statistics and Probability\*

# Decisions or predictions are often based on data—numbers in context. These decisions or predictions would be easy if the data always sent a clear message, but the message is often obscured by variability. Statistics provides tools for describing variability in data and for making informed decisions that take it into account.

Data are gathered, displayed, summarized, examined, and interpreted to discover patterns and deviations from patterns. Quantitative data can be described in terms of key characteristics: measures of shape, center, and spread. The shape of a data distribution might be described as symmetric, skewed, flat, or bell shaped, and it might be summarized by a statistic measuring center (such as mean or median) and a statistic measuring spread (such as standard deviation or interquartile range). Different distributions can be compared numerically using these statistics or compared visually using plots. Knowledge of center and spread are not enough to describe a distribution. Which statistics to compare, which plots to use, and what the results of a comparison might mean, depend on the question to be investigated and the real-life actions to be taken.

Randomization has two important uses in drawing statistical conclusions. First, collecting data from a random sample of a population makes it possible to draw valid conclusions about the whole population, taking variability into account. Second, randomly assigning individuals to different treatments allows a fair comparison of the effectiveness of those treatments. A statistically significant outcome is one that is unlikely to be due to chance alone, and this can be evaluated only under the condition of randomness. The conditions under which data are collected are important in drawing conclusions from the data; in critically reviewing uses of statistics in public media and other reports it is important to consider the study design, how the data were gathered, and the analyses employed as well as the data summaries and the conclusions drawn.

Random processes can be described mathematically by using a probability model. One begins to make a probability model by listing or describing the possible outcomes (the sample space) and assigning probabilities. In situations such as flipping a coin, rolling a number cube, or drawing a card, it might be reasonable to assume various outcomes are equally likely. In a probability model, sample points represent outcomes and combine to make up events; probabilities of events can be computed by applying the additive and multiplicative laws of probability. Interpreting these probabilities relies on an understanding of independence and conditional probability, which can be approached through the analysis of two-way tables.

Technology plays an important role in statistics and probability by making it possible to generate plots, functional models, and correlation coefficients, and to simulate many possible outcomes in a short amount of time.

*Connections to Functions and Modeling.* Functional models may be used to approximate data; if the data are approximately linear, the relationship may be modeled with a regression line and the strength and direction of such a relationship may be expressed through a correlation coefficient.

## **Content Outline**

Summarizing Categorical and Measurement Data

**Probability Models** 

Independently Combined Probability Models

Making Inferences and Justifying Conclusions Drawn from Data

Conditional Probability and the Laws of Probability

**Experimenting and Simulating to Model Probabilities** 

Using Probability to Make Decisions

<sup>\*</sup> Most or all of the standards in Statistics and Probability have a close connection to modeling.

#### Summarizing Categorical and Quantitative Data

- 1. Understand that statistical methods take variability into account to support making informed decisions based on data collected to answer specific questions.
- 2. Understand that visual displays and summary statistics condense the information in data sets into usable knowledge.
- 3. Understand that patterns of association or relationships between variables may emerge through careful analysis of multivariable data.
- 4. Summarize comparative or bivariate categorical data in two-way frequency tables. Interpret joint, marginal and conditional relative frequencies in the context of the data, recognizing possible associations and trends in bivariate categorical data.
- 5. Compare data on two or more count or measurement variables by using plots on the real number line (dot plots, histograms, and box plots). Use statistics appropriate to the shape of the data distribution to summarize center (median, mean) and spread (interquartile range, standard deviation) of the data sets. Interpret changes in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
- 6. Represent bivariate quantitative data on a scatter plot and describe how the variables are related.
- 7. Fit a linear function for scatter plots that suggest a linear association. Informally assess the fit of the model function by plotting and analyzing residuals.
- 8. Use a model function fitted to the data to solve problems in the context of the data, interpreting the slope (rate of change) and the intercept (constant term).
- 9. Compute (using technology) and interpret the correlation coefficient for a linear relationship between variables.
- 10. Distinguish between correlation and causation.

#### **Probability Models**

S-PM

- 1. Understand that in a probability model, individual outcomes have probabilities that sum to 1. When outcomes are categorized, the probability of a given type of outcome is the sum of the probabilities of all the individual outcomes of that type.
- 2. Understand that uniform probability models are useful models for processes such as (i) the selection of a person from a population; (ii) the selection of a number in a lottery; (iii) any physical situation in which symmetry suggests that different individual outcomes are equally likely.
- 3. Understand that two different empirical probability models for the same process will rarely assign exactly the same probability to a given type of outcome. But if the data sets are large and the methods used to collect the data for the two data sets are consistent, the agreement between the models is likely to be reasonably good.
- 4. Understand that a (theoretical) uniform probability model may be judged by comparing it to an empirical probability model for the same process. If the theoretical assumptions are appropriate and the data set is large, then the two models should agree approximately. If the agreement is not good, then it may be necessary to modify the assumptions underlying the theoretical model or look for factors that might have affected the data used to create the empirical model.
- 5. Use a uniform probability model to compute probabilities for a process involving uncertainty, including the random selection of a person from a population and physical situations where symmetry suggests that different individual outcomes are equally likely.
  - a. List the individual outcomes to create a sample space.
  - b. Label the individual outcomes in the sample space to reflect important characteristics or quantities associated with them.
  - c. Determine probabilities of individual outcomes, and determine the probability of a type or category of outcome as the fraction of individual outcomes it includes.
- 6. Generate data by sampling, repeated experimental trials, and simulations. Record and appropriately label such data, and use them to construct an empirical probability model. Compute probabilities in such models.
- 7. Compare probabilities from a theoretical model to probabilities from a corresponding empirical model for the same situation. If the agreement is not good, explain possible sources of the discrepancies.

#### Independently Combined Probability Models

S-IPM

1. Understand that to describe a pair of random processes (such as tossing a coin and rolling a number cube), or one random process repeated twice (such as randomly selecting a student in the class on two different days), two probability models can be combined into a single model.

- a. The sample space for the combined model is formed by listing all possible ordered pairs that combine an individual outcome from the first model with an individual outcome from the second. Each ordered pair is an individual outcome in the combined model.
- b. The total number of individual outcomes (ordered pairs) in the combined model is the product of the number of individual outcomes in each of the two original models.
- 2. Understand that when two probability models are combined independently, the probability that one type of outcome in the first model occurs together with another type of outcome in the second model is the product of the two corresponding probabilities in the original models (the Multiplication Rule).
- 3. Combine two uniform models independently to compute probabilities for a pair of random processes (e.g., flipping a coin twice, selecting one person from each of two classes).
  - a. Use organized lists, tables and tree diagrams to represent the combined sample space.
  - b. Determine probabilities of ordered pairs in the combined model, and determine the probability of a particular type or category of outcomes in the combined model, as the fraction of ordered pairs corresponding to it.
- 4. For two independently combined uniform models, use the Multiplication Rule to determine probabilities.

#### Making Inferences and Justifying Conclusions

- 1. Understand that statistics is a process for making inferences about population parameters based on a sample from that population; randomness is the foundation for statistical inference.
- 2. Understand that the design of an experiment or sample survey is of critical importance to analyzing the data and drawing conclusions.
- 3. Understand that simulation-based techniques are powerful tools for making inferences and justifying conclusions from data.
- 4. Use probabilistic reasoning to decide if a specified model is consistent with results from a given data-generating process. (For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?)
- 5. Recognize the purposes of and differences among sample surveys, experiments and observational studies; explain how randomization relates to each.
- 6. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.
- 7. Use data from a randomized experiment to compare two treatments; justify significant differences between parameters through the use of simulation models for random assignment.
- 8. Evaluate reports based on data.

#### Conditional Probability and the Laws of Probability

- 1. Understand that events are subsets of a sample space; often, events of interest are defined by using characteristics (or categories) of the sample points, or as unions, intersections, or complements thereof ("and," "or," "not"). A sample point may belong to several events (categories).
- 2. Understand that if A and B are two events, then in a uniform model the conditional probability of A given B, denoted by  $P(A \mid B)$ , is the fraction of B's sample points that also lie in A.
- 3. Understand that the laws of probability allow one to use known probabilities to determine other probabilities of interest.
- 4. Compute probabilities by constructing and analyzing sample spaces, representing them by tree diagrams, systematic lists, and Venn diagrams.
- 5. Use the laws of probability to compute probabilities.
- 6. Apply concepts such as intersections, unions and complements of events, and conditional probability and independence to define or analyze events, calculate probabilities and solve problems.
- 7. Construct and interpret two-way tables to show probabilities when two characteristics (or categories) are associated with each sample point. Use a two-way table to determine conditional probabilities.\*
- Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.
- 9. Use permutations and combinations to compute probabilities of compound events and solve problems.

S-CP

S-IC

<sup>\*</sup> Standard with close connection to modeling.

#### **Experimenting and Simulating to Model Probabilities**

- Understand that sets of data obtained from surveys, simulations or other means can be used as probability models, by treating the data set itself as a sample space, in which the sample points are the individual pieces of data.
- 2. Understand that the probability of an outcome can be interpreted as an assertion about the long-run proportion of the outcome's occurrence if the random experiment is repeated a large number of times.
- 3. Calculate experimental probabilities by performing simulations or experiments involving a probability model and using relative frequencies of outcomes.
- 4. Compare the results of simulations with predicted probabilities. When there are substantial discrepancies between predicted and observed probabilities, explain them.
- 5. Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets and tables to estimate areas under the normal curve.

#### Using Probability to Make Decisions

S-MD

- 1. Understand that the expected value of a random variable is the weighted average of its possible values, with weights given by their respective probabilities.
- 2. Understand that when the possible outcomes of a decision can be assigned probabilities and payoff values, the decision can be analyzed as a random variable with an expected value, e.g., of an investment.
- 3. Calculate expected value, e.g. to determine the fair price of an investment.
- 4. Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).
- 5. Evaluate and compare two investments or strategies with the same expected value, where one investment or strategy is safer than the other.
- 6. Evaluate and compare two investments or strategies, where one investment or strategy is safer but has lower expected value. Include large and small investments, and situations with serious consequences.
- 7. Analyze decisions and strategies using probability concepts (e.g. product testing, medical testing, pulling a hockey goalie at the end of a game).

## Mathematics | High School–Geometry

An understanding of the attributes and relationships of geometric objects can be applied in diverse contexts interpreting a schematic drawing, estimating the amount of wood needed to frame a sloping roof, rendering computer graphics, or designing a sewing pattern for the most efficient use of material.

Understanding the attributes of geometric objects often relies on measurement: a circle is a set of points in a plane at a fixed distance from a point; a cube is bounded by six squares of equal area; when two parallel lines are crossed by a transversal, pairs of corresponding angles are congruent.

The concepts of congruence, similarity and symmetry can be united under the concept of geometric transformation. Reflections and rotations each explain a particular type of symmetry, and the symmetries of an object offer insight into its attributes—as when the reflective symmetry of an isosceles triangle assures that its base angles are congruent. Applying a scale transformation to a geometric figure yields a similar figure. The transformation preserves angle measure, and lengths are related by a constant of proportionality.

The definitions of sine, cosine and tangent for acute angles are founded on right triangle similarity, and, with the Pythagorean theorem, are fundamental in many real-world and theoretical situations.

Coordinate geometry is a rich field for exploration. How does a geometric transformation such as a translation or reflection affect the coordinates of points? How is the geometric definition of a circle reflected in its equation? Coordinates can describe locations in three dimensions and extend the use of algebraic techniques to problems involving the three-dimensional world we live in.

Dynamic geometry environments provide students with experimental and modeling tools that allow them to investigate geometric phenomena in much the same was as CAS environments allow them to experiment with algebraic phenomena.

*Connections to Equations and Inequalities.* The correspondence between numerical coordinates and geometric points allows methods from algebra to be applied to geometry and vice versa. The solution set of an equation becomes a geometric curve, making visualization a tool for doing and understanding algebra. Geometric shapes can be described by equations, making algebraic manipulation into a tool for geometric understanding, modeling and proof.

## **Content Outline**

Congruence Similarity, Right Triangles, and Trigonometry Circles Expressing Geometric Properties with Equations Trigonometry of General Triangles Geometric Measurement and Dimension Modeling with Geometry

#### Congruence

- 1. Understand that two geometric figures are congruent if there is a sequence of rigid motions (rotations, reflections, translations) that carries one onto the other. This is the principle of superposition.
- 2. Understand that criteria for triangle congruence are ways to specify enough measures in a triangle to ensure that all triangles drawn with those measures are congruent.
- 3. Understand that criteria for triangle congruence (ASA, SAS, and SSS) can be established using rigid motions.
- 4. Understand that geometric diagrams can be used to test conjectures and identify logical errors in fallacious proofs.
- 5. Know and use (in reasoning and problem solving) definitions of angles, polygons, parallel, and perpendicular lines, rigid motions, parallelograms and rectangles.
- 6. Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; two lines parallel to a third are parallel to each other; points on a perpendicular bisector of a segment are exactly those equidistant from the segment's endpoints.
- 7. Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°, base angles of isosceles triangles are congruent, the triangle inequality, the longest side of a triangle faces the angle with the greatest measure and vice-versa, the exterior-angle inequality, and the segment joining midpoints of two sides of a triangle parallel to the third side and half the length.
- 8. Use and prove properties of and relationships among special quadrilaterals: parallelogram, rectangle, rhombus, square, trapezoid and kite.
- 9. Characterize parallelograms in terms of equality of opposite sides, in terms of equality of opposite angles, and in terms of bisection of diagonals; characterize rectangles as parallelograms with equal diagonals.
- 10. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.
- 11. Construct an equilateral triangle, a square and a regular hexagon inscribed in a circle.
- 12. Use two-dimensional representations to transform figures and to predict the effect of translations, rotations, and reflections.
- 13. Use two-dimensional representations to transform figures and to predict the effect of dilations.

#### Similarity, Right Triangles, and Trigonometry

- 1. Understand that dilating a line produces a line parallel to the original. (In particular, lines passing through the center of the dilation remain unchanged.)
- 2. Understand that the dilation of a given segment is parallel to the given segment and longer or shorter in the ratio given by the scale factor. A dilation leaves a segment unchanged if and only if the scale factor is 1.
- 3. Understand that the assumed properties of dilations can be used to establish the AA, SAS, and SSS criteria for similarity of triangles.
- 4. Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of sine, cosine, and tangent.
- 5. Understand that a line parallel to one side of a triangle divides the other two proportionally, and conversely.
- 6. Use triangle similarity criteria to solve problems and to prove relationships in geometric figures. *Include a proof of the Pythagorean theorem using triangle similarity.*
- 7. Use and explain the relationship between the sine and cosine of complementary angles.
- 8. Use sine, cosine, tangent, and the Pythagorean Theorem to solve right triangles<sup>2</sup> in applied problems.
- 9. STEM Give an informal explanation using successive approximation that a dilation of scale factor r changes the length of a curve by a factor of r and the area of a region by a factor of  $r^2$ .

#### **Circles**

G-C

G-SRT

- 1. Understand that dilations can be used to show that all circles are similar.
- 2. Understand that there is a unique circle through three non-collinear points, and four circles tangent to three non-concurrent lines.

<sup>&</sup>lt;sup>2</sup> A right triangle has five parameters, its three lengths and two acute angles. Given a length and any other parameter, "solving a right triangle" means finding the remaining three parameters.

- 3. Identify and define radius, diameter, chord, tangent, secant, and circumference.
- 4. Identify and describe relationships among angles, radii, and chords. *Include the relationship between central, inscribed and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.*
- 5. Determine the arc lengths and the areas of sectors of circles, using proportions.
- 6. STEM Construct a tangent line from a point outside a given circle to the circle.
- 7. STEM Prove and use theorems about circles, and use these theorems to solve problems involving:
  - a. Symmetries of a circle
  - b. Similarity of a circle to any other
  - c. Tangent line, perpendicularity to a radius
  - d. Inscribed angles in a circle, relationship to central angles, and equality of inscribed angles
  - e. Properties of chords, tangents, and secants as an application of triangle similarity.

#### **Expressing Geometric Properties with Equations**

- Understand that two lines with well-defined slopes are perpendicular if and only if the product of their slopes is equal to –

   1.
- 2. Understand that the equation of a circle can be found using its definition and the Pythagorean Theorem.
- 3. Understand that transforming the graph of an equation by reflecting in the axes, translating parallel to the axes, or applying a dilation in one of the coordinate directions corresponds to substitutions in the equation.
- 4. STEM Understand that an ellipse is the set of all points whose distances from two fixed points (the foci) are a constant sum. The graph of  $x^2/a^2 + y^2/b^2 = 1$  is an ellipse with foci on one of the axes.
- 5. STEM Understand that a parabola is the set of points equidistant from a fixed point (the focus) and a fixed line (the directrix). The graph of any quadratic function is a parabola, and all parabolas are similar.
- 6. STEM Understand that the formula A = πab for the area of an ellipse can be derived from the formula for the area of a circle.
- 7. Use the slope criteria for parallel and perpendicular lines to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
- 8. Find the point on the segment between two given points that divides the segment in a given ratio.
- Use coordinates to compute perimeters of polygons and areas for triangles and rectangles, e.g. using the distance formula.<sup>★</sup>
- 10. Decide whether a point with given coordinates lies on a circle defined by a given equation.
- 11. Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point  $(1, \sqrt{3})$  lies on the circle centered at the origin and containing the point (0, 2).
- 12. Complete the square to find the center and radius of a circle given by an equation.
- 13. STEM Find an equation for an ellipse given in the coordinate plane with major and minor axes parallel to the coordinate axes.
- 14. STEM Calculate areas of ellipses to solve problems.\*

#### **Trigonometry of General Triangles**

G-TGT

G-GPE

- 1. **STEM** Understand that the formula  $A = \frac{1}{2} ab \sin(C)$  for the area of a triangle can be derived by drawing an auxiliary line from a vertex perpendicular to the opposite side. Applying this formula in three different ways leads to the Law of Sines.
- 2. STEM Understand that the Law of Cosines generalizes the Pythagorean Theorem.
- 3. STEM Understand that the sine, cosine and tangent of the sum or difference of two angles can be expressed in terms of sine, cosine, and tangent of the angles themselves using the addition formulas.
- 4. STEM Understand that the Laws of Sines and Cosines embody the triangle congruence criteria, in that three pieces of information are usually sufficient to completely solve a triangle. Furthermore, these laws yield two possible solutions in the ambiguous case, illustrating that "Side-Side-Angle" is not a congruence criterion.
- 5. STEM Explain proofs of the Law of Sines and the Law of Cosines.

<sup>\*</sup> Standard with close connection to modeling.

6. STEM Use the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).

#### **Geometric Measurement and Dimension**

- 1. Understand that the area of a decomposed figure is the sum of the areas of its components and is independent of the choice of dissection.
- 2. STEM Understand that lengths of curves and areas of curved regions can be defined using the informal notion of limit.
- 3. STEM Understand that Cavalieri's principle allows one to understand volume formulas informally by visualizing volumes as stacks of thin slices.
- 4. Find areas of polygons by dissecting them into triangles.
- 5. Explain why the volume of a cylinder is the area of the base times the height, using informal arguments.
- 6. For a pyramid or a cone, give a heuristic argument to show why its volume is one-third of its height times the area of its base.
- 7. Apply formulas and solve problems involving volume and surface area of right prisms, right circular cylinders, right pyramids, cones, spheres and composite figures.
- 8. STEM Identify cross-sectional shapes of slices of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.
- 9. STEM Use the behavior of length and area under dilations to show that the circumference of a circle is proportional to the radius and the area of a circle is proportional to the square of the radius. Identify the relation between the constants of proportionality with an informal argument involving dissection and recomposition of a circle into an approximate rectangle.

#### **Modeling with Geometry**

G-MG

G-GMD

- 1. Understand that models of objects and structures can be built from a library of standard shapes; a single kind of shape can model seemingly different objects. \*
- 2. Use geometric shapes, their measures and their properties to describe objects (e.g., modeling a tree trunk or a human torso or as a cylinder).\*
- Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).<sup>★</sup>
- 4. Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy constraints or minimize cost; working with typographic grid systems based on ratios). \*

<sup>\*</sup> Standard with close connection to modeling.

## Glossary

Addition and subtraction within 10, 20, or 100. Addition or subtraction of whole numbers with whole number answers, and with sum or minuend at most 10, 20, or 100. Example: 8 + 2 = 10 is an addition within 10, 14 - 5 = 9 is a subtraction within 20, and 55 - 18 = 37 is a subtraction within 100.

**Additive inverses**. Two numbers whose sum is 0 are additive inverses of one another. Example: 3/4 and -3/4 are additive inverses of one another because 3/4 + (-3/4) = (-3/4) + 3/4 = 0.

**Box plot**. A method of visually displaying a distribution of data values by using the median, quartiles, and extremes of the data set. A box shows the middle 50% of the data.<sup>3</sup>

**Complex fraction**. A fraction A/B where A and/or B are fractions.

**Congruent**. Two plane or solid figures are congruent if one can be obtained from the other by a sequence of rigid motions (rotations, reflections, and translations).

**Counting on**. A strategy for finding the number of objects in a group without having to count every member of the group. For example, if a stack of books is known to have 8 books and 3 more books are added to the top, it is not necessary to count the stack all over again; one can find the total by *counting on*—pointing to the top book and saying "eight," following this with "nine, ten, eleven. There are eleven books now."

Decade word. A word referring to a single-digit multiple of ten, as in *twenty*, *thirty*, *forty*, etc.

**Dot plot**. A method of visually displaying a distribution of data values where each data value is shown as a dot or mark above a number line. Also known as a line plot.<sup>4</sup>

**Dilation**. A transformation that moves each point along the ray through the point emanating from a fixed center, and multiplies distances from the center by a common scale factor.

**Empirical probability model**. A probability model based on a data set for a random process in which the probability of a particular type or category of outcome equals the percentage of data points included in the category. Example: If a coin is tossed 10 times and 4 of the tosses are Heads, then the empirical probability of Heads in the empirical probability model is <sup>4</sup>/10 (equivalently 0.4 or 40%).

**Equivalent fractions**. Two fractions a/b and c/d that represent the same number.

**Expanded form.** A multidigit number is expressed in expanded form when it is written as a sum of single-digit multiples of powers of ten. For example, 643 = 600 + 40 + 3.

**First quartile**. For a data set with median *M*, the first quartile is the median of the data values less than *M*. Example: For the data set  $\{1, 3, 6, 7, 10, 12, 14, 15, 22, 120\}$ , the first quartile is 6.<sup>5</sup> *See also* median, third quartile, interquartile range. **Fraction**. A number expressible in the form a/b where *a* is a whole number and *b* is a positive whole number. (The word *fraction* in these standards always refers to a nonnegative number.) *See also* rational number.

**Independently combined probability models**. Two probability models are said to be combined independently if the probability of each ordered pair in the combined model equals the product of the original probabilities of the two individual outcomes in the ordered pair.

**Integer**. A number expressible in the form a or -a for some whole number a.

**Interquartile Range**. A measure of variation in a set of numerical data, the interquartile range is the distance between the first and third quartiles of the data set. Example: For the data set  $\{1, 3, 6, 7, 10, 12, 14, 15, 22, 120\}$ , the interquartile range is 15 - 6 = 9. See also first quartile, third quartile.

Laws of arithmetic. See Table 3 in this Glossary.

Line plot. See dot plot.

**Mean**. A measure of center in a set of numerical data, computed by adding the values in a list and then dividing by the number of values in the list.<sup>6</sup> Example: For the data set {1, 3, 6, 7, 10, 12, 14, 15, 22, 120}, the mean is 21.

**Mean absolute deviation**. A measure of variation in a set of numerical data, computed by adding the distances between each data value and the mean, then dividing by the number of data values. Example: For the data set {2, 3, 6, 7, 10, 12, 14, 15, 22, 120}, the mean absolute deviation is 20.

**Median**. A measure of center in a set of numerical data. The median of a list of values is the value appearing at the center of a sorted version of the list—or the mean of the two central values, if the list contains an even number of values. Example: For the data set {2, 3, 6, 7, 10, 12, 14, 15, 22, 90}, the median is 11.

<sup>&</sup>lt;sup>3</sup> Adapted from Wisconsin Department of Public Instruction, <u>http://dpi.wi.gov/standards/mathglos.html</u>, accessed March 2, 2010.

<sup>4</sup> Adapted from Wisconsin Department of Public Instruction, op. cit..

<sup>&</sup>lt;sup>5</sup> Many different methods for computing quartiles are in use. The method defined here is sometimes called the Moore and McCabe method. See Langford, E., "Quartiles in Elementary Statistics," *Journal of Statistics Education* Volume 14, Number 3 (2006),

<sup>&</sup>lt;sup>6</sup> To be more precise, this defines the *arithmetic mean*.

Multiplication and division within 100. Multiplication or division of whole numbers with whole number answers, and

with product or dividend at most 100. Example:  $72 \div 8 = 9$ .

Multiplicative inverses. Two numbers whose product is 1 are multiplicative inverses of one another. Example:  $\frac{3}{4}$  and  $\frac{4}{3}$ 

are multiplicative inverses of one another because  $3/4 \times 4/3 = 4/3 \times 3/4 = 1$ .

**Properties of equality**. See Table 4 in this Glossary.

Properties of inequality. See Table 5 in this Glossary.

**Properties of operations**. Associativity and commutativity of addition and multiplication, distributivity of multiplication over addition, the additive identity property of 0, and the multiplicative identity property of 1. See Table 3 in this Glossary.

**Probability**. A number between 0 and 1 used to quantify likelihood for processes that have uncertain outcomes (such as tossing a coin, selecting a person at random from a group of people, tossing a ball at a target, testing for a medical condition).

**Rational number**. A number expressible in the form a/b or -a/b for some fraction a/b. The rational numbers include the integers.

**Related fractions**. Two fractions are said to be related if one denominator is a factor of the other.<sup>7</sup>

**Rigid motion**. A transformation of points in space consisting of one or more translations, reflections, and/or rotations. Rigid motions are here assumed to preserve distances and angle measures.

**Sample space**. In a probability model for a random process, a list of the individual outcomes that are to be considered. **Scatter plot**. A graph in the coordinate plane representing a set of bivariate data. For example, the heights and weights of a group of people could be displayed on a scatter plot.<sup>8</sup>

**Similarity transformation**. A rigid motion followed by a dilation.

**Tape diagrams**. Drawings that look like a segment of tape, used to illustrate number relationships. Also known as strip diagrams, bar models or graphs, fraction strips, or length models.

Teen number. A whole number that is greater than or equal to 11 and less than or equal to 19.

**Third quartile**. For a data set with median M, the third quartile is the median of the data values greater than M. Example: For the data set {2, 3, 6, 7, 10, 12, 14, 15, 22, 120}, the third quartile is 15. See also median, first quartile, interquartile range. **Uniform probability model**. A probability model in which the individual outcomes all have the same probability (1/N if there are N individual outcomes in the sample space). If a given type of outcome consists of M individual outcomes, then the probability of that type of outcome is M/N. Example: if a uniform probability model is used to model the process of randomly selecting a person from a class of 32 students, and if 8 of the students are left-handed, then the probability of randomly selecting a left-handed student is 8/32 (equivalently 1/4, 0.25 or 25%).

Whole numbers. The numbers 0, 1, 2, 3, ....

<sup>&</sup>lt;sup>7</sup> See Ginsburg, Leinwand and Decker (2009), Informing Grades 1-6 Mathematics Standards Development: What Can Be Learned from High-Performing Hong Kong, Korea, and Singapore?, Table A1, p. A-5, grades 3 and 4.

<sup>&</sup>lt;sup>8</sup> Adapted from Wisconsin Department of Public Instruction, op. cit..

#### TABLE 1. Common addition and subtraction situations.<sup>9</sup>

	Result Unknown	Change Unknown	Start Unknown
Add to	Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now? 2 + 3 = ?	Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two? 2 + ? = 5	Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before? ? + 3 = 5
Take from	Five apples were on the table. I ate two apples. How many apples are on the table now? 5-2=?	Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? 5 - ? = 3	Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before? ?-2 = 3

	Total Unknown	Addend Unknown	Both Addends Unknown <sup>10</sup>
Put Together/ Take Apart <sup>11</sup>	Three red apples and two green apples are on the table. How many apples are on the table? 3 + 2 = ?	Five apples are on the table. Three are red and the rest are green. How many apples are green? 3 + ? = 5, 5 - 3 = ?	Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? 5 = 0 + 5, 5 = 5 + 0 5 = 1 + 4, 5 = 4 + 1 5 = 2 + 3, 5 = 3 + 2
			3 1 3,3 3 1 1

	Difference Unknown	Bigger Unknown	Smaller Unknown
	("How many more?" version):	(Version with "more"):	(Version with "more"):
	Lucy has two apples. Julie has five apples. How many more apples does Julie have than Lucy?	Julie has three more apples than Lucy. Lucy has two apples. How many apples does Julie have?	Julie has three more apples than Lucy. Julie has five apples. How many apples does Lucy have?
12		(Version with "fewer"):	(Version with "fewer"):
Compare <sup>12</sup>	("How many fewer?" version): Lucy has two apples. Julie has five apples. How many fewer apples	Lucy has 3 fewer apples than Julie. Lucy has two apples. How many apples does Julie have?	Lucy has 3 fewer apples than Julie. Julie has five apples. How many apples does Lucy have?
	does Lucy have than Julie? 2 + ? = 5, 5 - 2 = ?	2+3-?, 3+2-?	5-5-2, $2+5-5$

<sup>&</sup>lt;sup>9</sup> Adapted from Box 2-4 of National Research Council (2009, op. cit., pp. 32, 33).

<sup>&</sup>lt;sup>10</sup> These *take apart* situations can be used to show all the decompositions of a given number. The associated equations, which have the total on the left of the equal sign, help children understand that the = sign does not always mean *makes* or *results in* but always does mean *is the same number as*.

<sup>&</sup>lt;sup>11</sup> Either addend can be unknown, so there are three variations of these problem situations. Both Addends Unknown is a productive extension of this basic situation especially for small numbers less than or equal to 10.

<sup>&</sup>lt;sup>12</sup> For the Bigger Unknown or Smaller Unknown situations, one version directs the correct operation (the version using *more* for the bigger unknown and using *less* for the smaller unknown). The other versions are more difficult.
TABLE 2. Common multiplication and division situations.<sup>13</sup>

	Unknown Product	Group Size Unknown ("How many in each group?" Division)	Number of Groups Unknown ("How many groups?" Division)
	3 × 6 = ?	$3 \times ? = 18$ and $18 \div 3 = ?$	$? \times 6 = 18 \text{ and } 18 \div 6 = ?$
Equal Groups	There are 3 bags with 6 plums in each bag. How many plums are there in all? <i>Measurement example</i> . You need 3 lengths of string, each 6 inches long. How much string will you need altogether?	If 18 plums are shared equally into 3 bags, then how many plums will be in each bag? <i>Measurement example</i> . You have 18 inches of string, which you will cut into 3 equal pieces. How long will each piece of string be?	If 18 plums are to be packed 6 to a bag, then how many bags are needed? <i>Measurement example</i> . You have 18 inches of string, which you will cut into pieces that are 6 inches long. How many pieces of string will you have?
Arrays, <sup>14</sup> Area <sup>15</sup>	There are 3 rows of apples with 6 apples in each row. How many apples are there? <i>Area example</i> . What is the area of a 3 cm by 6 cm rectangle?	If 18 apples are arranged into 3 equal rows, how many apples will be in each row? <i>Area example</i> . A rectangle has area 18 square centimeters. If one side is 3 cm long, how long is a side next to it?	If 18 apples are arranged into equal rows of 6 apples, how many rows will there be? <i>Area example.</i> A rectangle has area 18 square centimeters. If one side is 6 cm long, how long is a side next to it?
Compare	A blue hat costs \$6. A red hat costs 3 times as much as the blue hat. How much does the red hat cost? <i>Measurement example</i> . A rubber band is 6 cm long. How long will the rubber band be when it is stretched to be 3 times as long?	A red hat costs \$18 and that is 3 times as much as a blue hat costs. How much does a blue hat cost? <i>Measurement example</i> . A rubber band is stretched to be 18 cm long and that is 3 times as long as it was at first. How long was the rubber band at first?	A red hat costs \$18 and a blue hat costs \$6. How many times as much does the red hat cost as the blue hat? <i>Measurement example</i> . A rubber band was 6 cm long at first. Now it is stretched to be 18 cm long. How many times as long is the rubber band now as it was at first?
General	$a \times b = ?$	$a \times ? = p$ and $p \div a = ?$	$? \times b = p \text{ and } p \div b = ?$

<sup>&</sup>lt;sup>13</sup> The first examples in each cell are examples of discrete things. These are easier for students and should be given before the measurement examples.

<sup>&</sup>lt;sup>14</sup> The language in the array examples shows the easiest form of array problems. A harder form is to use the terms rows and columns: The apples in the grocery window are in 3 rows and 6 columns. How many apples are in there? Both forms are valuable.

window are in 3 rows and 6 columns. How many apples are in there? Both forms are valuable. <sup>15</sup> Area involves arrays of squares that have been pushed together so that there are no gaps or overlaps, so array problems include these especially important measurement situations.

**TABLE 3**. The laws of arithmetic, including the properties of operations (identified with  $^{\circ}$ ). Here *a*, *b* and *c* stand for arbitrary numbers in a given number system. The laws of arithmetic apply to the rational number system, the real number system, and the complex number system.

°Associative law of addition	(a+b) + c = a + (b+c)
°Commutative law of addition	a + b = b + a
°Additive identity property of 0	a + 0 = 0 + a = a
Existence of additive inverses	For every <i>a</i> there exists $-a$ so that $a + (-a) = (-a) + a = 0$ .
°Associative law of multiplication	$(a \times b) \times c = a \times (b \times c)$
°Commutative law of multiplication	$a \times b = b \times a$
°Multiplicative identity property of 1	$a \times 1 = 1 \times a = a$
Existence of multiplicative inverses	For every $a \neq 0$ there exists $1/a$ so that $a \times 1/a = 1/a \times a = 1$ .
°Distributive law of multiplication over addition	$a \times (b+c) = a \times b + a \times c$

**TABLE 4**. The properties of equality. Here *a*, *b* and *c* stand for arbitrary numbers in the rational, real, or complex number systems.

Reflexive property of equality	a = a
Symmetric property of equality	If $a = b$ , then $b = a$ .
Transitive property of equality	If $a = b$ and $b = c$ , then $a = c$ .
Addition property of equality	If $a = b$ , then $a + c = b + c$ .
Subtraction property of equality	If $a = b$ , then $a - c = b - c$ .
Multiplication property of equality	If $a = b$ , then $a \times c = b \times c$ .
Division property of equality	If $a = b$ and $c \neq 0$ , then $a \div c = b \div c$ .
Substitution property of equality	If $a = b$ , then $b$ may be substituted for $a$ in any expression containing $a$ .

**TABLE 5**. The properties of inequality. Here *a*, *b* and *c* stand for arbitrary numbers in the rational or real number systems.

Exactly one of the following is true: $a < b$ , $a = b$ , $a > b$ .	
If $a > b$ and $b > c$ then $a > c$ .	
If $a > b$ , then $b < a$ .	
If $a > b$ , then $-a < -b$ .	1
If $a > b$ , then $a \pm c > b \pm c$ .	
If $a > b$ and $c > 0$ , then $a \times c > b \times c$ .	
If $a > b$ and $c < 0$ , then $a \times c < b \times c$ .	
If $a > b$ and $c > 0$ , then $a \div c > b \div c$ .	
If $a > b$ and $c < 0$ , then $a \div c < b \div c$ .	
	1

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Common Core State Standards | Mathematics | Glossary  $\ensuremath{\textbf{SDE}}$ 

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### SUBJECT

Proposed Rule- IDAPA 08.02.03.004, Rules Governing Thoroughness, Incorporated by Reference- Common Core Standards for English Language Arts

## APPLICABLE STATUTE, RULE, OR POLICY

IDAPA 08.02.03.004, Rules of the Board Governing Thoroughness Section 33-1612, Idaho Code

#### BACKGROUND/DISCUSSION

The Common Core Standards have been developed as a joint effort between the Council of Chief State School Officers (CCSSO) and the National Governors Association (NGA). The goal of the work was to ensure that students graduating from high school are college and career ready. The development team vowed to make the standards clearer, higher, and fewer. The work was started during the spring of 2009 and we have been given draft documents for review along this process.

Although these standards will be common across the nation, Idaho may add up to 15% unique state goals and objectives to be incorporated into the document after the June public comment period to better serve Idaho students.

These standards are entirely new; therefore, a document with strikethrough as typically attached is not included this time.

#### **ATTACHMENTS**

Attachment 1 – Proposed change of IDAPA 08.02.03.004Page 3Attachment 2 – Introduction to the Draft Common Core StandardsPage 5Attachment 3 – Common Core State Standards for English Language ArtsPage 13

### STAFF COMMENTS AND RECOMMENDATIONS

A final version of the Common Core Standards will be brought back to the board for approval at the completion of the comment period. It is expected that there will be no substantial changes from those submitted for approval at this time.

#### **BOARD ACTION**

A motion to approve the Idaho Content Standards for English Language Arts as submitted.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No \_\_\_\_

A motion to approve the proposed rule change to IDAPA 08.02.03.004, Rules Governing Thoroughness to incorporate by reference the Idaho Content Standards for English Language Arts.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_ No \_\_\_\_

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#### 004. INCORPORATION BY REFERENCE.

The following documents are incorporated into this rule:

(3-30-07)

01. The Idaho Content Standards. The Idaho Content Standards as adopted by the State Board of Education. Individual subject content standards are adopted in various years in relation to the curricular materials adoption schedule. Copies of this document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (SD 2010)(\_\_\_\_)

a.	Driver Education, as revised and adopted on August 21, 2008.	(SD 2010)
b.	Health, as revised and adopted on April 17, 2009.	(SD 2010)
c.	Humanities Categories:	(SD 2010)
i.	Art, as revised and adopted on April 17, 2009;	(SD 2010)
ii.	Dance, as revised and adopted on April 17, 2009;	(SD 2010)
iii.	Drama, as revised and adopted on April 17, 2009;	(SD 2010)
iv.	Interdisciplinary, as revised and adopted on April 17, 2009;	(SD 2010)
v.	Music, as revised and adopted on April 17, 2009;	(SD 2010)
vi.	World languages, as revised and adopted on April 17, 2009.	(SD 2010)
d.	English Language Arts, Part I: reading, as revised and adopted on August 21, 2008	<u>April 22,</u>
	<u>2010</u> . (S	<del>D 2010)()</del>
e.	Language Arts, Part II: language arts, as revised and adopted on August 21, 2008.	(SD 2010)
<u>fe</u> .	Limited English Proficiency, as revised and adopted on August 21, 2008.	(SD 2010)
<u>gf</u> .	Mathematics, as revised and adopted on August 21, 2008April 22, 2010.	<del>D 2010)()</del>
hg.	Physical Education, as revised and adopted on April 17, 2009.	(SD 2010)
<u>ih</u> .	Science, as revised and adopted on April 17, 2009.	(SD 2010)
<u>ji</u> .	Social Studies, as revised and adopted on April 17, 2009.	(SD 2010)
<u>j.</u>	Information and Communication Technology, as revised and adopted on April 22,	2010 ()

**02.** The Idaho English Language Development Standards. The Idaho English Language Development Standards as adopted by the State Board of Education on August 10, 2006. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

03. The Limited English Proficiency Program Annual Measurable Achievement Objectives (AMAOs) and Accountability Procedures. The Limited English Proficiency Program Annual Measurable Achievement Objectives and Accountability Procedures as adopted by the State Board of Education on August 10, 2006. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

**04.** The Idaho English Language Assessment (IELA) Achievement Standards. The Idaho English Language Assessment (IELA) Achievement Standards as adopted by the State Board of Education on August 10, 2006. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

**05.** The Idaho Standards Achievement Tests (ISAT) Achievement Standards. Achievement Standards as adopted by the State Board of Education on May 30, 2007. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

**06.** The Idaho Extended Content Standards. The Idaho Extended Content Standards as adopted by the State Board of Education on April 17, 2008. Copies of the document can be found at the State Board of Education website at http://www.boardofed.idaho.gov. (SD 0802)

**07. The Idaho Alternative Assessment Extended Achievement Standards**. Alternative Assessment Extended Achievement Standards as adopted by the State Board of Education on February 28, 2008. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (SD 0802)

**08.** The Idaho Standards for Infants, Toddlers, Children, and Youth Who Are Deaf or Hard of Hearing. As adopted by the State Board of Education on October 11, 2007. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

**09.** The Idaho Standards for Infants, Toddlers, Children, and Youth Who Are Blind or Visually Impaired. As adopted by the State Board of Education on October 11, 2007. Copies of the document can be found on the State Board of Education website at http://www.boardofed.idaho.gov. (4-2-08)

## Introduction to the Draft Common Core Standards March 9, 2010

The Council of Chief State School Officers (CCSSO) and the National Governors Association Center for Best Practices (NGA Center) are pleased to present the draft Kindergarten-12 grade level Common Core State Standards documents that our organizations have produced on behalf of 48 states, two territories, and the District of Columbia. These English language arts and mathematics standards represent a set of expectations for student knowledge and skills that will result in high school graduates who are prepared for success in college and careers.

To develop these standards, CCSSO and the NGA Center worked with representatives from participating states, a wide range of educators, content experts, researchers, national organizations, and community groups. These drafts reflect their input, and we are grateful for the time and insight hundreds of individuals have contributed to the development of these important documents.

Now, we seek public comment on these draft documents and encourage input via our online survey available at <u>www.corestandards.org</u>. The public comment period will end on April 2, 2010.

After our work groups have had an opportunity to review all of the feedback from the general public and state-led reviews, they will produce final documents. It is expected that the final set of standards documents will be available in late spring 2010.

You will notice that the college- and career-readiness standards have been incorporated into this draft. The final English language arts and mathematics standards documents will include college- and career-readiness standards along with the K-12 grade level standards.

The criteria that we used to develop the college- and career-readiness standards, as well as these K-12 grade level standards are:

- Aligned with college and work expectations;
- Include rigorous content *and* application of knowledge through high-order skills;
- Build upon strengths and lessons of current state standards;
- Informed by top-performing countries, so that all students are prepared to succeed in our global economy and society; and,
- Evidence and/or research-based.

The following links provide more information about the <u>criteria</u> and <u>considerations</u> for standards development.

The standards development process has maximized the best practices and research from across the nation and the world. While we have used all available research to shape these documents, we recognize that there is more to be learned about the most essential knowledge for student success. As new research is conducted and we evaluate the

implementation of the common core standards, we plan to revise the standards accordingly on a set review cycle.

Our organizations would also like to thank our advisory group, which provides advice and guidance on this initiative. Members of this group include experts from Achieve, Inc., ACT, the College Board, the National Association of State Boards of Education, and the State Higher Education Executive Officers.

## **Application of Common Core State Standards for English Language Learners**

English language learners (ELLs) must be held to the same level of standards expected of students who are already proficient in English. However, these students are acquiring both English language proficiency and content area knowledge concurrently, so some students will require additional time, and all will require appropriate instructional support and aligned assessments.

ELLs are a heterogeneous group with differences in ethnic background, first language, socioeconomic status, quality of prior schooling, and levels of English language proficiency. Effectively educating these students requires diagnosing each student instructionally, adjusting instruction accordingly, and closely monitoring student progress. For example, ELLs who are literate in a first language that shares cognates with English can apply first-language vocabulary knowledge when reading in English; likewise ELLs with high levels of schooling can bring to bear conceptual knowledge developed in their first language when reading in a second language. However, ELLs with limited or interrupted schooling will need to acquire background knowledge prerequisite to educational tasks at hand. Those ELLs who are newcomers to U.S. schools will need sufficiently scaffolded instruction and assessments to make sense of content delivered in a second language and to display this content knowledge.

## **English Language Arts**

The common core standards for English language arts (ELA) articulate rigorous gradelevel expectations in the areas of speaking, listening, reading, and writing to prepare all students to be college and career ready, including English language learners. Secondlanguage learners also will benefit from instruction about how to negotiate situations outside of those settings so they are able to participate on equal footing with native speakers in all aspects of social, economic, and civic endeavors.

ELLs bring with them many resources that enhance their education and can serve as resources for schools and society. Many ELLs have first language and literacy knowledge and skills that boost their acquisition of language and literacy in a second language; additionally, they bring an array of talents and cultural practices and perspectives that enrich our schools and our society. Teachers must build on this enormous reservoir of talent and provide those students who need it with additional time and appropriate instructional support. This includes language proficiency standards that teachers can use in conjunction with the ELA standards to assist ELLs in becoming proficient and literate in English.

To help ELLs meet high academic standards in language arts it is essential that they have access to:

• Teachers and personnel at the school and district levels who are well prepared and qualified to support ELLs while taking advantage of the many strengths and skills they bring to the classroom;

- Literacy-rich school environments where students are immersed in a variety of language experiences;
- Instruction that develops foundational skills in English that enable ELLs to participate fully in grade-level coursework;
- Coursework that prepares ELLs for postsecondary education or the workplace yet is made comprehensible for students learning content in a second language (through specific pedagogical techniques and additional resources);
- Opportunities for classroom discourse and interaction that are well-designed to enable ELLs to develop communicative strengths in language arts;
- Ongoing assessment and feedback to guide learning; and
- Speakers of English who know the language well enough to provide ELLs with models and support.

## Mathematics

ELLs can participate in mathematical discussions as they learn English. Mathematics instruction for ELL students should draw on multiple resources and modes available in classrooms—such as objects, drawings, inscriptions, and gestures—as well as home languages and mathematical experiences outside of school. While mathematics instruction for ELLs should address mathematical discourse and academic language, this involves much more than vocabulary instruction.

Language is a resource for learning mathematics; it is not only a tool for communicating, but also a tool for thinking and reasoning mathematically. All languages and language varieties (e.g., different dialects, home or everyday ways of talking, vernacular, slang) provide resources for mathematical thinking, reasoning, and communicating.

Regular and active participation in the classroom—not only reading and listening but also discussing, explaining, writing, representing, and presenting—is critical to the success of ELLs in mathematics. Research has shown that ELLs can produce explanations, presentations, etc. and participate in classroom discussions *as they are learning English*.

ELLs, like English-speaking students, require regular access to teaching practices that are most effective for improving student achievement. Mathematical tasks should be kept at high cognitive demand; teachers and students should attend explicitly to concepts; and students should wrestle with important mathematics.

Overall, research suggests that:

- Language switching can be swift, highly automatic, and facilitate rather than inhibit solving word problems in the second language, as long as the student's language proficiency is sufficient for understanding the text of the word problem.
- Instruction should ensure that students understand the text of word problems before they attempt to solve them.
- Instruction should include a focus on "mathematical discourse" and "academic language" because these are important for ELLs. Although it is critical that

students who are learning English have opportunities to communicate mathematically, this is not primarily a matter of learning vocabulary. Students learn to participate in mathematical reasoning, not by learning vocabulary, but by making conjectures, presenting explanations, and/or constructing arguments.

• While vocabulary instruction is important, it is not sufficient for supporting mathematical communication. Furthermore, vocabulary drill and practice are not the most effective instructional practices for learning vocabulary. Research has demonstrated that vocabulary learning occurs most successfully through instructional environments that are language-rich, actively involve students in using language, require that students both understand spoken or written words and also express that understanding orally and in writing, and require students to use words in multiple ways over extended periods of time. To develop written and oral communication skills, students need to participate in negotiating meaning for mathematical situations and in mathematical practices that require output from students.

## Application of Common Core State Standards for Students with Disabilities

The Common Core Standards articulate rigorous, grade-level expectations in the areas of English language arts and mathematics to prepare students to be college and career ready.

All students, including students with disabilities— students eligible under the Individuals with Disabilities Education Act (IDEA) — must be challenged to excel within the general curriculum and prepared for success in their post-school lives, including college and/ or careers. The common core state standards provide a historic opportunity to improve access to academic content standards for students with disabilities. The continued development of understanding about research-based instructional practices and a focus on their effective implementation will also help improve access to the common core state standards.

Students with disabilities are a heterogeneous group with one common characteristic: the presence of disabling conditions that significantly hinder their abilities to benefit from general education (IDEA 34 CFR §300.39, 2004). Therefore, *how* these high standards are taught and assessed is of the utmost importance in reaching this diverse group of students.

For special education students to meet high academic standards and to fully demonstrate their conceptual and procedural knowledge and skills in mathematics and English language arts, their instruction must incorporate supports and often times, accommodations, including:

- Special education supports and related services designed to meet the unique needs of these students and to enable their access to the general education curriculum (IDEA 34 CFR §300.34, 2004).
- An Individualized Education Program, which includes annual goals aligned with and chosen to facilitate their attainment of grade-level academic standards.
- Teachers and specialized instructional support personnel who are prepared and qualified to deliver high-quality, evidence-based, individualized instruction and support services.

Promoting a culture of high expectations for all students is a fundamental goal of the common core state standards. To participate with success in the general curriculum, students with disabilities, as appropriate, may be provided additional supports and services, such as:

- Instructional supports for learning, based on the principles of Universal Design for Learning, which foster student engagement by presenting information in multiple ways and allowing for diverse avenues of action and expression.
- Instructional accommodations —changes in materials or procedures— which do not change the standards but allow students to learn within the framework of the common core state standards.

• Assistive technology devices and services to ensure access to the general education curriculum and the common core state standards.

For some students with significant cognitive disabilities to access certain standards, those standards may need to be extended and/or adjusted. However, standards should be extended and/or adjusted only after students receive access to multiple means of learning and demonstrating knowledge. Any extensions and/ or adjustments must align with and retain the rigor and high expectations of the common core state standards.

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# COMMON CORE STATE STANDARDS FOR

# English Language Arts and Literacy in History/Social Studies & Science

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## Introduction

The Common Core State Standards for English Language Arts and Literacy in History/Social Studies and Science are the culmination of an extended, broadbased effort to fulfill the charge issued by the states to create the next generation of K–12 standards that help ensure that all students are college and career ready in literacy by no later than the end of high school. The Standards set requirements for English language arts (ELA) but also for reading, writing, speaking, listening, and language in the social and natural sciences. Just as students must learn to communicate effectively in a variety of content areas, so too must the Standards specify the literacy skills and understandings required for eventual college and career readiness in history, social studies, and science as well as ELA. By their structure, the Standards encourage curriculum makers to take a comprehensive approach that coordinates ELA courses with courses in other subject areas in order to help students acquire a wide range of ever more sophisticated knowledge and skills through reading, writing, speaking, and listening.

The present work, led by the Council of Chief State School Officers (CCSSO) and the National Governors Association (NGA), builds on the foundation laid by states in their decades-long work on crafting high-quality education standards, including their work on the American Diploma Project with Achieve. The *Standards* also draw on the most important international models as well as research and input from numerous sources, including scholars, assessment developers, professional organizations, and educators from kindergarten through college. In their design and content, the *Standards* represent a synthesis of the best elements of standards-related work to date and an important advance over that previous work.

As specified by CCSSO and NGA, the *Standards* are (1) research and evidence based, (2) aligned with college and work expectations, (3) rigorous, and (4) internationally benchmarked. A particular standard was included in the document only when the best available evidence indicated that its mastery was essential for students to be college and career ready in a twenty-first-century, globally competitive society. As new and better evidence emerges, the *Standards* will be revised accordingly.

The *Standards* are an extension of a prior initiative led by CCSSO and NGA to develop College and Career Readiness (CCR) standards in reading,

writing, speaking, listening, and language as well as in mathematics. The CCR Reading, Writing, and Speaking and Listening Standards, released in draft form in September 2009, serve, in revised form, as the backbone of the present document. Consistent across grades and disciplines, the CCR Standards create an essential unity within the document and a consistent point of reference for educators. Whether guiding third graders through a science unit or high school sophomores through a classic work of literature, teachers can look to the same CCR Standards—included in each section of this document—to help judge whether students are on course for being college and career ready. Grade-specific K–12 standards in reading, writing, speaking, listening, and language translate the broad (and, for the earliest grades, seemingly distant) aims of the CCR Standards into age- and attainment-appropriate terms.

While college and career readiness is the end point of the *Standards*—an ambitious goal in its own right—some students will reach that point before the end of high school. For those students who do complete the *Standards'* requirements before graduation, advanced work in such areas as literature, composition, language, and journalism should be available. It is beyond the scope of the *Standards* to describe what such advanced work should consist of, but it should provide the next logical step up from the college and career readiness baseline established here.

As a natural outgrowth of meeting the charge to define college and career readiness, the Standards also lay out a vision of what it means to be a literate person in the twenty-first century. Indeed, the skills and understandings students are expected to demonstrate have wide applicability outside the classroom or workplace. Students who meet the Standards readily undertake the close, attentive reading that is at the heart of understanding and enjoying complex works of literature. They habitually perform the critical reading necessary to pick carefully through the staggering amount of information available today in print and online. They actively seek the wide, deep, and thoughtful engagement with high-quality literary and informational texts that builds knowledge, enlarges experience, and broadens worldviews. They reflexively demonstrate the cogent reasoning and use of evidence that is essential to both private deliberation and responsible citizenship in a democratic republic. In short, students who master the Standards develop the skills in reading, writing, speaking, and listening that are the foundation for any creative and purposeful expression in language.

March 2010

#### Key Design Considerations

#### A focus on results rather than means

By focusing on required achievements, the *Standards* leave room for teachers, curriculum developers, and states to determine how those goals should be reached and what additional topics should be addressed. Thus, the *Standards* do not mandate such things as a particular writing process or specify the full range of metacognitive strategies that students may need to use to monitor and direct their thinking and learning. Teachers are thus free to provide students with whatever tools and knowledge their professional judgment and experience identify as most helpful for meeting the goals set out in the *Standards*.

#### An integrated model of literacy

Although the *Standards* are divided into Reading, Writing, Speaking and Listening, and Language strands for conceptual clarity, the processes of communication are closely connected, as reflected throughout this document. For example, Writing Standard #9 requires that students be able to write about what they read. Likewise, Speaking and Listening Standard #4 sets the expectation that students will share findings from their research.

Language conventions and vocabulary are treated in detail in a separate strand not because those skills should be taught in isolation from other communication activities but because their importance extends beyond writing and reading, where standards documents often place such skills. Many of the conventions must be observed in standard spoken as well as written English, and students, particularly the youngest ones, encounter and acquire new words through conversations as well as through texts. To signal the link between the Language skills and the rest of the standards even more strongly, some skills associated with language use are also found in other strands when appropriate. Reading Standard #4, for example, concerns determining word meanings, and Writing Standard #5 includes editing among the skills students must be able to use to strengthen writing.

#### Research and media skills integrated into the Standards as a whole

To be ready for college, workforce training, and life in a technological society, students need the ability to gather, comprehend, evaluate, synthesize, report on, and create a high volume and extensive range of print and nonprint texts in media forms old and new. The need to research and to consume and produce media is embedded into every element of today's

curriculum; in like fashion, the associated skills and understandings are embedded throughout the *Standards* rather than treated in a separate section.

#### Shared responsibility for students' literacy development

The *Standards* establish that instruction in reading, writing, speaking, listening, and language is a shared responsibility. The *Standards* present reading instruction in K–5 as fully integrative, including a rich blend of stories, drama, and poetry as well as informational texts from a range of content areas. ELA-specific standards for grade 6 and above include fiction, poetry, and drama but also literary nonfiction (e.g., speeches, essays, and historical documents with significant cultural importance and literary merit). Literacy standards specific to history/social studies and science for grade 6 and above are predicated on teachers in these areas using their unique disciplinary expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields.

Part of the motivation behind the interdisciplinary approach to literacy promulgated by the *Standards* is extensive research establishing the need for college- and career-ready students to be proficient in reading complex informational text independently in a variety of content areas. Most of the required reading in college and workforce training programs is informational in structure and challenging in content; postsecondary education programs typically provide students with both a higher volume of such reading than is generally required in K–12 schools and comparatively little scaffolding.

The *Standards* are not alone in calling for a special emphasis on informational text. The 2009 reading framework of the National Assessment of Educational Progress (NAEP) requires a high and increasing proportion of informational text on its assessment as students advance through the grades.

#### Distribution of Literary and Informational Passages by Grade in the 2009 NAEP Reading Framework

Grade	Literary	Informational	
4	50%	50%	
8	45%	55%	
12	30%	70%	

The *Standards* aim to align instruction with this framework so that many more students can meet the demands of college and career readiness. In K– 5, the *Standards* balance the teaching of literature with informational text, including texts in history/social studies and science. Fulfilling the standards for 6–12 ELA requires much greater attention to literary nonfiction than has been traditional. The NAEP framework also makes clear that significant reading of informational texts should take place outside of the ELA classroom in order for students to be ready for college and careers. The NAEP framework applies the sum of all the reading students do in a grade, not just their reading in the ELA context. The percentages do not imply, for example, that high school ELA teachers must teach 70 percent informational text; they demand instead that a great deal of reading should occur in other disciplines. To measure students' growth toward college and career readiness, assessments aligned with the *Standards* should adhere to the distribution of texts across grades cited in the NAEP framework.

#### A progression of writing toward college and career readiness

NAEP likewise outlines a distribution across the grades of the core purposes and types of student writing. Similar to the *Standards*, the NAEP framework cultivates the development of three mutually reinforcing writing capacities: writing to persuade, to explain, and to convey real or imagined experience. Evidence concerning the demands of college and career readiness gathered during development of the *Standards* concurs with NAEP's shifting emphases: in grades 9–12 in the *Standards*, students continue writing in all three forms but focus overwhelmingly on writing to argue and to inform or explain.

#### Distribution of Communicative Purposes by Grade in the 2011 NAEP Writing Framework

Grade	To Persuade	To Explain	To Convey Experience
4	30%	35%	35%
8	35%	35%	30%
12	40%	40%	20%

It follows that writing assessments aligned with the *Standards* should adhere to the distribution of writing purposes across grades outlined by NAEP.

#### Grade levels for K-8; grade bands for 9-10 and 11-12

The *Standards* use individual grade levels in kindergarten through grade 8 to provide useful specificity; the *Standards* use two-year bands in grades 9–12 to allow schools, districts, and states flexibility in high school course design.

#### What is not covered by the Standards

The *Standards* should be recognized for what they are *not* as well as what they are. Three of the most important intentional design limitations are as follows:

- The *Standards* define what all students are expected to know and be able to do but not *how* teachers should teach. The *Standards* must be complemented by a well-developed, content-rich curriculum consistent with the expectations laid out in this document.
- 2) While the *Standards* do attempt to focus on what is most essential, they do not describe all that *can* or *should* be taught. A great deal is left to the discretion of teachers and curiculum developers. The aim of the *Standards* is to articulate the fundamentals, not to set out an exhaustive list nor a set of restrictions that limits what can be taught beyond what is specified herein.
- 3) The *Standards* set grade-level standards but do not define the intervention methods or materials necessary to support students who are well below or well above grade-level expectations. No set of grade-level standards can fully reflect the great variety in achievement levels of students in any given classroom. However, the *Standards* do provide clear signposts along the way to the goal of college and career readiness for all students.

## The Student Who is College and Career Ready in Reading, Writing, Speaking, Listening, and Language

The descriptions that follow are not standards themselves, but instead offer a portrait of students who meet the standards set out in this document. As students advance through the grades and master the standards in reading, writing, speaking, listening, and language, they are able to exhibit with increasing fullness and regularity these capacities of the literate individual.

#### • They demonstrate independence.

Students can, without significant scaffolding or support, comprehend and evaluate complex texts across a range of types and disciplines, and they can construct effective arguments and clearly convey intricate or multifaceted information. Likewise, students are independently able to discern a speaker's key points and request clarification if something is not understood. They ask relevant questions, build on others' ideas, articulate their own ideas, and ask for confirmation that they have been understood. Without prompting, they observe language conventions, determine word meanings, attend to the connotations of words, and acquire new vocabulary.

#### • They build strong content knowledge.

Students establish a base of knowledge across a wide range of subject matter by engaging with works of quality and substance. They become proficient in new areas through research and study. They read purposefully and listen attentively to gain both general knowledge and discipline-specific expertise. They refine and share their knowledge through writing and speaking.

## • They respond to the varying demands of audience, task, purpose, and discipline.

Students consider their communication in relation to audience, task, purpose, and discipline. They appreciate nuances, such as how the composition of an audience should affect tone when speaking and how the connotations of words affect meaning. They also know that different disciplines call for different types of evidence (e.g., documentary evidence in history, experimental evidence in the sciences).

#### • They comprehend as well as critique.

Students are engaged and open-minded—but discerning—readers and listeners. They work diligently to understand precisely what an author or

speaker is saying, but they also question an author's or speaker's assumptions and assess the veracity of claims.

#### • They value evidence.

Students cite specific evidence when offering an oral or written interpretation of a text. They use relevant evidence when supporting their own points in writing and speaking, making their reasoning clear to the reader or listener, and they constructively evaluate others' use of evidence.

• They use technology and digital media strategically and capably.

Students employ technology thoughtfully to enhance their reading, writing, speaking, listening, and language use. They tailor their searches online to acquire useful information efficiently, and they integrate what they learn using technology with what they learn offline. They are familiar with the strengths and limitations of various technological tools and mediums and can select and use those best suited to their communication goals.

#### They come to understand other perspectives and cultures.

Students appreciate that the twenty-first-century classroom and workplace are settings in which people from often widely divergent cultures and who represent diverse experiences and perspectives must learn and work together. Students actively seek to understand other perspectives and cultures through reading and listening, and they are able to communicate effectively with people of varied backgrounds. They evaluate other points of view critically and constructively. Through reading great classic and contemporary works of literature representative of a variety of periods, cultures, and worldviews, students can vicariously inhabit worlds and have experiences much different than their own.

## How to Read This Document

## **Overall Document Organization and Main Features**

The *Standards* comprise three main sections: a comprehensive K–5 section and two content area–specific sections for grades 6–12, one in English language arts and one in history/social studies and science.

Each section is divided into Reading, Writing, Speaking and Listening, and Language *strands*. Each strand is headed by a set of *College and Career Readiness (CCR) Standards* that is identical across all grades and content areas. The uniformity of the CCR Standards provides a consistent point of reference for educators, facilitating schoolwide goal setting and professional development.

#### CCR Standards: The basis for the K-12 Standards

Standards for each grade within K–8 and for grades 9–10 and 11–12 follow the College and Career Readiness (CCR) Standards in each strand. Each *grade-specific standard* (as these standards will be collectively referred to) corresponds to a particular CCR Standard. Put another way, each CCR Standard has an accompanying grade-specific standard translating the broader CCR statement into grade-appropriate terms.

#### Who is responsible for which portion of the Standards

A single K–5 section sets CCR and grade-specific standards for reading, writing, speaking, listening, and language across the curriculum, reflecting the fact that most or all of the instruction students receive in these grades comes from one elementary school teacher. Grades 6–12 are covered in two content area–specific sections, the first for the English language arts teacher and the second for the history/social studies and the science teacher. Each of these sections uses the same CCR Standards but also includes discipline-specific standards tuned to the literacy requirements of these disciplines. It is important to note that the literacy standards in history/social studies and science are meant to complement rather than supplant content standards in those disciplines.

#### Key Features of the Strands

#### Reading: Text complexity and the growth of comprehension

To foster students' ability to comprehend literary and informational texts of steadily increasing complexity, the *Standards* (starting formally in grade 2) define what proportion of the texts students read each year should come from a particular text complexity grade band (2–3, 4–5, 6–8, 9–10, or 11–12). Whatever they are reading, students must also show a steadily increasing ability to discern more from and make fuller use of text, including making an increasing number of connections among ideas and between texts, considering a wider range of textual evidence, and becoming more sensitive to inconsistencies, ambiguities, and poor reasoning in texts.

#### Writing: Text types, responding to sources, and research

The *Standards* acknowledge the fact that whereas some writing skills, such as the ability to reflect purpose, task, and audience, are important for many types of writing, others are more properly part of writing narratives, informative and explanatory texts, or arguments. Beginning at grade 4, the *Standards* specify the sorts of writing over extended and shorter time frames that students in each grade are to produce in response to sources. Because of the centrality of writing to most forms of inquiry, research standards are primarily included in this strand.

#### Speaking and Listening:

#### Flexible communication and interpersonal skills

Including but not limited to skills necessary for formal presentations, the Speaking and Listening standards require students to develop a range of broadly useful oral communication and interpersonal skills. Students must learn to sift through and evaluate multiple points of view, listen thoughtfully in order to build on and constructively question the ideas of others while contributing their own ideas, and, where appropriate, reach agreement and common goals through teamwork.

#### Language: Conventions and vocabulary

The Conventions standards in the Language strand include the essential "rules" of formal written and spoken English, but they also approach language as a matter of craft and informed choice among alternatives. The Vocabulary standards focus on both understanding words and their nuances and acquiring new words through conversation, reading, and being taught them directly.

#### Appendices

Appendix A contains supplementary material on reading text complexity, writing, speaking and listening, language conventions, and vocabulary. Appendix B consists of text exemplars illustrating the complexity, quality, and range of reading appropriate for various grade levels. Appendix C includes annotated writing samples demonstrating at least adequate performance at various grade levels.

# Standards for English Language Arts and Literacy in History/Social Studies & Science

K-5

## College and Career Readiness Standards for Reading

The K–5 standards on the following pages define what students should understand and be able to do in each grade and build toward the ten College and Career Readiness Standards.

#### Key Ideas and Details

- 1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- **2.** Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- **3.** Analyze in detail where, when, why, and how events, ideas, and characters develop and interact over the course of a text.

#### Craft and Structure

- 4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and explain how specific word choices shape meaning or tone.
- **5.** Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section or chapter) relate to each other and the whole.
- 6. Assess how point of view or purpose shapes the content and style of a text.

#### Integration of Knowledge and Ideas

- **7.** Synthesize and apply information presented in diverse ways (e.g., through words, images, graphs, and video) in print and digital sources in order to answer questions, solve problems, or compare modes of presentation.<sup>1</sup>
- **8.** Delineate and evaluate the reasoning and rhetoric within a text, including assessing whether the evidence provided is relevant and sufficient to support the text's claims.
- **9.** Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

#### Range and Level of Text Complexity

**10.** Read complex texts independently, proficiently, and fluently, sustaining concentration, monitoring comprehension, and, when useful, rereading.<sup>2</sup>

<sup>1</sup>Please see "Research to Build Knowledge" in Writing and "Comprehension and Collaboration" in Speaking and Listening for additional standards relevant to gathering, assessing, and applying information from print and digital sources. <sup>2</sup>Proficiency in this standard is measured by students' ability to read a range of appropriately complex texts in each grade as defined on page 14.

## Note on range and content of student reading

To build a foundation for college and career readiness, students must read widely and deeply from among a broad range of high-quality, increasingly challenging literary and informational texts. Through extensive reading of stories, dramas, poems, and myths from diverse cultures and different time periods, students gain literary and cultural knowledge as well as familiarity with various text structures and elements. By reading texts in history/social studies, science, and other disciplines, students build a foundation of knowledge in these fields that will also give them the background to be better readers in all content areas. Students can only gain this foundation when the curriculum is intentionally and coherently structured to develop rich content knowledge within and across grades. Students also acquire the habits of reading independently and closely, which are essential to their future success.

## Reading Standards for Literature K–5

Following are the standards for K–5, which relate to their College and Career Readiness counterparts by number. They offer a focus for instruction each year and help ensure that students gain adequate exposure to a range of texts and tasks. Rigor is also infused through the requirement that students read increasingly complex texts through the grades.

Kindergartners:		Grade 1 students:			Grade 2 students:	
Kej	Key Ideas and Details					
1.	With prompting and support, ask and answer questions about details and events in a text.	1.	Ask and answer questions about key details and events in a text.	1.	Ask and answer such questions as <i>who</i> , <i>what</i> , <i>where</i> , <i>when</i> , <i>why</i> , and <i>how</i> to demonstrate understanding of key details and events in a text.	
2.	Retell familiar stories.	2.	Retell stories, demonstrating understanding of the central message or lesson.	2.	Paraphrase stories, fables, folktales, or myths from diverse cultures and determine their lessons or morals.	
3.	Identify characters, settings, and key events in a story.	3.	Describe characters, settings, and key events in a story.	3.	Describe how characters in a story respond to key events and conflicts.	
Cra	ft and Structure					
4.	Ask questions about unknown words in a text.	4.	Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.	4.	Identify words and phrases (e.g., regular beats, rhymes, and repeated lines) that supply rhythm and meaning in a story, poem, or song.	
5.	Recognize common types of texts (e.g., storybooks, poems).	5.	Distinguish major categories of writing from each other (e.g., stories and poems), drawing on a wide reading of a range of text types.	5.	Refer to core elements of stories, plays, and myths, including characters, settings, and plots, when writing or speaking about a specific text.	
6.	Name the author and illustrator of a text and define the role of each.	6.	Identify who is speaking at various points in a story, myth, fable, or narrative poem.	6.	Distinguish between characters by speaking in a different voice for each character when reading aloud.	
Inte	egration of Knowledge and Ideas					
7.	Relate pictures and illustrations to the overall story in which they appear.	7.	Use pictures, illustrations, and details in a story to describe characters, events, or settings.	7.	Explain how images and illustrations contribute to and clarify a story.	
8.	(Not applicable to literature)	8.	(Not applicable to literature)	8.	(Not applicable to literature)	
9.	Compare and contrast the adventures of characters in familiar stories.	9.	Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures.	9.	Compare and contrast characters or events from different stories addressing similar themes.	
Range and Level of Text Complexity						
10.	Read emergent-reader literature texts with purpose and understanding.	10.	Read independently, proficiently, and fluently literature texts appropriately complex for grade 1.	10.	Read literature independently, proficiently, and fluently within the grades 2–3 text complexity band; read texts at the high end of the range with scaffolding as needed.	

## Reading Standards for Literature K–5

Grade 3 students:			Grade 4 students:		Grade 5 students:	
Key Ideas and Details						
1.	Ask and answer questions to demonstrate understanding of a text, explicitly using the text as the basis for the answers.	1.	Draw on details and examples from a text to support statements about the text.	1.	Quote from a text to support statements about the text.	
2.	Use key supporting details in stories, fables, folktales, or myths from diverse cultures to determine the lessons or morals.	2.	Summarize a text and derive a theme of a story, drama, or poem from details in the text.	2.	Determine a theme of a text, drawing on how characters in a story respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text.	
3.	Describe the main characters in a story (e.g., their traits, motivations, or feelings) and explain how they contribute to the sequence of events.	3.	Describe in detail a character, event, or setting, drawing on specific details in the text (e.g., from a character's thoughts, words, deeds, or interactions with others).	3.	Compare and contrast two or more characters, events, or settings in a text, drawing on specific details.	
Cra	ft and Structure					
4.	Interpret key words and phrases in a text, distinguishing literal from figurative language.	4.	Understand words and phrases in a text that allude to significant characters found in mythology (e.g., <i>Herculean</i> ), drawing on a wide reading of classic myths from a variety of cultures and periods.	4.	Identify how metaphors and similes as well as rhymes and other repetitions of sounds (e.g., alliteration) supply meaning and rhythm in a specific verse or stanza of a poem.	
5.	Demonstrate understanding of common features of legends, myths, and folk- and fairytales (e.g., heroes and villains; quests or challenges) when writing or speaking about classic stories from around the world.	5.	Explain major differences between poems and prose, and refer to the structural elements of poems (e.g., stanza, verse, rhythm, meter) when writing or speaking about specific poems.	5.	Explain major differences between drama and prose stories, and refer to the structural elements of drama (e.g., casts of characters, setting descriptions, dialogue, stage directions, acts, scenes) when writing or speaking about specific works of dramatic literature.	
6.	Distinguish their own point of view from those of characters in a story.	6.	Compare the point of view from which different stories are narrated, including the difference between first- and third-person narrations.	6.	Identify how a narrator's perspective or point of view influences how events are described.	
Inte	egration of Knowledge and Ideas					
7.	Use information from illustrations and other visual elements in a text with the words to develop an understanding of the setting, characters, and plot.	7.	Integrate information from several illustrations and other visual elements in a text with the words to develop an understanding of how the setting and characters change and the plot develops.	7.	Explain how images, sounds, and movements contribute to an animated or live-action adaptation of a story, comparing that version to what they "see" or "hear" from reading the text.	
8.	(Not applicable to literature)	8.	(Not applicable to literature)	8.	(Not applicable to literature)	
9.	Compare and contrast the plots, settings, and themes of stories written by the same author about the same or similar characters (e.g., in books from a series).	9.	Compare and contrast thematically similar tales, myths, and accounts of events from various cultures.	9.	Compare the treatment of similar ideas and themes (e.g., opposition of good and evil) as well as character types and patterns of events in myths and other traditional literature from different cultures.	
Range and Level of Text Complexity						
10.	Read literature independently, proficiently, and fluently within the grades 2–3 text complexity band; read "stretch" texts in the grades 4–5 text complexity band with scaffolding as needed.	10.	Read literature independently, proficiently, and fluently in the grades 4–5 text complexity band; read texts at the high end of the range with scaffolding as needed.	10.	Read literature independently, proficiently, and fluently within the grades 4–5 text complexity band; read "stretch" texts in the grades 6–8 text complexity band with scaffolding as needed.	

## Reading Standards for Informational Text K–5

	Kindergartners:Grade 1 students:Grade 2 stude		Grade 2 students:			
Ke	y Ideas and Details					
1.	With prompting and support, ask and answer questions about information and events a text.	1.	Ask and answer questions about key information and events in a text.	1.	Ask and answer such questions as <i>who</i> , <i>what</i> , <i>where</i> , <i>when</i> , <i>why</i> , and <i>how</i> to demonstrate understanding of key information and events in a text.	
2.	Identify the main topic and main ideas of a text.	2.	Identify the main topic, main ideas, and key details of a text.	2.	Identify the main focus of a multiparagraph text as well as that of specific paragraphs within the text.	
3.	With prompting and support, describe the connection between two events or ideas in a text.	3.	Describe the connection between two key events or ideas in a text.	3.	Describe the connection between two or more historical events or scientific concepts in a text.	
Cra	ft and Structure					
4.	Ask questions about unknown words in a text.	4.	Learn and determine the meanings of words and phrases encountered in text relevant to a <i>grade 1 topic or subject</i> <i>area</i> .	4.	Learn and determine the meanings of words and phrases encountered in text relevant to a <i>grade 2 topic or subject area</i> .	
5.	Locate basic information in a text.	5.	Describe how a text groups information into general categories (e.g., cows, pigs, and horses are <i>farm animals</i> ).	5.	Know and use various text features (e.g., captions, headings, tables of contents, glossaries, indexes, electronic menus, icons) to locate key facts or information.	
6.	Name the author and illustrator of a text and define the role of each.	6.	Distinguish between information provided by pictures or illustrations and that provided by the words in a text.	6.	Identify the main purpose of a text, including what question the author aims to answer or what the author aims to explain or describe.	
Inte	egration of Knowledge and Ideas					
7.	Relate pictures or illustrations to the overall text in which they appear.	7.	Use pictures, illustrations, and details in a text to describe the key ideas.	7.	Explain how images and illustrations contribute to and clarify a text.	
8.	With prompting and support, recognize cause-and-effect relationships in a text.	8.	Identify cause-and-effect relationships in a text.	8.	Describe how specific causes link key events or ideas together in a text.	
9.	With prompting and support, recognize basic similarities in and differences between two texts on the same topic (e.g., in illustrations or descriptions).	9.	Identify similarities in and differences between two texts on the same topic (e.g., in illustrations or descriptions).	9.	Describe similarities in and differences between two texts on the same topic.	
Ra	Range and Level of Text Complexity					
10.	Read emergent-reader informational texts with purpose and understanding.	10.	Read independently, proficiently, and fluently informational texts appropriately complex for grade 1.	10.	Read informational texts independently, proficiently, and fluently within the grades 2–3 text complexity band; read texts at the high end of the range with scaffolding as needed.	

## Reading Standards for Informational Text K–5

Grade 3 students:			Grade 4 students:		Grade 5 students:	
Kej	Key Ideas and Details					
1.	Ask and answer questions to demonstrate understanding of a text, explicitly using the text as the basis for the answers.	1.	Draw on details and examples from a text to support statements about the text.	1.	Quote from a text to support statements about the text.	
2.	Determine the main idea of a text and explain how it is supported by the key details.	2.	Determine the main idea and supporting details of a text; summarize the text.	2.	Determine two or more main ideas and how they are supported by details; summarize the text.	
3.	Describe the relationship between historical or scientific events or ideas in a text, using knowledge of connective devices that pertain to time, sequence, and cause and effect.	3.	Describe the sequence of events in an historical or scientific account, including what happened and why, based on specific information in a text.	3.	Explain the relationships between two or more historical events or scientific concepts by drawing on specific information from one or more texts.	
Cra	ft and Structure					
4.	Learn and determine the meanings of general academic language and domain-specific words and phrases encountered in a text relevant to a <i>grade 3 topic or subject area</i> .	4.	Learn and determine the meanings of general academic language and domain-specific words or phrases encountered in a text relevant to a <i>grade 4 topic or subject area</i> .	4.	Learn and determine the meanings of general academic language and domain-specific words and phrases encountered in a text relevant to a <i>grade 5 topic or subject</i> <i>area</i> .	
5.	Use text features (e.g., bold print, key words, topic sentences, hyperlinks, electronic menus, icons) to locate information quickly and efficiently.	5.	Use text features and search tools to locate and process information relevant to a given topic.	5.	Describe how events, ideas, or information are organized (e.g., chronology, comparison, cause and effect) in a whole text or in part of a text.	
6.	Compare what is presented in a text with relevant prior knowledge and beliefs, making explicit what is new or surprising.	6.	Compare an eyewitness account to a secondhand account of the same event or topic.	6.	Analyze two accounts of the same event or topic and describe important similarities and differences in the details they provide.	
Inte	egration of Knowledge and Ideas					
7.	Integrate information from illustrations and other visual elements (e.g., maps, photographs) in print and digital texts as an aid to understanding where, when, why, and how key events occur.	7.	Interpret factual information presented graphically or visually (e.g., in charts, diagrams, time lines, animations, and interactive elements) and explain how the information contributes to understanding a print or digital text.	7.	Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.	
8.	Describe the logical connection between paragraphs and between sentences in a text (e.g., comparison, sequence, example).	8.	Explain how an author uses evidence to support his or her claims in a text.	8.	Explain how an author uses evidence to support his or her claims in a text, identifying what evidence supports which claim(s).	
9.	Compare and contrast information drawn from two texts on the same subject.	9.	Describe how two or more texts on the same subject build on one another; provide a coherent picture of the information they convey.	9.	Integrate information from several texts on the same subject in order to write or speak about the subject knowledgeably.	
Ra	Range and Level of Text Complexity					
10.	Read informational texts independently, proficiently, and fluently within the grades 2–3 text complexity band; read "stretch" texts in the grades 4–5 text complexity band with scaffolding as needed.	10.	Read informational texts independently, proficiently, and fluently within the grades 4–5 text complexity band; read texts at the high end of the range with scaffolding as needed.	10.	Read informational texts independently, proficiently, and fluently within the grades 4–5 text complexity band; read "stretch" texts in the grades 6–8 text complexity band with scaffolding as needed.	

## Reading Standards: Foundational Skills (K-3)

These standards are directed toward fostering students' understanding and working knowledge of concepts of print, the alphabetic principle, and other basic conventions of the English writing system. These Foundational Skills are not an end in and of themselves; rather, they are necessary and important components of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend texts across a range of types and disciplines.

Kindergartners:	Grade 1 students:
Print Concepts	
<ol> <li>Demonstrate understanding of the organization and basic features of print.</li> <li>a. Identify the front cover, back cover, and title page of a book.</li> <li>b. Follow words from left to right, top to bottom, and page by page.</li> <li>c. Understand that words are separated by spaces in print.</li> <li>d. Recognize and name all upper- and lowercase letters of the alphabet.</li> </ol>	1. (Not applicable)
<ul> <li>Phonological Awareness</li> <li>2. Demonstrate understanding of spoken words, syllables, and phonemes. <ul> <li>a. Recite and produce rhyming words.</li> <li>b. Count, pronounce, blend, and segment syllables in spoken words.</li> <li>c. Count individual words in spoken phrases or simple sentences.</li> <li>d. Blend and segment consonants and rimes of spoken words (/g/ - /oat/, /bl/ - /ack/).</li> <li>e. Demonstrate phonemic awareness by isolating and pronouncing the initial, medial vowel, and final phonemes (sounds) in three-phoneme (CVC) words (e.g., /save/, /ham/).<sup>1</sup> (This does not include CVCs ending with /l/, /r/, or /x/.)</li> <li>f. Add or substitute individual phonemes in simple, one-syllable words to make new words (e.g., /at/ → /sat/ → /mat/ → /map/).</li> </ul> </li> </ul>	<ul> <li>2. Demonstrate understanding of spoken words, syllables, and phonemes.</li> <li>a. Aurally distinguish long from short vowel sounds in spoken single-syllable words (e.g., /tap/ vs. /tape/, /sock/ vs. /soak/, /sit/ vs. /sight/).</li> <li>b. Orally produce single-syllable words by blending phonemes, including consonant blends (e.g., /cats/, /black/, /blast/).</li> <li>c. Isolate and pronounce initial, medial vowel, and final phonemes (sounds) in spoken single-syllable words (e.g., fast, fast, fast).</li> <li>d. Segment spoken single-syllable words into their complete sequence of individual phonemes (e.g., lap: /l/-/a/-/p/→ /f/-/l/-/a/-/p/).</li> </ul>

<sup>1</sup>Words, syllables, or phonemes written in /slashes/refer to their pronunciation or phonology. Thus, /CVC/ is a word with three phonemes regardless of the number of letters in the spelling of the word.

## Reading Standards: Foundational Skills (K–3)

	Kindergartners:	Grade 1 students:	Grade 2 students:	Grade 3 students:
Ph	onics and Word Recognition			
3	<ul> <li>Know and apply grade-level phonics and word analysis skills in decoding words.</li> <li>a. Demonstrate basic knowledge of letter-sound correspondences by producing the primary or most frequent sound for each consonant.</li> <li>b. Associate the long and short sounds with the graphemes for the five major vowels.</li> <li>c. Read at least twenty-five very-high-frequency words by sight (e.g., <i>the</i>, <i>of</i>, <i>to</i>, <i>you</i>, <i>she</i>, <i>my</i>, <i>is</i>, <i>are</i>, <i>do</i>, <i>does</i>).</li> <li>d. Distinguish between similarly spelled words by identifying the sounds of the letters that differ (e.g., <i>bat</i> vs. <i>sat</i>, <i>cat</i> vs. <i>can</i>, <i>hit</i> vs. <i>hot</i>).</li> </ul>	<ol> <li>Know and apply grade-level phonics and word analysis skills in decoding words.</li> <li>a. Know the spelling-sound correspondences for common consonant digraphs (e.g., <i>-ll</i>, <i>-ck</i>, <i>wr-</i>, <i>sh</i>).</li> <li>Decode regularly spelled one-syllable words (e.g., <i>lock</i>, <i>much</i>, <i>see</i>, <i>rain</i>, <i>slide</i>, <i>bake</i>, <i>bring</i>).</li> <li>Know final <i>-e</i> (e.g., <i>take</i>, <i>side</i>) and common vowel team conventions (e.g., <i>rain</i>, <i>day</i>, <i>week</i>, <i>seat</i>, <i>road</i>, <i>show</i>) for representing long vowel sounds.</li> <li>Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word.</li> <li>Decode two-syllable words following basic patterns (e.g., <i>rabbit</i>) by breaking the words into syllables.</li> <li>Read words with inflectional endings (e.g., <i>-s</i>, <i>-es</i>, <i>-ed</i>, <i>-ing</i>, <i>-er</i>, <i>-est</i>).</li> <li>Recognize and read grade-appropriate irregularly spelled words (e.g., <i>said</i>, <i>were</i>, <i>could</i>, <i>would</i>, <i>their</i>, <i>there</i>, <i>through</i>, <i>none</i>, <i>both</i>).</li> </ol>	<ol> <li>Know and apply grade-level phonics and word analysis skills in decoding words.</li> <li>a. Distinguish long and short vowels when reading regularly spelled one- syllable words (e.g., hop vs. hope, men vs. mean, fell vs. feel, bend vs. bead).</li> <li>b. Know spelling-sound correspondences for additional common vowel teams (e.g., loud, cow, look, loop, boy, boil).</li> <li>c. Decode regularly spelled two-syllable words with long vowels (e.g., surprise, remain, needle, baby, paper).</li> <li>d. Decode words with common prefixes and suffixes (e.g., unhappy, carefully, goodness, unbutton).</li> <li>e. Identify words with inconsistent but common spelling-sound correspondences (e.g., heat vs. head, roll vs. doll, hint vs. hind).</li> <li>f. Recognize and read grade- appropriate irregularly spelled words (e.g., through, eyes, busy, ocean, island, people).</li> </ol>	<ul> <li>Know and apply grade-level phonics and word analysis skills in decoding words.</li> <li>a. Identify and know the meaning of the most common prefixes and derivational suffixes (e.g., un-, re-, mis-, -ful, -less, -able).</li> <li>b. Decode words with common Latin suffixes (e.g., -tion/-sion, -ture, -tive/-sive, -ify, -ity, -ment).</li> <li>c. Decode multisyllable words (e.g., supper, chimpanzee, refrigerator, terrible, frightening).</li> <li>d. Read grade-appropriate irregularly spelled words (e.g., although, science, stomach, machine).</li> </ul>
Flu	ency			
4.	<ul><li>Read with sufficient accuracy and fluency to support comprehension.</li><li>a. Read emergent-reader texts with purpose and understanding.</li></ul>	<ol> <li>Read with sufficient accuracy and fluency to support comprehension.</li> <li>a. Read on-level text with purpose and understanding.</li> <li>b. Read on-level text orally with accuracy, appropriate rate, and expression on successive readings.</li> <li>c. Use context to confirm or self-correct word recognition and understanding, rereading as necessary.</li> </ol>	<ol> <li>Read with sufficient accuracy and fluency to support comprehension.</li> <li>a. Read on-level text with purpose and understanding.</li> <li>b. Read on-level text orally with accuracy, appropriate rate, and expression on successive readings.</li> <li>c. Use context to confirm or self- correct word recognition and understanding, rereading as</li> </ol>	<ul> <li>4. Read with sufficient accuracy and fluency to support comprehension.</li> <li>a. Read on-level text with purpose and understanding.</li> <li>b. Read on-level text orally with accuracy, appropriate rate, and expression on successive readings</li> <li>c. Use context to confirm or self-correct word recognition and understanding, rereading as procession.</li> </ul>

## Range and Level of Text Complexity for Student Reading by Grade (Standard 10)

Students demonstrate proficiency in reading texts at the following ranges of text complexity to progress on a path to college and career readiness.

K	(See spe	cific exemplars.)				
1	(see speenie exemplais.)					
2	2-3 Level Text	4-5 Level Text	<b>In grade 2</b> , students focus on reading texts independently in the grades 2–3 text complexity band, with scaffolding likely required for texts at the high end of the range			
	100%		required for texts at the high end of the funge.			
3	2-3 Level Text	4–5 Level Text	<b>In grade 3</b> , students focus on reading texts independently in the grades 2–3 text complexity band (70 percent) and are			
	70%	30%	introduced to texts in the grades 4–5 text complexity band as "stretch" texts (30 percent), which will likely require scaffolding.			
4	4-5 Level Text	6-8 Level Text	<b>n grade 4</b> , students focus on reading texts independently in the grades 4–5 text complexity band, with scaffolding likely			
	100%		required for texts at the high end of the range.			
5	4-5 Level Text	6-8 Level Text	In grade 5, students focus on reading independently in the grades 4–5 text complexity band (70 percent) and are introduced to texts in the grades 6. 8 text complexity hand as "texts if the grades 4–5 text complexity band (70 percent) and are introduced to			
	70%	30%	texts in the grades 0-6 text complexity band as stretch texts (50 percent), which will likely require scanolding.			

Note: In any given classroom, the actual range of students' reading ability could be greater than the proposed range. Some students will require extra time and intense support and scaffolding to enable them to read grade-level material, whereas other students will be ready for—and should be encouraged to read—more advanced texts.



## Measuring Text Complexity: Three Factors

 Qualitative evaluation of the text:
 Levels of meaning, structure, language conventionality and clarity, and knowledge demands

 Quantitative evaluation of the text:
 Readability measures and other scores of text complexity

 Matching reader to text and task:
 Reader knowledge, motivation, and interests as well as the complexity generated by the tasks to be assigned and the questions to be posed

Note: More detailed information on text complexity and how it is measured is contained in Appendix A.

## Range of Text Types for K-5

Students in K-5 apply the Reading standards to the following range of text types, with texts selected from a broad range of cultures and periods.

	Literature		Informational Text		
Stories	Drama	Poetry	Literary Nonfiction, History/Social Studies, and Science and Technical Texts		
Includes children's adventure stories, folktales, legends, fables, fantasy, realistic fiction, and myth	Includes staged dialogue and brief familiar scenes	Includes nursery rhymes and the subgenres of the narrative poem, limerick, and free verse poem	Includes biographies and autobiographies; books about history, social studies, science, and the arts; and digital media sources on a range of topics		

## College and Career Readiness Standards for Writing

The K–5 standards on the following pages define what students should understand and be able to do in each grade and build toward the ten College and Career Readiness Standards.

#### Text Types and Purposes<sup>1</sup>

- 1. Write arguments to support a substantive claim with clear reasons and relevant and sufficient evidence.
- **2.** Write informative/explanatory texts to convey complex information clearly and accurately through purposeful selection and organization of content.
- **3.** Write narratives to convey real or imagined experiences, individuals, or events and how they develop over time.

#### Production and Distribution of Writing

- **4.** Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience.
- 5. Strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.<sup>2</sup>
- 6. Use technology, including the Internet, to produce, publish, and interact with others about writing.

#### Research to Build Knowledge

- **7.** Perform short, focused research projects as well as more sustained research in response to a focused research question, demonstrating understanding of the material under investigation.
- **8.** Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate and cite the information while avoiding plagiarism.
- **9.** Write in response to literary or informational sources, drawing evidence from the text to support analysis and reflection as well as to describe what they have learned.

#### Range of Writing

**10.** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.<sup>3</sup>

<sup>1</sup>These broad categories of writing include many subgenres. See Appendix A for definitions of key writing types. <sup>2</sup>See "Conventions" in Language, pages 22–26, for specific editing expectations.

<sup>3</sup>This standard is measured by the proficiency of student writing products.

#### Standards for English Language Arts and Literacy in History/Social Studies & Science | K–5 SDE

# Note on range and content of student writing

To build a foundation for college and career readiness, students need to learn to use writing as a way of offering and supporting opinions, demonstrating understanding of the subjects they are studying, and conveying thoughts, feelings, and real and imaginary experiences. They learn to appreciate that a key purpose of writing is to communicate clearly to an external, sometimes unfamiliar audience, and they begin to adapt the form, content, and style of their writing to accomplish a particular purpose and task. They develop the capacity to build knowledge on a subject through research projects and to respond analytically to literary and informational sources. To meet these goals, students must devote significant time and effort to writing, producing numerous pieces over short and long time frames throughout the year.

## Writing Standards K-5

Following are the standards for K-5, which relate to their College and Career Readiness counterparts by number. They offer a focus for instruction in each year to help ensure that students gain adequate exposure to a range of skills and applications. Growth in writing ability is characterized by an increasing sophistication in all aspects of language use, from vocabulary and syntax to the development and organization of ideas. At the same time, the content and sources that students address in their writing grow in demand every year.

Kindergartners:			Grade 1 students:		Grade 2 students:	
Text Types and Purposes						
1.	Use a combination of drawing, dictating, and writing to compose opinions in which they tell a reader the name of a book or the topic they are "writing" about and give an opinion about the topic (e.g., <i>My favorite book is</i> ).	1.	Write opinions in which they introduce the topic or the name of the book they are writing about, state an opinion, and provide a reason for their opinion.	1.	Write opinions in which they introduce the topic or book(s) directly, state an opinion, provide reasons and details to support opinions, use words to link opinions and reason(s) (e.g., <i>because</i> , <i>and</i> , <i>also</i> ), and provide a sense of closure.	
2.	Use a combination of drawing, dictating, and writing to compose informative and explanatory texts in which they name what they are "writing" about and share some information about it.	2.	Write informative and explanatory texts in which they name a topic, supply some facts relevant to the topic, and provide some sense of closure.	2.	Write informative and explanatory texts in which they introduce a topic, use facts and definitions to develop points, present similar information together using headers to signal groupings when appropriate, and provide a concluding sentence or section.	
3.	Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order that they occurred, and provide a reaction to what happened.	3.	Write narratives in which they include at least two or more appropriately sequenced events, use time cue words to signal event order, and provide some details and a sense of closure.	3.	Write narratives in which they recount a well-elaborated event or series of events, use temporal words and phrases to signal event order, include details to tell what the narrator did, thought, and felt, and provide closure.	
Pro	duction and Distribution of Writing					
4.	(Begins in grade 3)	4.	(Begins in grade 3)	4.	(Begins in grade 3)	
5.	With guidance and support from adults, add details to strengthen writing as needed through revision.	5.	With guidance and support from adults, add details to strengthen writing as needed through revision.	5.	With guidance from adults, strengthen writing as needed by revising and editing.	
6.	(Begins in grade 2)	6.	(Begins in grade 2)	6.	With guidance from adults, use technology to produce writing.	
Res	search to Build Knowledge					
7.	(Begins in grade 1)	7.	Participate in shared research and writing projects (e.g., exploring a number of books on a given topic).	7.	Participate in shared research and writing projects (e.g., exploring a number of books on a given topic).	
8.	Gather information from experiences or provided text sources to answer a specific question.	8.	Gather information from experiences or provided text sources to answer a specific question.	8.	Gather information from experiences or provided text sources to answer a specific question.	
9.	(Begins in grade 4)	9.	(Begins in grade 4)	9.	(Begins in grade 4)	
Rai	nge of Writing					
10.	(Begins in grade 4)	10.	(Begins in grade 4)	10.	(Begins in grade 4)	

Standards for English Language Arts and Literacy in History/Social Studies & Science | K-5
## Writing Standards K–5

Grade 3 students:	Grade 4 students:	Grade 5 students:		
Text Types and Purposes				
<ol> <li>Write opinions in which they:         <ul> <li>a. Introduce the topic or book(s) directly, state an opinion relative to the topic, and create an organizing structure that lists reasons.</li> <li>b. Provide reasons that support the opinion.</li> <li>c. Use appropriate words to link opinions and reason(s) (e.g., because, therefore, in order to, since, for example).</li> <li>d. Provide a sense of closure.</li> </ul> </li> </ol>	<ol> <li>Write opinions in which they:         <ol> <li>Introduce an opinion about a concrete issue or topic and create an organizing structure where related ideas are grouped to support the writer's purpose.</li> <li>Provide reasons that are supported by facts and details.</li> <li>Link reasons and details together using words and phrases (e.g., so, then, for instance, in addition).</li> <li>Adopt an appropriate style for sharing and defending an opinion.</li> <li>Provide a concluding statement or section.</li> </ol> </li> </ol>	<ol> <li>Write opinions in which they:         <ol> <li>Introduce an opinion about a concrete issue or topic and create an organizing structure where ideas are logically grouped to support the writer's purpose.</li> <li>Provide logically ordered reasons that are supported by facts and details.</li> <li>Link reasons and details together using words, phrases, and clauses (e.g., <i>consequently, generally, specifically</i>).</li> <li>Adopt an appropriate style for sharing and defending an opinion.</li> <li>Provide a concluding statement or section.</li> </ol> </li> </ol>		
<ol> <li>Write informative/explanatory pieces in which they:         <ol> <li>Introduce a topic and create an organizational structure that presents similar information together.</li> <li>Provide some details to develop points.</li> <li>Use linking words (e.g., <i>also, another, and, more</i>) to connect ideas within categories of information.</li> <li>Include a concluding sentence or section.</li> </ol> </li> </ol>	<ol> <li>Write informative/explanatory pieces in which they:         <ol> <li>State the topic clearly and group related information in paragraphs and sections.</li> <li>Develop the topic using facts, concrete details, quotations, or other information and examples.</li> <li>Use appropriate links to join ideas within categories of information.</li> <li>Employ domain-specific vocabulary when appropriate.</li> <li>Provide a conclusion related to the information or explanation offered.</li> </ol> </li> </ol>	<ol> <li>Write informative/explanatory pieces in which they:         <ul> <li>a. State the topic clearly, provide a general observation and focus, and group related information logically.</li> <li>b. Develop the topic using relevant facts, concrete details, quotations, or other information and examples.</li> <li>c. Use appropriate links to join ideas within and across categories of information.</li> <li>d. Employ domain-specific vocabulary and some technical terms when appropriate.</li> <li>e. Provide a conclusion related to the information or explanation offered.</li> </ul> </li> </ol>		
<ol> <li>Write narratives in which they:         <ul> <li>a. Establish a situation, introduce a narrator and/or characters, and organize an event sequence that unfolds naturally.</li> <li>b. Employ dialogue and descriptions of characters' actions, thoughts, and feelings.</li> <li>c. Use temporal words and phrases to signal event sequence.</li> <li>d. Provide a sense of closure.</li> </ul> </li> </ol>	<ol> <li>Write narratives in which they:         <ul> <li>Orient the reader by establishing a situation, introduce a narrator and/or characters, and organize an event sequence that unfolds naturally.</li> <li>Use narrative techniques such as dialogue and description to develop events and show the characters' external behaviors and internal responses to events.</li> <li>Use a variety of temporal words and phrases to manage the sequence of events.</li> <li>Use concrete and sensory words and phrases to convey events and experiences precisely.</li> <li>Provide a satisfying conclusion that follows from the narrative's events.</li> </ul> </li> </ol>	<ol> <li>Write narratives in which they:         <ul> <li>Engage and orient the reader by establishing a situation, introduce a narrator and/or characters, and create an organization that sequences events naturally and logically.</li> <li>Use narrative techniques such as dialogue, pacing, and description to develop events and show characters' external behaviors and internal responses.</li> <li>Use a variety of temporal words, phrases, and clauses to manage the sequence of events.</li> <li>Use well-chosen words and phrases to convey events and experiences precisely.</li> <li>Provide a satisfying conclusion that follows from the narrative's events.</li> </ul> </li> </ol>		

## Writing Standards K–5

Grade 3 students:	(	Grade 4 students:	Grade 5 students:		
Production and Distribution of Writing					
<b>4.</b> (Begins in grade 4).	<ol> <li>Produce coheren organization, dev appropriate to ta: expectations for above.)</li> </ol>	t and clear writing in which the 4. velopment, substance, and style are sk, purpose, and audience. (Grade-specific writing types are defined in Standards 1–3	<ul> <li>Produce coherent and clear writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience. (Grade- specific expectations for writing types are defined in Standards 1–3 above.)</li> </ul>		
<b>5.</b> With guidance and support from peers and ad strengthen writing as needed by revising and e	ults, <b>5.</b> With guidance ar strengthen writin editing.	nd support from peers and adults, 5. ng as needed by planning, revising, and	With guidance and support from peers and adults, strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.		
<b>6.</b> With guidance and support from adults, use to produce and publish writing.	echnology to <b>6.</b> With guidance an produce, publish	nd support from adults, use technology to <b>6</b> , and interact with others about writing.	• With guidance and support from adults, use technology, including the Internet, to produce, publish, and interact with others about writing.		
Research to Build Knowledge					
<b>7.</b> Perform short, focused research tasks that bui about a topic.	ld knowledge 7. Perform short, fo through investiga	ocused research tasks that build knowledge 7. tion of different aspects of a single topic.	Y. Perform short, focused research tasks that build knowledge through investigation of different aspects of a topic using several sources.		
<b>8.</b> Gather information from experience as well a digital resources, take simple notes on source evidence into provided categories.	s print and <b>8.</b> Gather relevant in print and digital s evidence, restate basic bibliographi	nformation from experience as well as sources, take notes and categorize information in written text, and provide ic information.	Gather relevant information from experience as well as print and digital sources; summarize or paraphrase information in notes and finished work, and provide basic bibliographic information.		
9. (Begins in grade 4)	<ul> <li>9. Write in respons drawing evidence reflection as well</li> <li>a. Apply grade (e.g., "Expla support his o</li> <li>b. Apply grade "Describe in drawing on a character's t with others"</li> </ul>	<ul> <li>9.</li> &lt;</ul>	<ul> <li>Write in response to literary or informational sources, drawing evidence from the text to support analysis and reflection as well as to describe what they have learned:</li> <li>a. Apply grade 5 reading standards to informational texts (e.g., "Explain how an author uses evidence to support his or her claims in a text, identifying what evidence supports which claim(s)").</li> <li>b. Apply grade 5 reading standards to literature (e.g., "Compare and contrast two or more characters, events, or settings in a text, drawing on specific details").</li> </ul>		
Range of Writing					
<b>10.</b> (Begins in grade 4)	<b>10.</b> Write routinely or research, reflection (a single sitting or purposes, and audition)	over extended time frames (time for 10 on, and revision) and shorter time frames r a day or two) for a range of tasks, diences.	<b>0.</b> Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.		

## College and Career Readiness Standards for Speaking and Listening

The K-5 standards on the following pages define what students should understand and be able to do in each grade and build toward the six College and Career Readiness Standards.

#### Comprehension and Collaboration

- 1. Participate effectively in a range of interactions (one-on-one and in groups), exchanging information to advance a discussion and to build on the input of others.
- **2.** Integrate and evaluate information from multiple oral, visual, or multimodal sources in order to answer questions, solve problems, or build knowledge.
- 3. Evaluate the speaker's point of view, reasoning, and use of evidence and rhetoric.

#### Presentation of Knowledge and Ideas

- **4.** Present information, evidence, and reasoning in a clear and well-structured way appropriate to purpose and audience.
- **5.** Make strategic use of digital media and visual displays of data to express information and enhance understanding.
- **6.** Adapt speech to a variety of contexts and communicative tasks, demonstrating a command of formal English when indicated or appropriate.

### Note on range and content of student speaking and listening

To build a foundation for college and career readiness, students must have ample opportunities to take part in a variety of rich, structured conversations—whole class, small group, and with a partner. Being productive members of these conversations requires that students contribute accurate, relevant information; respond to and develop what others have said; make comparisons and contrasts; and analyze and synthesize a multitude of ideas in various domains.

New technologies have broadened and expanded the role that speaking and listening play in acquiring and sharing knowledge and have tightened their link to other forms of communication. Digital texts confront students with the potential for continually updated content and dynamically changing combinations of words, graphics, images, hyperlinks, and embedded video and audio.

## Speaking and Listening Standards K-5

Following are the standards for K–5, which relate to their College and Career Readiness counterparts by number. They offer a focus for instruction in each year to help ensure that students gain adequate exposure to a range of skills and applications.

	Kindergartners:		Grade 1 students:		Grade 2 students:
Сог	nprehension and Collaboration				
1.	Participate in conversations with peers and adults about <i>kindergarten topics and texts</i> being studied in class.	1.	Initiate and participate in conversations with peers and adults about <i>grade 1 topics and texts</i> being studied in class.	1.	Engage in group discussions on <i>grade 2 topics and texts</i> being studied in class.
	<ul><li>a. Listen to others and take turns speaking.</li><li>b. Continue a conversation through several exchanges.</li></ul>		<ul><li>a. Follow agreed-upon rules for discussions, such as listening to others, speaking one at a time, and gaining the floor in respectful ways.</li><li>b. Respond to the comments of others through multiple exchanges.</li><li>c. Ask questions to clear up confusion about a topic.</li></ul>		<ul> <li>a. Follow agreed-upon rules for discussions, such as listening to others, speaking one at a time, and gaining the floor in respectful ways.</li> <li>b. Stay on topic by linking their own additions to the conversation to the previous remarks of others.</li> <li>c. Ask for clarification and further explanation as needed.</li> <li>d. Extend their ideas and understanding in light of the discussions.</li> </ul>
2.	Confirm understanding of information presented orally or through media by asking and answering questions about key details.	2.	Confirm understanding of information presented orally or through media by restating key elements and asking and answering questions about key details.	2.	Retell key details or ideas presented orally or through media.
3.	Ask questions to get information, seek help, or clarify something that is not understood.	3.	Ask questions to get information, clarify something that is not understood, or gather additional information.	3.	Ask and answer questions about information presented orally or visually in order to deepen their understanding or clarify comprehension.
Pre	sentation of Knowledge and Ideas				
4.	Describe familiar people, places, things, and events and, with prompting and support, provide additional detail.	4.	Describe familiar people, places, things, and events with relevant details, expressing ideas and feelings clearly.	4.	Recount stories or experiences with appropriate facts and descriptive details.
5.	(Begins in grade 4)	5.	(Begins in grade 4)	5.	(Begins in grade 4)
6.	(Begins in grade 1)	6.	Produce complete sentences when appropriate to task and situation, using correct verb tenses to convey a sense of past, present, and future. (See "Conventions" in Language, pages 22–26, for specific demands.)	6.	Produce complete sentences when appropriate to task and situation to provide requested detail or clarification, ensuring subject-verb agreement and correct use of irregular plural nouns. (See "Conventions" in Language, pages 22–26, for specific demands.)

## Speaking and Listening Standards K–5

	Grade 3 students:		Grade 4 students:	Grade 5 students:	
Col	nprehension and Collaboration				
1.	<ul> <li>Initiate and engage in group discussions on grade 3 topics and texts being studied in class.</li> <li>a. Follow agreed-upon rules for discussions and carry out assigned roles in small-group discussions.</li> <li>b. Pose relevant questions and link their own additions to the conversation to the previous remarks of others.</li> <li>c. Extend their ideas and understanding in light of the discussions.</li> </ul>	1.	<ul> <li>Initiate and engage in group discussions on grade 4 topics and texts being studied in class.</li> <li>a. Come to discussions prepared, having read required material; in discussions, explicitly draw on that material and other information known about the topic.</li> <li>b. Pose and respond to questions as well as build on the ideas of previous speakers.</li> <li>c. Acknowledge new information provided by others and incorporate it into their own thinking as appropriate.</li> </ul>	1.	<ul> <li>Initiate and engage in group discussions on grade 5 topics and texts being studied in class.</li> <li>a. Come to discussions prepared, having read the required material; in discussions, explicitly draw on that material and other information known about the topic.</li> <li>b. Respond to questions with elaboration, make comments that contribute to the topic, and build on the ideas of previous speakers.</li> <li>c. Ask questions to clarify or follow up on ideas or information presented orally or through media.</li> <li>d. Draw conclusions based on the ideas of others and incorporate them into their own thinking as appropriate.</li> </ul>
2.	Identify the main ideas and supporting details of information presented graphically, visually, orally, or multimodally.	2.	Paraphrase the key information or ideas presented graphically, visually, orally, or multimodally.	2.	Summarize the key ideas and supporting details presented graphically, visually, orally, or multimodally.
3.	Ask and answer questions about presentations, offering appropriate elaboration and detail.	3.	Identify the claims and supporting evidence used by a speaker or a presenter.	3.	Summarize the claims made by a speaker or presenter and explain how each claim is supported with evidence.
Pre	sentation of Knowledge and Ideas				
4.	Report on a topic or recount stories or experiences with appropriate facts and descriptive details.	4.	Report on events, topics, or texts in an organized manner, using appropriate, specific facts and descriptive details to support main ideas.	4.	Report on events, topics, or texts in a focused, organized manner, sequencing ideas logically and using appropriate, specific facts, details, examples, or other information to develop main ideas.
5.	(Begins in grade 4)	5.	Incorporate visual displays and digital media into presentations when appropriate.	5.	Incorporate visual displays and digital media into presentations when appropriate.
6.	Speak coherently, employing a variety of tenses and ensuring subject-verb and pronoun-antecedent agreement. (See "Conventions" in Language, pages 22–26, for specific demands.)	6.	Differentiate between contexts that call for formal English (e.g., presenting ideas) and situations where informal discourse is appropriate (e.g., small-group discussion); use formal English when appropriate to task and situation. (See "Conventions" in Language, pages 22–26, for specific demands.)	6.	Adapt speech to a variety of contexts and communicative tasks, using formal English when appropriate to task and situation. (See "Conventions" in Language, pages 22–26, for specific demands.)

## College and Career Readiness Standards for Language

The K–5 standards on the following pages define what students should understand and be able to do in each grade and build toward the six College and Career Readiness Standards.

#### Conventions in Writing and Speaking

- 1. Demonstrate a command of the conventions of standard English grammar and usage.
- 2. Demonstrate a command of the conventions of capitalization, punctuation, and spelling.
- 3. Make effective choices about language, punctuation, and sentence structure for meaning and style.

#### Vocabulary Acquisition and Use

- **4.** Determine the meaning of words and phrases encountered through conversations, reading, and media use.
- 5. Understand the nuances of and relationships among words.
- 6. Use grade-appropriate general academic vocabulary and domain-specific words and phrases purposefully acquired as well as gained through conversation and reading and responding to texts.

# Note on range and content of student language use

To build a foundation for college and career readiness in language, students must gain control over many conventions of writing and speaking as well as acquire new words and understand those that they encounter through listening, reading, and media use. They must be able to determine the meaning of grade-appropriate words, come to appreciate that words have shadings of meaning and relationships to other words, and expand their vocabulary through conversation and (especially in later grades) through reading and by being taught words directly in the course of studying subject matter. The inclusion of Language standards in their own strand should not be taken as an indication that skills related to conventions and vocabulary are unimportant to reading, writing, speaking, and listening; indeed, they are

## Language Standards K-5

Following are the standards for K–5, which relate to their College and Career Readiness counterparts by number. They offer a focus for instruction in each year to help ensure that students gain adequate exposure to a range of skills and applications.

Kindergartners:	Grade 1 students:	Grade 2 students:
Conventions in Writing and Speaking		
<ol> <li>Observe conventions of grammar and usage.         <ul> <li>Print most upper- and lowercase letters.</li> <li>Write a letter or letters for most consonant and short-vowel sounds (phonemes).</li> <li>Form regular plural nouns orally by adding /s/ or /es/ (e.g., <i>dog</i>, <i>dogs</i>; <i>wish</i>, <i>wishes</i>) when speaking.</li> <li>Understand and use the most frequently occurring prepositions in English (e.g., <i>to/from</i>, <i>in/out</i>, <i>on/off</i>, <i>for</i>, <i>of</i>, <i>by</i>, <i>with</i>) when speaking.</li> <li>Produce and expand complete sentences in shared language and writing activities.</li> <li>Understand and use question words (e.g., <i>who</i>, <i>what</i>, <i>where</i>, <i>when</i>, <i>why</i>, <i>how</i>) in discussions.</li> </ul> </li> </ol>	<ol> <li>Observe conventions of grammar and usage.         <ul> <li>a. Print all upper- and lowercase letters.</li> <li>b. Use singular and plural nouns with matching verbs in simple sentences (e.g., <i>He hops; We hop</i>).</li> <li>c. Use subject, object, and possessive pronouns in speaking and writing (e.g., <i>I, me, my; they, them, their</i>).</li> <li>d. Use verbs to convey a sense of past, present, and future in writing and speaking (e.g., <i>Yesterday I walked home; Today I walk home; Tomorrow I will walk home</i>).</li> <li>e. Understand and use frequently occurring prepositions in English (e.g., <i>during, beyond, toward</i>).</li> <li>f. Produce and expand complete declarative, interrogative, imperative, and exclamatory sentences in response to questions and prompts.</li> <li>g. Understand that, minimally, every sentence must be about something (the subject) and tell something (the predicate) about its subject.</li> </ul> </li> </ol>	<ol> <li>Observe conventions of grammar and usage.         <ul> <li>Form common irregular plural nouns (e.g., <i>feet</i>, <i>children</i>, <i>teeth</i>, <i>mice</i>, <i>fish</i>).</li> <li>Form the past tense of common irregular verbs (e.g., <i>sat</i>, <i>hid</i>, <i>told</i>).</li> <li>Produce and expand complete declarative, interrogative, imperative, and exclamatory sentences.</li> <li>Produce and expand complete sentences to provide requested detail or clarification.</li> </ul> </li> </ol>
<ol> <li>Observe conventions of capitalization, punctuation, and spelling.         <ul> <li>Capitalize the first word in a sentence and the pronoun <i>I</i>.</li> <li>Name and identify end punctuation, including periods, question marks, and exclamation points.</li> <li>Spell simple words phonetically using knowledge of sound-letter relationships.</li> </ul> </li> </ol>	<ol> <li>Observe conventions of capitalization, punctuation, and spelling.         <ul> <li>a. Capitalize names, places, and dates.</li> <li>b. Use end punctuation for sentences, including periods, question marks, and exclamation points.</li> <li>c. Use commas in dates and to separate single words in a series.</li> <li>d. Use conventional spelling for words with common spelling patterns and for common irregular words.</li> <li>e. Use phonetic spellings for untaught words, drawing on phonemic awareness and spelling conventions.</li> <li>f. Form new words through addition, deletion, and substitution of sound and letters (e.g., an → man → mat → mast → must → rust → crust).</li> </ul> </li> </ol>	<ol> <li>Observe conventions of capitalization, punctuation, and spelling.         <ul> <li>Capitalize holidays, product names, geographic names, and important words in titles.</li> <li>Use commas in greetings and closings of letters.</li> <li>Use apostrophes to form contractions and common possessives.</li> <li>Generalize learned spelling patterns when writing words (e.g., <i>cage</i> → <i>badge</i>; <i>boy</i> → <i>boil</i>; <i>paper</i> → <i>copper</i>).</li> <li>Consult reference materials, including beginning dictionaries, as needed to check and correct spellings.</li> </ul> </li> </ol>
<b>3.</b> (Begins in grade 3)	<b>3.</b> (Begins in grade 3)	<b>3.</b> (Begins in grade 3)

## Language Standards K–5

	Kindergartners:	Grade 1 students:	Grade 2 students:
Vo	cabulary Acquisition and Use		
4.	<ul> <li>Determine word meanings (<i>based on kindergarten reading</i>).</li> <li>a. Sort common objects into categories (e.g., shapes, foods) to gain a sense of the concepts the categories represent.</li> <li>b. Identify new meanings for familiar words and apply them accurately (e.g., knowing <i>duck</i> as a bird and learning the verb <i>to duck</i>).</li> <li>c. Use the most common affixes in English (e.g., <i>-ed</i>, <i>-s</i>, <i>re-</i>, <i>un-</i>, <i>pre-</i>, <i>-ful</i>, <i>-less</i>) as a clue to the meaning of an unknown word.</li> </ul>	<ol> <li>Determine word meanings (based on grade 1 reading).         <ol> <li>Sort words into categories (e.g., colors, clothing) to gain a sense of the concepts the categories represent.</li> <li>Use sentence-level context as a clue to the meaning of an unknown word.</li> <li>Use common affixes in English as a clue to the meaning of an unknown word.</li> <li>Define words by category and by one or more key attributes (e.g., a duck is a bird that swims; a tiger is a large cat with stripes).</li> <li>Demonstrate understanding of the concept of multiple-meaning words (e.g., match, kind, play) by identifying meanings of some grade-appropriate examples of such words.</li> </ol> </li> </ol>	<ul> <li>4. Determine word meanings (based on grade 2 reading).</li> <li>a. Determine or clarify the meaning of unknown or multiple-meaning words through the use of one or more strategies, such as understanding how the word is used in a sentence; analyzing the word's sounds, spelling, and meaningful parts; and consulting glossaries or beginning dictionaries, both print and digital.</li> <li>b. Explain the meaning of grade-appropriate compound words (e.g., birdhouse, lighthouse, housefly; bookshelf, notebook, bookmark).</li> <li>c. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., addition, additional).</li> <li>d. Determine the meaning of the new word formed when a known prefix is added to a known word (e.g., happy/unhappy, tell/retell).</li> </ul>
5.	<ul> <li>Understand word relationships.</li> <li>a. Build real-life connections between words and their use (e.g., note places at school that are <i>colorful</i>).</li> <li>b. Distinguish shades of meaning among verbs describing the same general action (e.g., <i>walk, march, strut, prance</i>) by acting out the meanings.</li> <li>c. Use common adjectives to distinguish objects (e.g., the <i>small blue</i> square; the <i>shy white</i> rabbit).</li> <li>d. Demonstrate understanding of common verbs and adjectives by relating them to their opposites (antonyms).</li> </ul>	<ul> <li>5. Understand word relationships.</li> <li>a. Build real-life connections between words and their use (e.g., note places at home that are <i>cozy</i>).</li> <li>b. Distinguish shades of meaning among verbs differing in manner (e.g., <i>look, peek, glance, stare, glare, scowl</i>) and adjectives differing in intensity (e.g., <i>large, gigantic</i>) by defining, choosing, or acting out the meanings.</li> </ul>	<ul> <li>5. Understand word relationships.</li> <li>a. Build real-life connections between words and their use (e.g., describe foods that are <i>spicy</i> or <i>juicy</i>).</li> <li>b. Distinguish shades of meaning among related verbs (e.g., <i>toss, throw, hurl</i>) and related adjectives (e.g., <i>thin, slender, skinny, scrawny</i>).</li> </ul>
6.	Use newly learned words acquired through conversations, reading, and responding to texts.	<b>6.</b> Use newly learned words acquired through conversations, reading, and responding to texts.	6. Use newly learned words acquired through conversations, reading, and responding to texts.

## Language Standards K-5

Grade 3 students:	Grade 4 students:	Grade 5 students:
Conventions in Writing and Speaking		
<ol> <li>Observe conventions of grammar and usage.         <ul> <li>Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in specific sentences.</li> <li>Form and use the simple (e.g., <i>I walked</i>, <i>I walk</i>, <i>I will walk</i>) verb tenses.</li> <li>Ensure subject-verb and pronoun-antecedent agreement.*</li> <li>Produce simple, compound, and complex sentences.</li> </ul> </li> </ol>	<ol> <li>Observe conventions of grammar and usage.         <ul> <li>a. Form and use the progressive (e.g., <i>I was walking</i>, <i>I am walking</i>, <i>I will be walking</i>) verb aspects.</li> <li>b. Form and use adjectives and adverbs (including comparative and superlative forms), placing them appropriately within sentences.*</li> <li>c. Produce complete sentences, avoiding rhetorically poor fragments and run-ons.*</li> <li>d. Correctly use frequently confused words (e.g., <i>to</i>, <i>too</i>, <i>two</i>; <i>there</i>, <i>their</i>).*</li> </ul> </li> </ol>	<ol> <li>Observe conventions of grammar and usage.         <ul> <li>Form and use the perfect (e.g., <i>I had walked</i>, <i>I have walked</i>, <i>I will have walked</i>) verb aspects.</li> <li>Recognize and correct inappropriate shifts in verb tense and aspect.*</li> </ul> </li> </ol>
<ol> <li>Observe conventions of capitalization, punctuation, and spelling.         <ul> <li>Use correct capitalization.</li> <li>Use quotation marks in dialogue.</li> <li>Use conventional spelling for high-frequency and other studied words and for adding suffixes to base words (e.g., <i>sitting, smiled, cries, happiness</i>).</li> <li>Use spelling patterns and generalizations (e.g., word families, position-based spellings, syllable patterns, ending rules, meaningful word parts) in writing words.</li> <li>Consult reference materials, including dictionaries, as needed to check and correct spellings.</li> </ul> </li> </ol>	<ul> <li>2. Observe conventions of capitalization, punctuation, and spelling.</li> <li>a. Use quotation marks to mark direct speech and quotations from a text.</li> <li>b. Spell grade-appropriate words correctly, consulting references as needed.</li> </ul>	<ol> <li>Observe conventions of capitalization, punctuation, and spelling.         <ul> <li>Use punctuation to separate items in a series.*</li> <li>Use a comma to separate an introductory element from the rest of the sentence.</li> <li>Use underlining, quotation marks, or italics to indicate titles of works.</li> <li>Spell grade-appropriate words correctly, consulting references as needed.</li> </ul> </li> </ol>
<ol> <li>Make effective language choices.</li> <li>a. Use words for effect.*</li> </ol>	<ul> <li>3. Make effective language choices.</li> <li>a. Use punctuation for effect.*</li> <li>b. Maintain consistency in style and tone.*</li> <li>c. Choose words and phrases to convey ideas precisely.*</li> </ul>	<ul> <li>3. Make effective language choices.</li> <li>a. Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.*</li> </ul>

\* Conventions standards noted with an asterisk (\*) need to be revisited by students in subsequent grades as their writing and speaking grows in sophistication. See chart on page 27 for a complete listing.

## Language Standards K–5

Grade 3 students:			Grade 4 students:		Grade 5 students:	
Vo	cabulary Acquisition and Use					
4.	<ul> <li>Determine word meanings (based on grade 3 reading).</li> <li>a. Determine or clarify the meaning of unknown or multiple-meaning words through the use of one or more strategies, such as understanding how the word is used in a sentence; analyzing the word's sounds, spelling, and meaningful parts; and consulting glossaries or beginning dictionaries, both print and digital.</li> <li>b. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., company, companion).</li> <li>c. Determine the meaning of the new word formed when a known affix is added to a known word (e.g., agreeable/disagreeable, comfortable/uncomfortable, care/careless, heat/preheat).</li> <li>d. Distinguish the literal and nonliteral meanings of words and phrases in context (e.g., take steps).</li> </ul>	4.	<ul> <li>Determine word meanings (based on grade 4 reading).</li> <li>a. Determine or clarify the meaning of unknown or multiple-meaning words through the use of one or more strategies, such as using semantic clues (e.g., definitions, examples, or restatements in text); using syntactic clues (e.g., the word's position or function in the sentence); analyzing the word's sounds, spelling, and meaningful parts; and consulting reference materials, both print and digital.</li> <li>b. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., <i>telegraph</i>, <i>photograph</i>, <i>autograph</i>).</li> <li>c. Explain the meaning of simple similes and metaphors (e.g., <i>as pretty as a picture</i>).</li> <li>d. Paraphrase common idioms, adages, and proverbs.</li> </ul>	4.	<ul> <li>Determine word meanings (based on grade 5 reading).</li> <li>a. Determine or clarify the meaning of unknown or multiple-meaning words through the use of one or more strategies, such as using semantic clues (e.g., definitions, examples, or restatements in text); using syntactic clues (e.g., the word's position or function in the sentence); analyzing the word's sounds, spelling, and meaningful parts; and consulting reference materials, both print and digital.</li> <li>b. Use a known root word as a clue to the meaning of an unknown word with the same root (e.g., photograph, photosynthesis).</li> <li>c. Interpret figurative language, including similes and metaphors.</li> <li>d. Explain the meaning of common idioms, adages, and proverbs.</li> </ul>	
5.	<ul> <li>Understand word relationships.</li> <li>a. Build real-life connections between words and their use (e.g., describe people who are <i>friendly</i> or <i>helpful</i>).</li> <li>b. Distinguish among related words that describe states of mind or degrees of certainty (e.g., <i>knew</i>, <i>believed</i>, <i>suspected</i>, <i>heard</i>, <i>wondered</i>).</li> </ul>	5.	<ul> <li>Understand word relationships.</li> <li>a. Build real-life connections between words and their various uses and meanings.</li> <li>b. Define relationships between words (e.g., how <i>ask</i> is like and unlike <i>demand</i>; what items are likely to be <i>enormous</i>).</li> <li>c. Distinguish a word from other words with similar but not identical meanings (synonyms).</li> </ul>	5.	<ul> <li>Understand word relationships.</li> <li>a. Build real-life connections between words and their various uses and meanings.</li> <li>b. Define relationships between words (e.g., how <i>smirk</i> is like and unlike <i>smile</i>; what items are likely to be <i>vast</i>).</li> <li>c. Distinguish a word from other words with similar but not identical meanings (synonyms).</li> </ul>	
6.	Use words that are in common, conversational vocabulary as well as grade-appropriate academic vocabulary and domain-specific words (in English language arts, history/social studies, and science) taught directly and acquired through reading and responding to texts.	6.	Use grade-appropriate general academic vocabulary and domain-specific words and phrases (in English language arts, history/social studies, and science) taught directly and acquired through reading and responding to texts.	6.	Use grade-appropriate general academic vocabulary and domain-specific words and phrases (in English language arts, history/social studies, and science) taught directly and acquired through reading and responding to texts.	

## English Language Arts Conventions Progressive Skills, By Standard

The following, marked with an asterisk (\*) in the Conventions standards, are skills and understandings that require continued attention in higher grades (after their introduction in the grade listed below) as they are applied to increasingly sophisticated writing and speaking.

<b>1c.</b> Ensure subject-verb and pronoun-antecedent agreement.					
3a. Choose words for effect.					
1b. Form and use adjectives and adverbs (including comparative and superlative forms), placing them appropriately within ser	ences.				
1c. Produce complete sentences, avoiding rhetorically poor fragments and run-ons.					
1d. Correctly use frequently confused words (e.g., effect/affect, to/too/two).					
<b>3a.</b> Use punctuation for effect.					
<b>3b.</b> Maintain consistency in style and tone.					
<b>3c.</b> Choose words and phrases to convey ideas precisely.					
<b>1b</b> . Recognize and correct inappropriate shifts in verb tense and aspect.					
<b>2a.</b> Use punctuation to separate items in a series.					
<b>3a.</b> Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.					
<b>1b.</b> Recognize and correct inappropriate shifts in pronoun number and pers	n.				
<b>1c.</b> Recognize and correct vague pronouns (i.e., ones with unclear or ambi	uous antecedents).				
<b>2a.</b> Use commas, parentheses, or dashes to set off nonrestrictive/parenthet	<b>2a.</b> Use commas, parentheses, or dashes to set off nonrestrictive/parenthetical elements.				
<b>3a.</b> Vary sentence patterns for meaning, reader/listener interest, and style.					
<b>1c.</b> Place phrases and clauses within a senter	e, avoiding misplaced and dangling modifiers.				
<b>3b.</b> Choose words and phrases that express in redundancy.	leas concisely, eliminating wordiness and				
1c. Recognize a mood.	d correct inappropriate shifts in verb voice and				
	<b>1a.</b> Use parallel structure in writing.				

\* Read-aloud\*\* Read-along

## Texts Illustrating the Complexity, Quality, and Range of Student Reading K-5

	Literature: Stories, Drama, Poetry	Informational Texts: Literary Nonfiction, History/Social Studies, Science/Technical Texts
K	<ul> <li>Over in the Meadow by John Langstaff (traditional) (c1800)*</li> <li>A Boy, a Dog, and a Frog by Mercer Mayer (1967)</li> <li>Pancakes for Breakfast by Tomie DePaola (1978)</li> <li>A Story A Story by Gail E. Haley (1970)*</li> <li>Kitten's First Full Moon by Kevin Henkes (2004)*</li> </ul>	<ul> <li>My Five Senses by Aliki (1962)*</li> <li>Truck by Donald Crews (1980)</li> <li>I Read Signs by Tana Hoban (1987)</li> <li>What Do You Do With a Tail Like This? by Steve Jenkins &amp; Robin Page (2003)*</li> <li>Amazing Whales! by Sarah L. Thomson (2005)*</li> </ul>
	<ul> <li>"Mix a Pancake" by Christina G. Rossetti (1893)**</li> <li><i>Mr. Popper's Penguins</i> by Richard Atwater (1938)*</li> <li><i>Little Bear</i> by Else Holmelund Minarik, illustrated by Maurice Sendak (1957)**</li> <li><i>Frog and Toad Together</i> by Arnold Lobel (1971)**</li> <li><i>Hi! Fly Guy</i> by Tedd Arnold (2006)</li> </ul>	<ul> <li>A Tree Is a Plant by Clyde Robert Bulla, illustrated by Stacey Schuett (1960)**</li> <li>My Five Senses by Aliki (1962)**</li> <li>Follow the Water from Brook to Ocean by Arthur Dorros (1991)**</li> <li>From Seed to Pumpkin by Wendy Pfeffer, illustrated by James Graham Hale (2004)*</li> <li>How People Learned to Fly by Fran Hodgkins and True Kelley (2007)*</li> </ul>
	<ul> <li>"Who Has Seen the Wind?" by Christina G. Rossetti (1893)</li> <li>Charlotte's Web by E. B. White (1952)*</li> <li>Sarah, Plain and Tall by Patricia MacLachlan (1985)</li> <li>Tops and Bottoms by Janet Stevens (1995)</li> <li>Poppleton in Winter by Cynthia Rylant, illustrated by Mark Teague (2001)</li> </ul>	<ul> <li>A Medieval Feast by Aliki (1983)</li> <li>From Seed to Plant by Gail Gibbons (1991)</li> <li>The Story of Ruby Bridges by Robert Coles (1995)*</li> <li>A Drop of Water: A Book of Science and Wonder by Walter Wick (1997)</li> <li>Moonshot: The Flight of Apollo 11 by Brian Floca (2009)</li> </ul>
	<ul> <li>Alice's Adventures in Wonderland by Lewis Carroll (1865)</li> <li>"Casey at the Bat" by Ernest Lawrence Thayer (1888)</li> <li>The Black Stallion by Walter Farley (1941)</li> <li>"Zlateh the Goat" by Isaac Bashevis Singer (1984)</li> <li>Bud, Not Buddy by Christopher Paul Curtis (1999)</li> <li>The Birchbark House by Louise Erdrich (1999)</li> <li>Where the Mountain Meets the Moon by Grace Lin (2009)</li> </ul>	<ul> <li>Discovering Mars by Melvin Berger (1992)</li> <li>Hurricanes: Earth's Mightiest Storms by Patricia Lauber (1996)</li> <li>A History of US by Joy Hakim (2005)</li> <li>Horses by Seymour Simon (2006)</li> <li>Quest for the Tree Kangaroo: An Expedition to the Cloud Forest of New Guinea by Sy Montgomery (2006)</li> </ul>

Note: Given space limitations, the illustrative texts listed above are meant only to show individual titles that are representative of a wide range of topics and genres. (See Appendix B for excerpts of these and other texts illustrative of K–5 text complexity.) At a curricular or instructional level, within and across grade levels, texts need to be selected around topics or themes that generate knowledge and allow students to study that topic in depth. On the next page is an example of progressions of texts building knowledge across grade levels.

<sup>1</sup>Children at the kindergarten and grade 1 levels should be expected to read texts independently that have been specifically written to correlate to their reading level and their word knowledge. Many of the titles listed above are meant to supplement carefully structured independent reading with books to read along with a teacher or that are read aloud to students to build knowledge and cultivate a joy in reading.

## Staying on Topic Within a Grade and Across Grades: How to Build Knowledge Systematically in English Language Arts K–5

Building knowledge systematically in English language arts is like giving children various pieces of a puzzle in each grade that, over time, will form one big picture. At a curricular or instructional level, texts—within and across grade levels—need to be selected around topics or themes that systematically develop the knowledge base of students. Within a grade level, there should be an adequate number of titles on a single topic that would allow children to study that topic for a sustained period. The knowledge children have learned about particular topics in early grade levels should then be expanded and developed in subsequent grade levels to ensure an increasingly deeper understanding of these topics. Children in the upper elementary grades will generally be expected to read these texts independently and reflect on them in writing. However, children in the early grades (particularly K–2) should participate in rich, structured conversations with an adult in response to the written texts that are read aloud, *orally* comparing and contrasting as well as analyzing and synthesizing, in the manner called for by the *Standards*.

Preparation for reading complex informational texts should begin at the very earliest elementary school grades. What follows is one example that uses domain-specific nonfiction titles across grade levels to illustrate how curriculum designers and classroom teachers can infuse the English language arts block with rich, age-appropriate content knowledge and vocabulary in history/social studies, science, and the arts. Having students listen to informational read-alouds in the early grades helps lay the necessary foundation for students' reading and understanding of increasingly complex texts on their own in subsequent grades.

Exemplar Texts on a Topic Across Grades	К	1	2–3	4–5
Across Grades The Human Body Students can begin learning about the human body starting in kindergarten and then review and extend their learning during each subsequent grade.	The five senses and associated body parts <i>My Five Senses</i> by Aliki (1989) <i>Hearing</i> by Maria Rius (1985) <i>Sight</i> by Maria Rius (1985) <i>Smell</i> by Maria Rius (1985) <i>Taste</i> by Maria Rius (1985) <i>Touch</i> by Maria Rius (1985) Taking care of your body: Overview (hygiene, diet, exercise,	<ul> <li>Introduction to the systems of the human body and associated body parts</li> <li>Under Your Skin: Your Amazing Body by Mick Manning (2007)</li> <li>Me and My Amazing Body by Joan Sweeney (1999)</li> <li>The Human Body by Gallimard Jeunesse (2007)</li> <li>The Busy Body Book by Lizzy Rockwell (2008)</li> </ul>	<ul> <li>Digestive and excretory systems</li> <li>What Happens to a Hamburger by Paul Showers (1985)</li> <li>The Digestive System by Christine Taylor- Butler (2008)</li> <li>The Digestive System by Rebecca L. Johnson (2006)</li> <li>The Digestive System by Kristin Petrie (2007)</li> <li>Taking care of your body: healthy eating</li> </ul>	<ul> <li>Circulatory system</li> <li>The Heart by Seymour Simon (2006)</li> <li>The Heart and Circulation by Carol Ballard (2005)</li> <li>The Circulatory System by Kristin Petrie (2007)</li> <li>The Amazing Circulatory System by John Burstein (2009)</li> <li>Respiratory system</li> <li>The Lungs by Seymour Simon (2007)</li> </ul>
	<ul> <li>rest)</li> <li>My Amazing Body: A First Look at Health &amp; Fitness by Pat Thomas (2001)</li> <li>Get Up and Go! by Nancy Carlson (2008)</li> </ul>	<ul> <li>First Encyclopedia of the Human Body by Fiona Chandler (2004)</li> <li>Taking care of your body: Germs, diseases, and preventing illness</li> </ul>	<ul> <li>and nutrition</li> <li>Good Enough to Eat by Lizzy Rockwell (1999)</li> <li>Showdown at the Food Pyramid by Rex Barron (2004)</li> </ul>	<ul> <li>The Respiratory System by Susan Glass (2004)</li> <li>The Respiratory System by Kristin Petrie (2007)</li> <li>The Remarkable Respiratory System by John Burstein (2009)</li> </ul>
	<ul> <li>Go Wash Up by Doering Tourville (2008)</li> <li>Sleep by Paul Showers (1997)</li> <li>Fuel the Body by Doering Tourville (2008)</li> </ul>	<ul> <li>Germs Make Me Sick by Marilyn Berger (1995)</li> <li>Tiny Life on Your Body by Christine Taylor-Butler (2005)</li> <li>Germ Stories by Arthur Kornberg (2007)</li> <li>All About Scabs by GenichiroYagu (1998)</li> </ul>	<ul> <li>Muscular, skeletal, and nervous systems</li> <li>The Mighty Muscular and Skeletal Systems Crabtree Publishing (2009)</li> <li>Muscles by Seymour Simon (1998)</li> <li>Bones by Seymour Simon (1998)</li> <li>The Astounding Nervous System Crabtree Publishing (2009)</li> <li>The Nervous System by Loelle Riley (2004)</li> </ul>	<ul> <li>Endocrine system</li> <li>The Endocrine System by Rebecca Olien (2006)</li> <li>The Exciting Endocrine System by John Burstein (2009)</li> </ul>

# **Standards for English Language Arts**

6-12

## College and Career Readiness Standards for Reading

The grades 6–12 standards on the following pages define what students should understand and be able to do in each grade and build toward the ten College and Career Readiness Standards.

#### Key Ideas and Details

- 1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- **2.** Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- **3.** Analyze in detail where, when, why, and how events, ideas, and characters develop and interact over the course of a text.

#### Craft and Structure

- 4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and explain how specific word choices shape meaning or tone.
- **5.** Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section or chapter) relate to each other and the whole.
- 6. Assess how point of view or purpose shapes the content and style of a text.

#### Integration of Knowledge and Ideas

- **7.** Synthesize and apply information presented in diverse ways (e.g., through words, images, graphs, and video) in print and digital sources in order to answer questions, solve problems, or compare modes of presentation.<sup>1</sup>
- **8.** Delineate and evaluate the reasoning and rhetoric within a text, including assessing whether the evidence provided is relevant and sufficient to support the text's claims.
- **9.** Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

#### Range and Level of Text Complexity

**10.** Read complex texts independently, proficiently, and fluently, sustaining concentration, monitoring comprehension, and, when useful, rereading.<sup>2</sup>

<sup>1</sup>Please see "Research to Build Knowledge" in Writing and "Comprehension and Collaboration" in Speaking and Listening for additional standards relevant to gathering, assessing, and applying information from print and digital sources. <sup>2</sup>Proficiency in this standard is measured by students' ability to read a range of appropriately complex text in each grade as defined on page 36.

# Note on range and content of student reading

To become college and career ready, students must grapple with works of exceptional craft and thought whose range extends across genres, cultures, and centuries. Such works offer profound insights into the human condition and serve as models for students' own thinking and writing. Along with high-quality contemporary works, these texts should be chosen from among the founding U.S. documents, the classics of American literature, and the timeless dramas of Shakespeare. Through wide and deep reading of literature and literary nonfiction of steadily increasing sophistication, students gain a reservoir of literary and cultural knowledge, references, and images; the ability to evaluate intricate arguments; and the capacity to surmount the challenges posed by complex texts.

## Reading Standards for Literature 6–12

Following are the standards for grades 6–12, which relate to their College and Career Readiness counterparts by number. They offer a focus for instruction each year and help ensure that students gain adequate exposure to a range of texts and tasks. Rigor is also infused through the requirement that students read increasingly complex texts through the grades.

Grade 6 students: Grade 7 students: Grade 7		Grade 8 students:				
Ke	y Ideas and Details					
1.	Cite specific textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	1.	Cite several sources of textual evidence when useful to support analysis of what the text says explicitly as well as inferences drawn from the text.	1.	Cite a wide range of evidence throughout the text when useful to support analysis of what the text says explicitly as well as inferences drawn from the text.	
2.	Analyze how a theme or central idea develops over the course of a text, drawing on key details.	2.	Analyze how two or more themes or central ideas in a text relate to one another, drawing on key details.	2.	Analyze how recurring images or events contribute to the development of a theme or central idea in a text.	
3.	Describe how a story's plot unfolds (in a series of episodes or as a problem to be solved) as well as how characters adapt or change as they move toward a resolution.	3.	Analyze how particular lines of dialogue or specific incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.	3.	Analyze how elements of a story or drama interact (e.g., how plot and setting are integral to one another; how the setting affects characters).	
Cra	aft and Structure					
4.	Interpret the figurative and connotative meanings of words and phrases as they are used in a text.	4.	Interpret the figurative and connotative meanings of words and phrases as they are used in a text and describe in detail a specific word choice and its impact on meaning and tone.	4.	Explain the comparisons an author makes through metaphors, allusions, or analogies in a text and analyze how those comparisons contribute to meaning.	
5.	Explain the effect of such devices as flashbacks and foreshadowing on the development of the plot and meaning of a text.	5.	Describe how any given sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the plot or themes.	5.	Compare a poem with a conventional structure, such as a sonnet, to a poem without a proscribed structure, such as a free verse poem.	
6.	Describe how an author establishes the point of view of the speaker or a character in a poem, drama, or story.	6.	Analyze how an author presents the points of view of different characters in a story or drama, including their different reactions to the same person or event(s).	6.	Explain how a difference in the perspective or knowledge of characters and the audience (e.g., created through the device of dramatic irony) produces suspense or humor.	
Inte	egration of Knowledge and Ideas					
7.	Analyze how illustrations, diagrams, multimedia elements, and words contribute to the meaning and tone of a print or digital text (e.g., graphic novel, multimedia presentation of fiction).	7.	Compare and contrast a text to its filmed, staged, or multimedia version, including examining some techniques unique to each medium (e.g., lighting, sound, color, camera focus and angles).	7.	Analyze to what degree a filmed or live production of a drama or story stays faithful to or departs from the script or text.	
8.	(Not applicable to literature)	8.	(Not applicable to literature)	8.	(Not applicable to literature)	
9.	Analyze stories in the same genre (e.g., mysteries, adventure stories), comparing and contrasting their approaches to similar themes and topics.	9.	Analyze a specific case in which a modern work of fiction draws on patterns of events or character types found in traditional literature (e.g., the hero, the quest).	9.	Compare a fictional portrayal of a time, place, or character to historical sources from the same period as a means of understanding how authors use or alter history.	
Ra	Range and Level of Text Complexity					
10.	Read literature independently, proficiently, and fluently in the grades 6–8 text complexity band; read texts at the high end of the range with scaffolding as needed.	10.	Read literature independently, proficiently, and fluently in the grades 6–8 text complexity band; read "stretch" texts in the grades 9–10 text complexity band with scaffolding as needed.	10.	Read literature independently, proficiently, and fluently in the grades 6–8 text complexity band; engage in sustained practice with "stretch" texts in the grades 9–10 text complexity band with scaffolding as needed.	

## Reading Standards for Literature 6–12

	Grades 9–10 students:	Grades 11–12 students:					
Kej	y Ideas and Details						
1.	Cite the evidence in the text that most strongly supports a specific analysis of what the text says explicitly as well as inferences drawn from the text.	1.	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves things uncertain.				
2.	Analyze in detail the development and refinement of a theme or central idea in a text, including how it emerges and how it is shaped and refined by specific details.	2.	Analyze how multiple themes or central ideas in a text interact, build on, and, in some cases, conflict with one another.				
3.	Analyze how complex characters, including those with conflicting motivations or divided loyalties, develop over the course of a text, interact with other characters, and advance the plot or develop the theme.	3.	Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).				
Cra	aft and Structure						
4.	Evaluate how an author's use of language, including formality of diction, shapes meaning and tone in a text (e.g., how the language evokes a sense of time and place, how it sets a formal or informal tone).	4.	Analyze in detail the condensed language of poems (or particularly rich language use in a narrative or drama), determining how specific word choices and multiple meanings shape the impact and tone.				
5.	Analyze how an author structures a text, orders events within it (e.g., parallel plots), and manipulates time (e.g., pacing) to create mystery, tension, or surprise.	5.	Analyze how an author's choices concerning how to structure a text (e.g., electing at what point to begin or end a story) shape the meaning of the text.				
6.	Analyze a case in which the author's work takes a position or stance on a social issue or other topic and describe how the author carries out that purpose.	6.	Analyze an author's use of satire, sarcasm, irony, understatement, or other means that requires a reader to understand various layers of meaning in a text.				
Inte	egration of Knowledge and Ideas						
7.	Compare and contrast the representation of a subject or a key scene in two different artistic mediums (e.g., Auden's "Musée de Beaux Arts" and Breughel's <i>Landscape with the Fall of Icarus</i> ).	7.	Compare and contrast multiple interpretations of a drama or story (e.g., recorded or live productions), distinguishing how each version interprets the source text. (This includes at least one play by Shakespeare as well as one play by an American dramatist.)				
8.	(Not applicable to literature)	8.	(Not applicable to literature)				
9.	Analyze a wide range of nineteenth- and early-twentieth-century foundational works of American literature, comparing and contrasting approaches to similar ideas or themes in two or more texts from the same period.	9.	Analyze how an author draws on and transforms fictional source material in a specific work (e.g., how Shakespeare draws on a story from Ovid or how a later author draws on a play by Shakespeare).				
Ra	nge and Level of Text Complexity						
10.	<b>In grade 9</b> , read literature independently, proficiently, and fluently in the grades 9–10 text complexity band; read texts at the high end of the range with scaffolding as needed. <b>In grade 10</b> , read literature independently, proficiently, and fluently in the grades 9–10 text complexity band; read "stretch" texts in the grades 11–CCR text complexity band with scaffolding as needed.	10.	<ul> <li>In grade 11, read literature independently, proficiently, and fluently in the grades 11–CCR text complexity band; read texts at the high end of the range with scaffolding as needed.</li> <li>In grade 12, read literature independently, proficiently, and fluently in the grades 11–CCR text complexity band; read "stretch" texts in the Beyond CCR text complexity band with scaffolding as needed.</li> </ul>				

## Reading Standards for Informational Text 6–12

	Grade 6 students: Grade 7 students:			Grade 8 students:			
Key Ideas and Details							
1.	Cite specific textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.	1.	Cite several sources of textual evidence when useful to support analysis of what the text says explicitly as well as inferences drawn from the text.	1.	Cite a wide range of evidence throughout the text when useful to support analysis of what the text says explicitly as well as inferences drawn from the text.		
2.	Analyze how a central idea develops over the course of a text, drawing on key details.	2.	Analyze how two or more central ideas in a text relate to one another, drawing on key details.	2.	Provide an objective summary of a text, accurately conveying an author's view and specific points.		
3.	Determine the causes or reasons that link different events, ideas, or information in a text, drawing on key details.	3.	Describe in detail how an author introduces, illustrates, and elaborates a key idea in a text (e.g., through examples or anecdotes).	3.	Analyze how an author introduces, illustrates, and elaborates two or more significant ideas in a text, including how the relationship between the ideas is expressed.		
Cr	aft and Structure						
4.	Interpret words and phrases as they are used in a text, including technical, figurative, and connotative meanings, and analyze how an author's choice of specific words in a text contributes to understanding the ideas or concepts.	4.	Interpret words and phrases as they are used in a text, including technical, figurative, and connotative meanings, and describe in detail how an author's choice of specific words affects meaning and tone.	4.	Explain the comparisons an author makes through metaphors, allusions, and analogies in a text and analyze how those comparisons contribute to meaning.		
5.	Describe the structure an author uses to organize a specific text, including how the major sections contribute to the whole.	5.	Describe how any given sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.	5.	Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.		
6.	Compare and contrast one author's point of view on events with that of another (e.g., a memoir written by and a biography on the same person).	6.	Describe an author's point of view or purpose in a text and analyze how the author distinguishes his or her point of view from that of others.	6.	Compare and contrast the points of view and purposes of two authors writing about the same topic.		
In	egration of Knowledge and Ideas						
7.	Compare and contrast the accounts of a subject in different mediums (e.g., a person's life story told in print, video, or multimedia), analyzing which details are emphasized and how the account unfolds in each version.	7.	Compare and contrast the impression conveyed by a printed text to that conveyed when listening to or viewing a video or multimedia presentation of it (e.g., analyzing how the delivery of a speech affects its impact).	7.	Evaluate the advantages and disadvantages of using different mediums (e.g., text, video, multimedia) to present a particular topic or idea.		
8.	Distinguish among fact, opinion, and reasoned judgment presented in a text.	8.	Identify the stated and unstated premises of an argument and explain how they contribute to the conclusions reached.	8.	Evaluate an argument's claims and reasoning as well as the degree to which evidence supports each claim.		
9.	Assess the similarities and differences between two or more texts on the same subject and apply the knowledge gained to inform reading of additional texts.	9.	Analyze where two or more texts provide conflicting information on the same subject and determine whether the texts disagree on matters of fact or on matters of interpretation.	9.	Compare and contrast how two or more authors writing about the same topic shape their presentations of key information by emphasizing different evidence or advancing different interpretations of facts.		
Ra	ange and Level of Text Complexity						
10	. Read informational text independently, proficiently, and fluently in the grades 6–8 text complexity band; read texts at the high end of the range with scaffolding as needed.	10.	Read informational text independently, proficiently, and fluently in the grades 6–8 text complexity band; read "stretch" texts in the grades 9–10 text complexity band with scaffolding as needed.	10.	Read informational text independently, proficiently, and fluently in the grades 6–8 text complexity band; engage in sustained practice with "stretch" texts in the grades 9–10 text complexity band with scaffolding as needed.		

## Reading Standards for Informational Text 6–12

	Grades 9–10 students:	Grades 11–12 students:					
Key	y Ideas and Details						
1.	Cite evidence in the text that most strongly supports a specific analysis of what the text says explicitly as well as inferences drawn from the text.	1.	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves things uncertain.				
2.	Analyze in detail the development and refinement of a central idea in a text, including how it emerges and is shaped and refined by specific details.	2.	Analyze how multiple ideas in a text interact, build on, and, in some cases, conflict with one another.				
3.	Analyze the interactions between and among ideas and events, including how ideas and events influence one another.	3.	Analyze in detail an author's ideas by describing how the ideas are developed and refined by specific sentences, paragraphs, and larger portions of a text.				
Cra	aft and Structure						
4.	Evaluate how an author's use of language, including formality and type of diction, shapes meaning and tone in a text (e.g., the formality of a court opinion or a newspaper).	4.	Interpret how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines <i>faction</i> in Federalist No. 10 and No. 51).				
5.	Evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.	5.	Analyze how an author's choices concerning how to structure a text (e.g., how reasons, evidence, and information are organized and emphasized) shape the meaning of the text.				
6.	Analyze documents of historical and literary significance, including foundational U.S. documents (e.g., the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights) for their premises, purposes, and structure.	6.	Analyze how various authors express different points of view on similar events or issues, assessing the authors' assumptions, use of evidence, and reasoning, including analyzing seminal U.S. documents (e.g., <i>The Federalist</i> , landmark U.S. Supreme Court majority opinions and dissents).				
Inte	egration of Knowledge and Ideas						
7.	Synthesize information presented in different formats (e.g., text, video, mutimedia) to generate a coherent understanding of an issue.	7.	Synthesize and apply multiple sources of information presented in different formats in order to address a question or solve a problem, including resolving conflicting information.				
8.	Assess the truth of an argument's explicit and implicit premises by determining whether the evidence presented in the text justifies the conclusions.	8.	Evaluate the reasoning and rhetoric that support an argument or explanation, including assessing the relevance and sufficiency of evidence and identifying false statements or fallacious reasoning.				
9.	Analyze how authors argue with or otherwise respond to one another's ideas or accounts of key events, evaluating the strength of each author's interpretation.	9.	Synthesize explanations and arguments from diverse sources to provide a coherent account of events or ideas, including resolving conflicting information.				
Ra	nge and Level of Text Complexity						
10.	<b>In grade 9</b> , read informational text independently, proficiently, and fluently in the grades 9–10 text complexity band; read texts at the high end of the range with scaffolding as needed.	10.	<b>In grade 11</b> , read informational text independently, proficiently, and fluently in the grades 11–CCR text complexity band; read texts at the high end of the range with scaffolding as needed.				
	<b>In grade 10</b> , read informational text independently, proficiently, and fluently in the grades 9–10 text complexity band; read "stretch" texts in the grades 11–CCR text complexity band with scaffolding as needed.		<b>In grade 12</b> , read informational text independently, proficiently, and fluently in the grades 11–CCR text complexity band; read "stretch" texts in the Beyond CCR text complexity band with scaffolding as needed.				

## Range and Level of Text Complexity for Student Reading by Grade (Standard 10)

Students demonstrate proficiency in reading texts at the following ranges of text complexity to progress on a path to college and career readiness.

6	6-8 Level Text 100%	9–10 Level Text		<b>In grade 6</b> , students focus on reading texts independently in the grades 6–8 text complexity band, with scaffolding likely required for texts at the high end of the range.					
		-							
7	6-8 Level Text	9–10 Level Text		<b>In grade 7</b> , students focus on reading texts independently in the grades 6–8 text complexity band					
	90%	10%		(90 percent) and are introduced to texts in the grades 9–10 text complexity band as "stretch" texts (10 percent), which will likely require scaffolding.					
8	6-8 Level Text	9–10 Level Text		In grade 8, students focus on reading texts independently in the grades 6–8 text complexity band					
	70%	30%		(70 percent) as well as sustained practice with texts in the grades 9–10 text complexity band as "stretch" texts (30 percent), which will likely require scaffolding.					
9	9–10 Level Text	11-CCR Level Text		<b>In grade 9</b> , students focus on reading texts independently in the grades 9–10 text complexity hand with scaffelding likely required for texts at the high and of the range					
	100%			band, with scattording likely required for texts at the high end of the range.					
10	9-10 Level Text	11-CCR Level Text		<b>In grade 10</b> , students focus on reading texts independently in the grades 9–10 text complexity band (70 percent) and are introduced to texts in the grades 11–CCR text complexity band as					
	70%	30%		"stretch" texts (30 percent), which will likely require scaffolding.					
11	9–10 Level Text	11-CCR Level Text	Beyond CCR	In grade 11, students focus on reading texts independently in the grades 11–CCR text complexity					
		100%		band, with scattolding likely required for texts at the high end of the range.					
12	9-10 Level Text	11-CCR Level Text	Beyond CCR	In grade 12, students focus on reading texts independently in the grades 11–CCR text complexity band (70 percent) and are introduced to texts in the Beyond CCR text complexity band as "stretch"					
		70%	30%	texts (30 percent), which will likely require scaffolding.					

Note: In any given classroom, the actual range of students' reading ability could be greater than the proposed range. Some students will require extra time and intense support and scaffolding to enable them to read grade-level material, whereas other students will be ready for—and should be encouraged to read—more advanced texts.

## Measuring Text Complexity: Three Factors



 Qualitative evaluation of the text:
 Levels of meaning, structure, language conventionality and clarity, and knowledge demands

 Quantitative evaluation of the text:
 Readability measures and other scores of text complexity

 Matching reader to text and task:
 Reader knowledge, motivation, and interests as well as the complexity generated by the tasks to be assigned and the questions to be posed

Note: More detailed information on text complexity and how it is measured is contained in Appendix A.

## College and Career Readiness Standards for Writing

The grades 6–12 standards on the following pages define what students should understand and be able to do in each grade and build toward the ten College and Career Readiness Standards.

#### Text Types and Purposes<sup>1</sup>

- 1. Write arguments to support a substantive claim with clear reasons and relevant and sufficient evidence.
- **2.** Write informative/explanatory texts to convey complex information clearly and accurately through purposeful selection and organization of content.
- **3.** Write narratives to convey real or imagined experiences, individuals, or events and how they develop over time.

#### Production and Distribution of Writing

- **4.** Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience.
- 5. Strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.<sup>2</sup>
- 6. Use technology, including the Internet, to produce, publish, and interact with others about writing.

#### Research to Build Knowledge

- **7.** Perform short, focused research projects as well as more sustained research in response to a focused research question, demonstrating understanding of the material under investigation.
- **8.** Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate and cite the information while avoiding plagiarism.
- **9.** Write in response to literary or informational sources, drawing evidence from the text to support analysis and reflection as well as to describe what they have learned.

#### Range of Writing

**10.** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.<sup>3</sup>

<sup>1</sup>These broad categories of writing include many subgenres. See Appendix A for definitions of key writing types.

<sup>3</sup>This standard is measured by the proficiency of student writing products.

# Note on range and content of student writing

For students, writing is a key means of asserting and defending claims, showing what they know about a subject, and conveying what they have experienced, imagined, thought, and felt. To be college- and career-ready writers, students must take task, purpose, and audience into careful consideration, choosing words, information, structures, and formats deliberately. They need to be able to use technology strategically when creating, refining, and collaborating on writing. They have to become adept at gathering information, evaluating sources, and citing material accurately, reporting findings from their research and analysis of sources in a clear and cogent manner. They must have the flexibility, concentration, and fluency to produce high-quality first-draft text under a tight deadline as well as the capacity to revisit and make improvements to a piece of writing over multiple drafts when circumstances encourage or require it. To meet these goals, students must devote significant time and effort to writing, producing numerous pieces over short and long time frames throughout the year.

<sup>&</sup>lt;sup>2</sup>See "Conventions" in Language, pages 47–50, for specific editing expectations.

## Writing Standards 6–12

Following are the standards for grades 6–12, which relate to their College and Career Readiness counterparts by number. They offer a focus for instruction in each year to help ensure that students gain adequate exposure to a range of skills and applications. Growth in writing ability is characterized by an increasing sophistication in all aspects of language use, from vocabulary and syntax to the development and organization of ideas. At the same time, the content and sources that students address in their writing grow in demand every year.

Grade 6 students:	Grade 7 students:	Grade 8 students:
Text Types and Purposes		
<ol> <li>Write arguments in which they:         <ul> <li>Introduce a claim about a topic or issue and organize the reasons and evidence to support the claim.</li> <li>Support the claim with clear reasons and relevant evidence.</li> <li>Use words, phrases, and clauses to convey the relationships among claims and reasons.</li> <li>Sustain an objective style and tone.</li> <li>Provide a concluding statement or section that follows from the argument.</li> </ul> </li> </ol>	<ol> <li>Write arguments in which they:         <ul> <li>Introduce a claim about a topic or issue, acknowledge alternate or opposing claims, and organize the reasons and evidence logically to support the claim.</li> <li>Support the claim with logical reasoning and detailed, relevant evidence that demonstrate a comprehensive understanding of the topic.</li> <li>Use words, phrases, and clauses to convey the relationships among the claims, reasons, and evidence</li> <li>Sustain an objective style and tone.</li> <li>Provide a concluding statement or section that follows logically from the argument.</li> </ul> </li> </ol>	<ol> <li>Write arguments in which they:         <ul> <li>a. Introduce a claim about a topic or issue, distinguish it from alternate or opposing claims, and organize the reasons and evidence logically to support the claim.</li> <li>b. Support the claim with logical reasoning and detailed and relevant evidence from credible sources to demonstrate a comprehensive understanding of the topic.</li> <li>c. Use words, phrases, and clauses to make clear the relationships among claims, reasons, counterclaims, and evidence.</li> <li>d. Sustain an objective style and tone.</li> <li>e. Provide a concluding statement or section that follows logically from the argument.</li> </ul> </li> </ol>
<ol> <li>Write informative/explanatory texts in which they:         <ul> <li>a. Introduce a topic and organize information                 appropriate to the purpose, using strategies such as                 definition, classification, comparison/contrast, and                 cause/effect.</li> <li>b. Develop the topic with relevant facts, definitions,                 concrete details, quotations, or other information and                 examples.</li> <li>c. Use appropriate links and varied sentence structures to                 join and clarify ideas.</li> <li>d. Use straightforward language to create an objective                 style appropriate for a reader seeking information.</li> <li>e. Provide a conclusion that follows logically from the                 information or explanation presented.</li> </ul> </li> </ol>	<ol> <li>Write informative/explanatory texts in which they:         <ul> <li>a. Introduce and establish a topic that provides a sense of what is to follow and organize information appropriate to the purpose, using strategies such as definition, classification, comparison/contrast, and cause/effect.</li> <li>b. Develop the topic with relevant and accurate facts, definitions, concrete details, quotations, or other information and examples.</li> <li>c. Use appropriate links and varied sentence structures to create cohesion and clarify ideas.</li> <li>d. Use precise language and sustain an objective style appropriate for a reader seeking information.</li> <li>e. Provide a conclusion that follows logically from the</li> </ul> </li> </ol>	<ol> <li>Write informative/explanatory texts in which they:         <ul> <li>a. Introduce and establish a topic and organize information under broader concepts or categories.</li> <li>b. Develop the topic with well-chosen, relevant, and accurate facts, concrete details, quotations, or other information and examples.</li> <li>c. Use varied links and sentence structures to create cohesion and clarify information and ideas.</li> <li>d. Use precise language and domain-specific and technical wording (when appropriate) and sustain a formal, objective style appropriate for a reader seeking information.</li> <li>e. Provide a conclusion that follows logically from the information or explanation presented.</li> </ul> </li> </ol>

## Writing Standards 6–12

Grade 6 students:	Grade 7 students:	Grade 8 students:		
Text Types and Purposes (continued)				
<ol> <li>Write narratives in which they:         <ul> <li>Engage and orient the reader by establishing a conternant point of view, and organize a sequence of event or experiences.</li> <li>Develop narrative elements (e.g., setting, event sequence, characters) using relevant sensory details</li> <li>Use a variety of transition words, phrases, and claus to convey sequence, shift from one time frame or setting to another, and/or show the relationships among events and experiences.</li> <li>Choose words and phrases to develop the events, experiences, and ideas precisely.</li> <li>Provide a satisfying conclusion that follows from the events, experiences, or ideas.</li> </ul> </li> </ol>	<ol> <li>Write narratives in which they:         <ul> <li>a. Engage and orient the reader by establishing a context and point of view, and purposefully organize a sequence of events or experiences.</li> <li>b. Develop narrative elements (e.g., setting, conflict, complex characters) with relevant and specific sensory details.</li> <li>c. Use a variety of techniques to convey sequence, shift from one time frame or setting to another, and/or show the relationships among events or experiences.</li> <li>d. Choose words and phrases to develop the events, experiences, and ideas precisely and to create mood.</li> <li>e. Provide a satisfying conclusion that follows from the events, experiences, or ideas.</li> </ul> </li> </ol>	<ol> <li>Write narratives in which they:         <ul> <li>a. Engage and orient the reader by establishing a context and point of view, and purposefully organize a progression of events or experiences.</li> <li>b. Develop narrative elements (e.g., setting, plot, event sequence, complex characters) with well-chosen, relevant, and specific sensory details.</li> <li>c. Use a variety of techniques to convey sequence in multiple storylines, shift from one time frame or setting to another, and/or show the relationships among events or experiences.</li> <li>d. Choose words and phrases to effectively develop the events, experiences, and ideas precisely and to create mood.</li> <li>e. Provide a satisfying conclusion that follows from the events, experiences, or ideas.</li> </ul> </li> </ol>		
Production and Distribution of Writing				
<b>4.</b> Produce writing in which the organization, development substance, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types a defined in Standards 1–3 above.)	<ul> <li>4. Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in Standards 1–3 above.)</li> </ul>	<ol> <li>Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in Standards 1–3 above.)</li> </ol>		
<b>5.</b> With some guidance and support from peers and adults, strengthen writing as needed by planning, revising, editin rewriting, or trying a new approach.	<ul><li>5. With some guidance and support from peers and adults, strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach after rethinking how well questions of purpose have been addressed.</li></ul>	5. With some guidance and support from peers and adults, strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach after rethinking how well questions of purpose and context have been addressed.		
<b>6.</b> Use technology, including the Internet, to produce, publi and interact with others about writing, including linking t and citing online sources.	<ul> <li>b. Use technology, including the Internet, to produce,</li> <li>publish, and interact with others about writing, including</li> <li>presenting and citing information in a digital format.</li> </ul>	6. Use technology, including the Internet, to present and cite information effectively in a digital format, including when publishing and responding to writing.		

## Writing Standards 6–12

Grade 6 students:			Grade 7 students:		Grade 8 students:	
Re	search to Build Knowledge					
7.	Perform short, focused research projects in response to a question and refocus the inquiry in response to further research and investigation.	7.	Perform short, focused research projects in response to a question and generate additional related and focused questions for further research and investigation.	7.	Perform short, focused research projects in response to a question and generate additional related questions that allow for multiple avenues of exploration.	
8.	Gather relevant information from multiple print and digital sources, assess the credibility of each source, and quote or paraphrase the data and conclusions of others while avoiding plagiarism and documenting sources.	8.	Gather relevant information from multiple print and digital sources using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others, avoiding plagiarism and following a standard format for citation.	8.	Gather relevant information from multiple print and digital sources using advanced search features; assess the credibility and accuracy of each source; and quote or paraphrase the evidence, avoiding plagiarism and following a standard format for citation.	
9.	<ul> <li>Write in response to literary or informational sources, drawing evidence from the text to support analysis and reflection as well as to describe what they have learned.</li> <li>a. Apply grade 6 reading standards to literature (e.g., "Analyze stories in the same genre (e.g., mysteries, adventure stories), comparing and contrasting their approaches to similar themes and topics.").</li> <li>b. Apply grade 6 reading standards to literary nonfiction (e.g., "Distinguish among fact, opinion, and reasoned judgment presented in a text").</li> </ul>	9.	<ul> <li>Write in response to literary or informational sources, drawing evidence from the text to support analysis and reflection as well as to describe what they have learned.</li> <li>a. Apply grade 7 reading standards to literature (e.g., "Analyze a specific case in which a modern work of fiction draws on patterns of events or character types found in traditional literature (e.g., the hero, the quest).</li> <li>b. Apply grade 7 reading standards to literary nonfiction (e.g., "Identify the stated and unstated premises of an argument and explain how they contribute to the conclusions reached").</li> </ul>	9.	<ul> <li>Write in response to literary or informational sources, drawing evidence from the text to support analysis and reflection as well as to describe what they have learned:</li> <li>a. Apply grade 8 reading standards to literature (e.g., "Compare a fictional portrayal of a time, place, or character to historical sources from the same period as a means of understanding how authors use or alter history").</li> <li>b. Apply grade 8 reading standards to literary nonfiction (e.g., "Evaluate an argument's claims and reasoning as well as the degree to which evidence supports each claim").</li> </ul>	
Ra	nge of Writing					
10.	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	10.	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	10.	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	

## Writing Standards 6–12

#### Grades 9–10 students:

#### Text Types and Purposes

- **1.** Write arguments which they:
  - a. Introduce a precise claim, distinguish it from alternate or opposing claims, and provide an organization that establishes clear relationships among the claim, reasons, and evidence.
  - b. Develop a claim and counterclaim fairly, supplying evidence for each, while pointing out the strengths of their own claim and the weaknesses of the counterclaim.
  - c. Use precise words, phrases, and clauses to make clear the relationships between claims and reasons, between reasons and evidence, and between claims and counterclaims.
  - d. Sustain an objective style and tone while attending to the norms and conventions of the specific discipline as well as to the audience's knowledge of the issue.
  - e. Provide a concluding statement or section that follows logically from the argument and offers a reflection or recommendation.
- **2.** Write informative/explanatory texts in which they:
  - a. Introduce a topic and organize information under broader concepts and categories to make clear the connections and distinctions between key ideas appropriate to the purpose; include formatting (e.g., headings) and graphics (e.g., figures, tables) when useful to clarify ideas.
  - b. Develop a complex topic through well-chosen, relevant, and sufficient facts, concrete details, quotations, extended definitions, or other information and examples.
  - c. Use varied transitions and sentence structures to create cohesion, clarify information and ideas, and link major sections in the text.
  - d. Use precise language and domain-specific and technical wording (when appropriate) to manage the complexity of the topic in a style that responds to the specific discipline and context as well as to the expertise of likely readers.
  - e. Provide a conclusion that follows logically from the information or explanation provided and articulates the implications or significance of the topic.

#### Grades 11–12 students:

- **1.** Write arguments in which they:
  - a. Introduce a substantive claim, establish its significance, distinguish it from alternate or opposing claims, and create an organization so that claims, reasons, and evidence are purposefully and logically sequenced.
  - b. Develop a claim and counterclaim thoroughly and fairly, supplying the most relevant evidence, while pointing out the strengths of their own claim and the weaknesses of the counterclaim.
  - c. Use precise words, phrases, and complex syntax to make explicit the relationships between claims and reasons, between reasons and evidence, and between claims and counterclaims.
  - d. Sustain an objective style and tone while attending to the norms and conventions of the specific discipline as well as to the audience's knowledge, values, and possible biases.
  - e. Provide a concluding statement or section that follows logically from the argument and offers a reflection or recommendation.
- **2.** Write informative/explanatory texts in which they:
  - a. Introduce a complex topic and organize the information at multiple levels of the text so that each new piece of information builds on that which precedes it to create a unified whole; include formatting (e.g., headings) and graphics (e.g., figures, tables) when useful to clarify ideas.
  - b. Thoroughly develop aspects of a complex topic through the purposeful selection of the most significant and relevant facts, concrete details, quotations, extended definitions, or other information and examples.
  - c. Use varied transitional devices and sentence structures to create cohesion, clarify complex ideas, and link the major sections of the text.
  - d. Use precise language, domain-specific and technical wording (when appropriate), and techniques such as metaphor, simile, and analogy to manage the complexity of the topic in a style that responds to the specific discipline and context as well as to the expertise of likely readers.
  - e. Provide a well-developed conclusion that follows logically from the information or explanation provided and articulates the implications or significance of the topic.

## Writing Standards 6–12

	Grades 9–10 students:	Grades 11–12 students:				
Te	xt Types and Purposes (continued)					
3.	<ul> <li>Write narratives in which they:</li> <li>a. Engage the reader by establishing a problem, situation, or observation and purposefully organize a progression of events or experiences.</li> <li>b. Develop narrative elements (e.g., setting, event sequence, complex characters) with well-chosen, revealing details.</li> <li>c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.</li> <li>d. Use precise language to develop a picture of how the events, experiences, and ideas emerge and unfold.</li> <li>e. Provide a satisfying conclusion that follows from what is experienced, observed, or resolved over the course of the narrative.</li> </ul>	3.	<ul> <li>Write narratives in which they:</li> <li>a. Engage the reader by establishing the significance of a problem, situation, or observation and purposefully organize events or experiences.</li> <li>b. Develop narrative elements (e.g., setting, stance, event sequence, complex characters) with purposefully selected details that call readers' attention to what is most distinctive or worth noticing.</li> <li>c. Use a variety of techniques to build toward a particular impact (e.g., a sense of mystery, suspense, growth, or resolution).</li> <li>d. Use precise language to develop the events, experiences, and ideas clearly and to reinforce the style.</li> <li>e. Provide a satisfying conclusion that follows from what is experienced, observed, or resolved over the course of the narrative.</li> </ul>			
Pro	oduction and Distribution of Writing					
4.	Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for this standard are defined in Standards 1–3 above.)	4.	Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for this standard are defined in Standards 1–3 above.)			
5.	Strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific task and context.	5.	Strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.			
6.	Use technology, including the Internet, to produce, publish, and collaborate on a shared writing product, incorporating diverse and sometimes conflicting feedback.	6.	Demonstrate command of technology, including the Internet, to produce, publish, and update work in response to ongoing feedback, including fresh arguments or new information.			
Re	search to Build Knowledge					
7.	Perform short, focused research projects and more sustained research; synthesize multiple sources on a subject to answer a question or solve a problem.	7.	Perform short, focused research projects and more sustained research; synthesize multiple authoritative sources on a subject to answer a question or solve a problem.			
8.	Assemble evidence gathered from authoritative print and digital sources; assess the credibility and accuracy of the information and its strengths and limitations in terms of answering the research question; and integrate selected information into the text, avoiding overreliance on any one source and following a standard format for citation.	8.	Analyze evidence gathered from multiple authoritative print and digital sources; assess the credibility and accuracy of the information and its usefulness and relevance for the specific task, purpose, and audience; and integrate selected information into the text, following a standard format for citation.			

9.

## Writing Standards 6–12

#### Grades 9–10 students:

#### Research to Build Knowledge (continued)

- **9.** Write in response to literary or informational sources, drawing evidence from the text to support analysis and reflection as well as to describe what they have learned.
  - a. Apply *grades 9–10 reading standards* to literature (e.g., "Analyze a wide range of nineteenth- and early-twentieth-century foundational works of American literature, comparing and contrasting approaches to similar ideas or themes in two or more texts from the same period.").
  - b. Apply *grades 9–10 reading standards* to literary nonfiction (e.g., "Assess the truth of an argument's explicit and implicit premises by determining whether the evidence presented in the text justifies the conclusions").

#### Range of Writing

**10.** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

Write in response to literary or informational sources, drawing evidence from the text to support analysis and reflection as well as to describe what they have learned.

Grades 11-12 students:

- a. Apply grades 11–12 reading standards to literature (e.g., "Analyze how an author draws on and transforms fictional source material, such as how Shakespeare draws on a story from Ovid, or a later author draws on Shakespeare").
- b. Apply *grades 11–12 reading standards* to literary nonfiction (e.g., "Evaluate the reasoning and rhetoric that support an argument or explanation, including assessing the relevance and sufficiency of evidence and identifying false statements or fallacious reasoning").
- **10.** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

## College and Career Readiness Standards for Speaking and Listening

The grades 6–12 standards on the following pages define what students should understand and be able to do in each grade and build toward the six College and Career Readiness Standards.

#### Comprehension and Collaboration

- 1. Participate effectively in a range of interactions (one-on-one and in groups), exchanging information to advance a discussion and to build on the input of others.
- 2. Integrate and evaluate information from multiple oral, visual, or multimodal sources in order to answer questions, solve problems, or build knowledge.
- 3. Evaluate the speaker's point of view, reasoning, and use of evidence and rhetoric.

#### Presentation of Knowledge and Ideas

- **4.** Present information, evidence, and reasoning in a clear and well-structured way appropriate to purpose and audience.
- **5.** Make strategic use of digital media and visual displays of data to express information and enhance understanding.
- **6.** Adapt speech to a variety of contexts and communicative tasks, demonstrating a command of formal English when indicated or appropriate.

#### Note on range and content of student speaking and listening

To become college and career ready, students must have ample opportunities to take part in a variety of rich, structured conversationswhole class, small group, and with a partnerbuilt around important content in various domains. They must be able to contribute appropriately to these conversations, to make comparisons and contrasts, and to analyze and synthesize a multitude of ideas in accordance with the standards of evidence appropriate to a particular discipline. Whatever their intended major or profession, high school graduates will depend heavily on their ability to listen attentively to others so that they are able to build on others' meritorious ideas while expressing their own clearly and persuasively.

New technologies have broadened and expanded the role that speaking and listening play in acquiring and sharing knowledge and have tightened their link to other forms of communication. The Internet has accelerated the speed at which connections between speaking, listening, reading, and writing can be made, requiring that students be ready to use these modalities nearly simultaneously. Technology itself is changing quickly, creating a new urgency for students to be adaptable in response to change.

## Speaking and Listening Standards 6–12

Following are the standards for grades 6–12, which relate to their College and Career Readiness counterparts by number. They offer a focus for instruction in each year to help ensure that students gain adequate exposure to a range of skills and applications.

Grade 6 students:		Grade 7 students:			Grade 8 students:		
Со	mprehension and Collaboration						
1.	<ul> <li>Initiate and engage actively in group discussions on grade 6 topics, texts, and issues being studied in class.</li> <li>a. Prepare for discussions by completing reading or conducting research and explicitly draw on that material in discussions.</li> <li>b. Cooperate with peers to set clear goals and deadlines.</li> <li>c. Build on the ideas of others by asking relevant questions and contributing appropriate and essential information.</li> <li>d. Review the key ideas expressed and extend their own thinking in light of new information learned.</li> </ul>	1.	<ol> <li>Initiate and engage actively in group discussions on grade 7 topics, texts, and issues being studied in class.         <ul> <li>a. Prepare for discussions by completing reading or conducting research and explicitly draw on that material in discussions.</li> <li>b. Cooperate with peers to set clear goals and deadlines.</li> <li>c. Advance a discussion by asking questions, responding precisely, and sharing factual knowledge and observations.</li> <li>d. Ensure a hearing for the range of positions on an issue.</li> <li>e. Take the views of others into account and, when warranted, modify their own views in light of the evidence presented</li> </ul> </li> </ol>		<ul> <li>Initiate and engage actively in group discussions on grade 8 topics, texts, and issues being studied in class.</li> <li>a. Prepare for discussions by completing reading or conducting research and explicitly draw on that material in discussions.</li> <li>b. Cooperate with peers to set clear goals and deadlines.</li> <li>c. Advance a discussion by asking questions, responding precisely, and sharing factual knowledge and observations supported by credible evidence.</li> <li>d. Ensure a hearing for the range of positions on an issue.</li> <li>e. Qualify or justify, when warranted, their own thinking after listening to others' questions or accounts of the evidence.</li> </ul>		
2.	<ul> <li>2. Determine the main ideas and supporting elements presented in oral, visual, or multimodal formats and explain how the information clarifies and ontributes to a topic or issue under study.</li> <li>2. Determine the main ideas and supporting elements presented in oral, visual, or multimodal formats and explain how the information clarifies and contributes to a nunderstanding of a topic or issue under study.</li> </ul>		2.	Determine the purpose of and perspectives represented in oral, visual, or multimodal formats and evaluate whether the information is laden with social, commercial, or political motives.			
<ol> <li>Delineate the claims made by a speaker or presenter and detail what evidence supports which claims.</li> </ol>		3.	• Evaluate a speaker's or presenter's reasoning and claims as well as the degree to which each claim is logically supported by the evidence provided.		Assess the truth of a speaker's or presenter's premises and the validity of his or her conclusions.		
Pre	esentation of Knowledge and Ideas						
4.	Present information, emphasizing salient points with pertinent descriptions and details and using appropriate eye contact, adequate volume, and clear pronunciation.	4.	Present claims and findings with relevant and specific descriptions, facts, and examples, and use appropriate eye contact, adequate volume, and clear pronunciation.	4.	Present claims and findings with relevant evidence that is accessible and verifiable to listeners, and use appropriate eye contact, adequate volume, and clear pronunciation.		
5.	Incorporate digital media and visual displays of data when helpful and in a manner that strengthens the presentation.	5.	Incorporate digital media and visual displays of data when helpful and in a manner that strengthens the presentation.	5.	Incorporate digital media and visual displays of data when helpful and in a manner that strengthens the presentation.		
6.	Adapt speech to a variety of contexts and communicative tasks, demonstrating a command of formal English when indicated or appropriate. (See "Conventions" in Language, on pages 47–50, for specific demands.)	6.	Adapt speech to a variety of contexts and communicative tasks, demonstrating a command of formal English when indicated or appropriate. (See "Conventions" in Language, pages 47–50, for specific demands.)	6.	Adapt speech to a variety of contexts and communicative tasks, demonstrating a command of formal English when indicated or appropriate. (See "Conventions" in Language, pages 47–50, for specific demands.)		

## Speaking and Listening Standards 6–12

	Grades 9–10 students:	Grades 11–12 students:					
Со	mprehension and Collaboration						
1.	<ul> <li>Initiate and participate effectively in group discussions on grades 9–10 topics, texts, and issues being studied in class.</li> <li>a. Prepare for discussions by reading and researching material under study and explicitly draw on that preparation in discussions.</li> <li>b. Cooperate with peers to set clear goals and deadlines and to establish roles.</li> <li>c. Build on essential information from others' input by asking questions and sharing comments that enrich discussions.</li> <li>d. Acknowledge the ideas and contributions of others in the group, reach decisions about the information and ideas under discussion, and complete the task.</li> <li>e. Evaluate whether the team has met its goals.</li> </ul>	1.	<ul> <li>Initiate and participate effectively in group discussions on grades 11–12 topics, texts, and issues being studied in class.</li> <li>a. Prepare for discussions by distilling the evidence or information about the material under study and explicitly draw on that preparation in discussions.</li> <li>b. Cooperate with peers to set clear goals and deadlines, establish roles, and determine ground rules for decision making (e.g., informal consensus, taking votes on key issues, presentation of alternate views).</li> <li>c. Propel conversations forward by asking questions that test the evidence and by sharing findings that clarify, verify, or challenge ideas and conclusions.</li> <li>d. Summarize accurately the comments and claims made on all sides of an issue and determine what additional information, research, and tasks are required for the team to complete the task.</li> <li>e. Evaluate whether the team has met its goals.</li> </ul>				
2.	Synthesize information presented visually or multimodally with other information presented orally, noting any discrepancies between the data that emerge as a result.	2.	Integrate multiple streams of data presented through various mediums, evaluating the reliability and credibility of each source of information in order to answer questions, solve problems, or build knowledge.				
3.	Determine a speaker's or presenter's position or point of view by assessing the evidence, word choice, points of emphasis, and tone used.	3.	Evaluate the information conveyed and rhetoric used by a speaker or presenter, identifying logical errors in reasoning and exaggerated or distorted evidence.				
Pre	esentation of Knowledge and Ideas						
4.	Plan and deliver relevant and sufficient evidence in support of findings and claims such that listeners can follow the reasoning, adjusting presentation to particular audiences and purposes.	4.	Plan and deliver focused and coherent presentations that convey clear and distinct perspectives such that the line of reasoning and sources of support are clear and alternative perspectives are addressed, adjusting presentation to particular audiences and purposes.				
5.	Make strategic use of digital media elements and visual displays of data to enhance understanding.	5.	Make strategic use of digital media elements and visual displays of data to enhance understanding.				
6.	Adapt speech to a variety of contexts and communicative tasks, demonstrating a command of formal English when indicated or appropriate. (See "Conventions" in Language, pages 47–50, for specific demands.)	6.	Adapt speech to a variety of contexts and communicative tasks, demonstrating a command of formal English when indicated or appropriate. (See "Conventions" in Language, pages 47–50, for specific demands.)				

## College and Career Readiness Standards for Language

The grades 6–12 standards on the following pages define what students should understand and be able to do in each grade and build toward the six College and Career Readiness Standards.

#### Conventions in Writing and Speaking

- 1. Demonstrate a command of the conventions of standard English grammar and usage.
- 2. Demonstrate a command of the conventions of capitalization, punctuation, and spelling.
- 3. Make effective choices about language, punctuation, and sentence structure for meaning and style.

#### Vocabulary Acquisition and Use

- 4. Determine the meaning of words and phrases encountered through conversations, reading, and media use.
- 5. Understand the nuances of and relationships among words.
- **6.** Use grade-appropriate general academic vocabulary and domain-specific words and phrases purposefully acquired as well as gained through conversation and reading and responding to texts.

# Note on range and content of student language use

To be college and career ready in language, students must have firm control over the conventions of writing and speaking and have extensive vocabularies built through reading and study. They must have a well-developed understanding of standard written and spoken English, demonstrating command of the conventions of grammar, usage, and mechanics. They also must come to appreciate that language is as much a matter of craft as of rules and be able to use punctuation, words, phrases, clauses, and sentences to achieve particular rhetorical effects and to convey ideas precisely and concisely. They need to become highly skilled in determining the meanings of words they encounter, choosing flexibly from an array of strategies to aid them. They must learn to see an individual word as part of a network of other words-words, for example, that have similar denotations but different connotations. The inclusion of Language standards in their own strand should not be taken as an indication that skills related to conventions and vocabulary are unimportant to reading, writing, speaking, and listening; indeed, they are inseparable from such contexts.

## Language Standards 6–12

Following are the standards for grades 6–12, which relate to their College and Career Readiness counterparts by number. They offer a focus for instruction in each year to help ensure that students gain adequate exposure to a range of skills and applications.

Grade 6 students:		Grade 7 students:			Grade 8 students:
Сс	nventions in Writing and Speaking				
1.	<ul> <li>Observe conventions of grammar and usage.</li> <li>a. Ensure that pronouns are in the proper case (subjective, objective, possessive).</li> <li>b. Recognize and correct inappropriate shifts in pronoun number and person.*</li> <li>c. Recognize and correct vague pronouns (i.e., ones with unclear or ambiguous antecedents).*</li> </ul>	1.	<ul> <li>Observe conventions of grammar and usage.</li> <li>a. Explain the function of phrases and clauses in general and their functions in specific sentences.</li> <li>b. Chose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.</li> <li>c. Place phrases and clauses within a sentence, avoiding misplaced and dangling modifiers.*</li> </ul>	1.	<ul> <li>Observe conventions of grammar and usage.</li> <li>a. Form and use verbs in the active and passive voice.</li> <li>b. Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive moods.</li> <li>c. Recognize and correct inappropriate shifts in verb voice and mood.*</li> </ul>
2.	<ul><li>Observe conventions of capitalization, punctuation, and spelling.</li><li>a. Use commas, parentheses, or dashes to set off nonrestrictive/parenthetical elements.*</li><li>b. Spell correctly.</li></ul>	2.	<ul><li>Observe conventions of capitalization, punctuation, and spelling.</li><li>a. Use a comma before a coordinating conjunction in a compound sentence.</li><li>b. Spell correctly.</li></ul>	2.	<ul> <li>Observe conventions of capitalization, punctuation, and spelling.</li> <li>a. Use a comma to separate coordinate adjectives (e.g., <i>It was a fascinating, enjoyable movie</i> but not <i>He wore an old[,] green shirt</i>).</li> <li>b. Use a comma, ellipses, or dash to indicate a pause or break.</li> <li>c. Spell correctly.</li> </ul>
3.	<ul> <li>Make effective language choices.</li> <li>a. Vary sentence patterns for meaning, reader/listener interest, and style.*</li> </ul>	3.	<ul> <li>Make effective language choices.</li> <li>a. Choose words and phrases that express ideas concisely, eliminating wordiness and redundancy.*</li> </ul>	3.	<ul> <li>Make effective language choices.</li> <li>a. Use verbs in the active and passive voice and in the conditional and subjunctive moods to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact).</li> </ul>

\* Conventions standards noted with an asterisk need to be revisited by students in subsequent grades. See page 51 for a complete listing.

## Language Standards 6–12

Grade 6 students:			Grade 7 students:		Grade 8 students:		
Vo	cabulary Acquisition and Use						
4.	<ul> <li>Determine word meanings (based on grade 6 reading).</li> <li>a. Determine or clarify the meaning of unknown or multiple-meaning words through the use of one or more strategies, such as using semantic clues (e.g., sentence and paragraph context, the organizational pattern of the text); using syntactic clues (e.g., the word's position or function in the sentence); analyzing the word's sounds, spelling, and meaningful parts; and consulting reference materials, both print and digital.</li> <li>b. Use a known root as a clue to the meaning of an unknown word (e.g., audience, auditory, audible).</li> <li>c. Verify the preliminary determination of a word's meaning (e.g., by checking the inferred meaning in context or looking up the word in a dictionary).</li> <li>d. Interpret various figures of speech (e.g., personification) relevant to particular texts.</li> </ul>	4.	<ul> <li>Determine word meanings (based on grade 7 reading).</li> <li>a. Determine or clarify the meaning of unknown or multiple-meaning words through the use of one or more strategies, such as using semantic clues (e.g., sentence and paragraph context, the organizational pattern of the text); using syntactic clues (e.g., the word's position or function in the sentence); analyzing the word's sounds, spelling, and meaningful parts; and consulting reference materials, both print and digital.</li> <li>b. Use a known root as a clue to the meaning of an unknown word (e.g., belligerent, bellicose, rebel).</li> <li>c. Verify the preliminary determination of a word's meaning (e.g., by checking the inferred meaning in context or looking up the word in a dictionary).</li> <li>d. Interpret various figures of speech (e.g., allegory) relevant to particular texts.</li> </ul>	4.	<ul> <li>Determine word meanings (based on grade 8 reading).</li> <li>a. Determine or clarify the meaning of unknown or multiple-meaning words through the use of one or more strategies, such as using semantic clues (e.g., sentence and paragraph context, the organizational pattern of the text); using syntactic clues (e.g., the word's position or function in the sentence); analyzing the word's sounds, spelling, and meaningful parts; and consulting reference materials, both print and digital.</li> <li>b. Use a known root as a clue to the meaning of an unknown word (e.g., precede, recede, secede).</li> <li>c. Verify the preliminary determination of a word's meaning (e.g., by checking the inferred meaning in context or looking up the word in a dictionary).</li> <li>d. Interpret various figures of speech (e.g. verbal irony, puns) relevant to particular texts.</li> </ul>		
5.	<ul><li>Understand word relationships.</li><li>a. Trace the network of uses and meanings that different words have and the interrelationships among those meanings and uses.</li><li>b. Distinguish a word from other words with similar denotations but different connotations.</li></ul>	5.	<ul> <li>Understand word relationships.</li> <li>a. Trace the network of uses and meanings different words have and the interrelationships among those meanings and uses.</li> <li>b. Distinguish a word from other words with similar denotations but different connotations.</li> </ul>	5.	<ul> <li>Understand word relationships.</li> <li>a. Trace the network of uses and meanings different words have and the interrelationships among those meanings and uses.</li> <li>b. Distinguish a word from other words with similar denotations but different connotations.</li> </ul>		
6.	Use grade-appropriate general academic vocabulary and English language arts–specific words and phrases taught directly and gained through reading and responding to texts.	6.	Use grade-appropriate general academic vocabulary and English language arts–specific words and phrases taught directly and gained through reading and responding to texts.	6.	Use grade-appropriate general academic vocabulary and English language arts–specific words and phrases taught directly and gained through reading and responding to texts.		

## Language Standards 6–12

	Grades 9–10 students:		Grades 11–12 students:
Cor	nventions in Writing and Speaking		
1.	<ul> <li>Observe conventions of grammar and usage.</li> <li>a. Use parallel structure in writing.*</li> <li>b. Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial) to add variety and interest to writing or presentations.</li> </ul>	1.	<ul> <li>Observe conventions of grammar and usage.</li> <li>a. Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested.</li> <li>b. Resolve complex usage issues, particularly when the issue involves contested or changing usage; consult references (e.g., <i>Merriam-Webster's Dictionary of English Usage</i>) as needed for guidance.</li> </ul>
2.	<ul> <li>Observe conventions of capitalization, punctuation, and spelling.</li> <li>a. Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses.</li> <li>b. Use a colon to introduce a list or quotation.</li> <li>c. Spell correctly.</li> </ul>	2.	<ul><li>Observe conventions of capitalization, punctuation, and spelling.</li><li>a. Observe the conventions concerning using hyphens to join words.</li><li>b. Spell correctly.</li></ul>
3.	<ul><li>Make effective language choices.</li><li>a. Write and edit work so that it conforms to the guidelines in a style manual.</li></ul>	3.	Make effective language choices. a. Write and edit work so that it conforms to the guidelines in a style manual.
Voc	abulary Acquisition and Use		
4.	<ul> <li>Determine word meanings (based on grades 9–10 reading).</li> <li>a. Determine or clarify the meaning of unknown or multiple-meaning words through the use of one or more strategies, such as using semantic clues (e.g., sentence, paragraph, and whole-text context; the organizational pattern of the text); using syntactic clues (e.g., the word's position or function in the sentence); analyzing the word's sounds, spelling, and meaningful parts; understanding the word's etymology; and consulting reference materials, both print and digital.</li> <li>b. Verify the preliminary determination of a word's meaning (e.g., by checking the inferred meaning in context or looking up the word in a dictionary).</li> <li>c. Interpret various figures of speech (e.g., hyperbole, paradox) and analyze their role in a text.</li> </ul>	4.	<ul> <li>Determine word meanings (based on grades 11–12 reading).</li> <li>a. Determine or clarify the meaning of unknown or multiple-meaning words through the use of one or more strategies, such as using semantic clues (e.g., sentence, paragraph, and whole-text context; the organizational pattern of the text); using syntactic clues (e.g., the word's position or function in the sentence); analyzing the word's sounds, spelling, and meaningful parts; understanding the word's etymology; and consulting reference materials, both print and digital.</li> <li>b. Verify the preliminary determination of a word's meaning (e.g., by checking the inferred meaning in context or looking up the word in a dictionary).</li> <li>c. Interpret various figures of speech (e.g., satire, sarcasm) and analyze their role in a text.</li> </ul>
5.	<ul><li>Understand word relationships.</li><li>a. Trace the network of uses and meanings different words have and the interrelationships among those meanings and uses.</li><li>b. Distinguish a word from other words with similar denotations but different connotations.</li></ul>	5.	<ul><li>Understand word relationships.</li><li>a. Trace the network of uses and meanings different words have and the interrelationships among those meanings and uses.</li><li>b. Distinguish a word from other words with similar denotations but different connotations.</li></ul>
6.	Use grade-appropriate general academic vocabulary and English language arts–specific words and phrases taught directly and gained through reading and responding to texts.	6.	Use grade-appropriate general academic vocabulary and English language arts—specific words and phrases taught directly and gained through reading and responding to texts.

\* Conventions standards noted with an asterisk need to be revisited by students in subsequent grades as their writing and speak grow in sophistication. See page 51 for a complete listing.

## English Language Arts Conventions Progressive Skills, By Standard

The following, marked with an asterisk (\*) in the Conventions standards, are skills and understandings that require continued attention in higher grades (after their introduction in the grade listed below) as they are applied to increasingly sophisticated writing and speaking.

Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grades 9–10			
<b>1c.</b> Ensure subject-ve	erb and pronoun-anteceden	t agreement.							
3a. Choose words for	effect.								
	1b. Form and use adjectives and adverbs (including comparative and superlative forms), placing them appropriately within sentences.								
	1c. Produce complete sentences, avoiding rhetorically poor fragments and run-ons.								
	1d. Correctly use frequently confused words (e.g., effect/affect, to/too/two).								
	<b>3a.</b> Use punctuation for effect.								
	<b>3b.</b> Maintain consistency in style and tone.								
	<b>3c.</b> Choose words and phrases to convey ideas precisely.								
		1b. Recognize and corre	ect inappropriate shifts in verb	o tense and aspect.					
		2a. Use punctuation to	separate items in a series.						
		<b>3a.</b> Expand, combine, a	nd reduce sentences for mean	ing, reader/listener interest,	and style.				
	<b>1b.</b> Recognize and correct inappropriate shifts in pronoun number and person.								
			<b>1c.</b> Recognize and correct v	ague pronouns (i.e., ones wit	h unclear or ambiguous antec	edents).			
			2a. Use commas, parenthese	es, or dashes to set off nonres	trictive/parenthetical elemen	ts.			
	<b>3a.</b> Vary sentence patterns for meaning, reader/listener interest, and style.								
				<b>1c.</b> Place phrases and cla modifiers.	uses within a sentence, avoidin	ng misplaced and dangling			
				<b>3b.</b> Choose words and pl redundancy.	arases that express ideas conci	sely, eliminating wordiness and			
					<b>1c.</b> Recognize and correct and mood.	inappropriate shifts in verb voice			
						<b>1a.</b> Use parallel structure in writing.			

## Range of Text Types for 6–12

Students in grades 6–12 apply the Reading standards to the following range of text types, with texts selected from a broad range of cultures and periods.

	Literature	Informational Text		
Stories	Drama	Poetry	Literary Nonfiction	
Includes the subgenres of adventure stories, historical fiction, mysteries, myths, science fiction,	Includes one-act and multiact plays, both in	Includes the subgenres of narrative poems, lyrical poems, free verse	Includes the subgenres of exposition and argument in the form of personal essays, speeches, opinion pieces, essays about art or literature, biographies,	
realistic fiction, allegories, parodies, satire, and graphic novels	written form and on film	poems, sonnets, odes, ballads, and enics	memoirs, journalism, and historical, scientific, or economic accounts (including digital media sources) written for a broad audience	

## Texts Illustrating the Complexity, Quality, and Range of Student Reading 6–12

	Literature: Stories, Drama, Poetry	Informational Texts: Literary Nonfiction
	<ul> <li>Little Women by Louisa May Alcott (1869)</li> <li>The Adventures of Tom Sawyer by Mark Twain (1876)</li> <li>"The Road Not Taken" by Robert Frost (1915)</li> <li>The Dark Is Rising by Susan Cooper (1973)</li> <li>Dragonwings by Laurence Yep (1975)</li> <li>Roll of Thunder, Hear My Cry by Mildred Taylor (1976)</li> </ul>	<ul> <li>"Letter on Thomas Jefferson" by John Adams (1776)</li> <li>Narrative of the Life of Frederick Douglass, an American Slave by Frederick Douglass (1845)</li> <li>Harriet Tubman: Conductor on the Underground Railroad by Ann Petry (1955)</li> <li>Travels with Charley: In Search of America by John Steinbeck (1962)</li> <li>The Great Fire by Jim Murphy (1995)</li> <li>This Land Was Made for You and Me: The Life and Songs of Woody Guthrie by Elizabeth Partridge (2002)</li> </ul>
9–10	<ul> <li>The Tragedy of Romeo and Juliet by William Shakespeare (1592)</li> <li>"Ozymandias" by Percy Bysshe Shelley (1817)</li> <li>"The Raven" by Edgar Allen Poe (1845)</li> <li>"The Gift of the Magi" by O. Henry (1906)</li> <li>The Grapes of Wrath by John Steinbeck (1939)</li> <li>Fahrenheit 451 by Ray Bradbury (1953)</li> <li>The Killer Angels by Michael Shaara (1975)</li> </ul>	<ul> <li>"Speech to the Second Virginia Convention" by Patrick Henry (1775)</li> <li>The Declaration of Independence by Thomas Jefferson (1776)</li> <li>"Second Inaugural Address" by Abraham Lincoln (1865)</li> <li>"State of the Union Address" by Franklin Delano Roosevelt (1941)</li> <li>Cod: A Biography of the Fish That Changed the World by Mark Kurlansky (1997)</li> <li>The Race to Save Lord God Bird by Phillip Hoose (2004)</li> </ul>
11–CCR	<ul> <li>"Ode on a Grecian Urn" by John Keats (1820)</li> <li>Jane Eyre by Charlotte Brontë (1848)</li> <li>"Because I Could Not Stop for Death" by Emily Dickinson (1890)</li> <li>The Great Gatsby by F. Scott Fitzgerald (1925)</li> <li>Their Eyes Were Watching God by Zora Neale Hurston (1937)</li> <li>A Raisin in the Sun by Lorraine Hansberry (1959)</li> <li>The Namesake by Jhumpa Lahiri (2003)</li> </ul>	<ul> <li>The Crisis by Thomas Paine (1776)</li> <li>Walden by Henry David Thoreau (1854)</li> <li>"Society and Solitude" by Ralph Waldo Emerson (1857)</li> <li>"Gettysburg Address" by Abraham Lincoln (1863)</li> <li>"Letter from Birmingham Jail" by Martin Luther King, Jr. (1964)</li> <li>Google Hacks: Tips &amp; Tools for Smarter Searching by Tara Calishain and Rael Dornfest (2004)</li> <li>America's Constitution: A Biography by Akhil Reed Amar (2005)</li> </ul>

Note: Given space limitations, the illustrative texts listed above are meant only to show individual titles that are representative of a range of topics and genres. (See Appendix B for excerpts of these and other texts illustrative of grades 6–12 text complexity.) At a curricular or instructional level, within and across grade levels, texts need to be selected around topics or themes that generate knowledge and allow students to study topics in depth.
## Standards for Literacy in History/Social Studies & Science

6-12

TAB 6c Page 67

#### College and Career Readiness Standards for Reading

The grades 6-12 standards on the following pages define what students need to know and be able to do and build toward the ten College and Career Readiness Standards.

#### Key Ideas and Details

- 1. Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
- **2.** Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
- **3.** Analyze in detail where, when, why, and how events, ideas, and characters develop and interact over the course of a text.

#### Craft and Structure

- 4. Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and explain how specific word choices shape meaning or tone.
- **5.** Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section or chapter) relate to each other and the whole.
- 6. Assess how point of view or purpose shapes the content and style of a text.

#### Integration of Knowledge and Ideas

- **7.** Synthesize and apply information presented in diverse ways (e.g., through words, images, graphs, and video) in print and digital sources in order to answer questions, solve problems, or compare modes of presentation.<sup>1</sup>
- **8.** Delineate and evaluate the reasoning and rhetoric within a text, including assessing whether the evidence provided is relevant and sufficient to support the text's claims.
- **9.** Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.

#### Range and Level of Text Complexity

**10.** Read complex texts independently, proficiently, and fluently, sustaining concentration, monitoring comprehension, and, when useful, rereading.<sup>2</sup>

<sup>1</sup>Please see "Research to Build Knowledge" in Writing for additional standards relevant to gathering, assessing, and applying information from print and digital sources.

<sup>2</sup>Proficiency in this standard is measured by students' ability to read a range of appropriately complex text in each grade as defined in Appendix A.

## Note on range and content of student reading

Reading is critical to building knowledge in history/social studies as well as in science and other technical fields. College- and careerready reading in these fields requires an appreciation of the norms and conventions of each discipline, such as the kinds of evidence used in history and science; an understanding of domain-specific words and phrases; an attention to precise details; and the capacity to evaluate intricate arguments, synthesize complex information, and follow detailed descriptions of events and concepts. In history/social studies, for example, students need to be able to analyze, evaluate, and differentiate primary and secondary sources. When reading scientific and technical texts, students need to be able to gain knowledge from challenging texts that often make extensive use of elaborate diagrams and data to convey information and illustrate concepts. Students must be able to read complex informational text in these fields with independence and confidence because the vast majority of reading in college and workforce training programs will be sophisticated nonfiction. It is important to note that these Reading standards are meant to complement the specific content demands of the disciplines, not replace them.

#### Reading Standards for History/Social Studies 6–12

Following are the standards for grades 6–12, which relate to their College and Career Readiness counterparts by number. The standards below begin at grade 6; standards for K–5 reading in history/social studies are integrated into the K–5 standards for reading informational text.

Grades 6–8 s	tudents:		Grades 9–10 students:		Grades 11–12 students:
Key Ideas and Details					
<ol> <li>Cite specific textual evidence primary and secondary source</li> <li>Determine the main ideas or secondary source; summarize summary on information in t knowledge or opinions.</li> <li>Identify key steps in a text's or related to history/social stud law, how interest rates are rate</li> </ol>	to support analysis of es. information of a primary or the source, basing the ne text rather than on prior description of a process ises (e.g., how a bill becomes ised or lowered).	1. 2. 3.	Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information. Determine the main ideas or information of a primary or secondary source; summarize how key events or ideas develop over the course of the text. Analyze in detail a series of events described in a text and the causes that link the events; distinguish whether earlier events caused later ones or simply preceded them.	1. 2. 3.	Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole. Determine the main ideas or information of a primary or secondary source; provide a summary that makes clear the relationships between the key details and ideas. Analyze how ideas and beliefs emerge, develop, and influence events, based on evidence in the text .
Craft and Structure					
<ol> <li>Determine the meaning of w including vocabulary specific history/social studies.</li> <li>Identify how a history/social information (e.g., sequential)</li> <li>Identify aspects of a text that view or purpose (e.g., loaded avoidance of particular facts)</li> </ol>	ords and phrases in a text, to domains related to studies text presents y, comparatively, causally). reveal an author's point of I language, inclusion or	<ol> <li>4.</li> <li>5.</li> <li>6.</li> </ol>	Determine the meaning of words and phrases in a text, including the vocabulary describing political, economic, or social aspects of history. Explain how an author chooses to structure information or an explanation in a text to emphasize key points or advance a point of view. Compare the point of view of two or more authors by comparing how they treat the same or similar historical topics, including which details they include and emphasize in their respective accounts.	4. 5. 6.	Interpret the meaning of words and phrases in a text, including how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines <i>faction</i> in Federalist No. 10 and No. 51). Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole. Evaluate authors' differing points of view on the same historical event or issue by assessing the authors' claims, evidence, and reasoning.
Integration of Knowledge and I	deas				
<ol> <li>Integrate graphical information maps, time lines) with other digital text.</li> <li>Distinguish among fact, opining a historical account.</li> <li>Analyze the relationship betwee source on the same topic.</li> </ol>	on (e.g., pictures, videos, information in a print or on, and reasoned judgment in een a primary and secondary	<ol> <li>7.</li> <li>8.</li> <li>9.</li> </ol>	Integrate quantitative or technical information presented in maps, time lines, and videos with other information in a print or digital text. Assess the extent to which the evidence n a text supports the author's claims. Compare and contrast treatments of the same topic in several primary and secondary sources.	7. 8. 9.	Synthesize ideas and data presented graphically and determine their relationship to the rest of a print or digital text, noting discrepancies between the graphics and other information in the text. Evaluate an author's premises, claims, and evidence by corroborating or challenging them with other sources of information. Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.
Range and Level of Text Comp	exity				
<b>10.</b> Read informational text indep fluently in the grades 6–8 tex "stretch" texts with scaffoldin	endently, proficiently, and t complexity band; read g as needed.	10.	Read informational text independently, proficiently, and fluently in the grades 9–10 text complexity band; read "stretch" texts with scaffolding as needed.	10.	Read informational text independently, proficiently, and fluently in the grades 11–12 text complexity band; read "stretch" texts with scaffolding as needed.

### Reading Standards for Science 6–12

Following are the standards for grades 6–12, which relate to their College and Career Readiness counterparts by number. The standards below begin at grade 6; standards for K–5 reading in science are integrated into the K–5 standards for reading informational text.

	Grades 6–8 students:		Grades 9–10 students:		Grades 11–12 students:
Key	Ideas and Details				
1. 2. 3.	Cite specific textual evidence to support analysis of scientific and technical texts. Summarize the broad ideas and specific conclusions made in a text, basing the summary on textual information rather than on prior knowledge or opinions. Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.	1. 2. 3.	Cite specific textual evidence to support analysis of scientific and technical text, including analysis of the precise details of explanations or descriptions. Analyze the development of a text's explanation of a process or phenomenon, summarizing the central ideas and supporting details. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.	1. 2. 3.	Cite specific textual evidence to support analysis of scientific and technical texts, including analysis of important distinctions the author makes between ideas or pieces of information. Summarize complex information or ideas presented in a text, paraphrasing it in simpler but still accurate terms. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the causes of the specific results based on information from the text.
Cra	ft and Structure				
4. 5.	Determine the meaning of key terms, symbols, and domain-specific vocabulary used in a text. Analyze how each major part of a text contributes to an understanding of the topic discussed in the text.	4.	Determine the meaning of key terms, symbols, and domain-specific vocabulary used in a text, noting relationships among terms pertaining to important ideas or processes (e.g., <i>force</i> , <i>friction</i> , <i>reaction force</i> , <i>energy</i> ).	4.	Determine the meaning of key terms, symbols, and domain-specific vocabulary used in a text, attending to the precise meaning of terms as they are used in particular scientific or technical contexts.
6.	Analyze the purpose of an experiment or explanation in a text, including defining the problem or question to be resolved.	5. 6.	Analyze the relationships among concepts in a text, including developing propositional concept maps to organize and illustrate the ideas. Analyze the purpose of an experiment, including defining	5. 6.	Analyze the hierarchical or categorical relationships of concepts or information presented in a text. Analyze the scope and purpose of an experiment or explanation and determine which related issues remain
late	gration of Knowladge and Ideas		the possibilities ruled out by the experimental results.		unresolved of uncertain.
	gration of Knowledge and Ideas	-		7	
7. 8. 9.	Integrate information provided by the words in a text with a version of that information expressed graphically (e.g., in a flowchart, diagram, model, graph, or table). Distinguish facts or reasoned judgments based on research findings from opinions. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.	7. 8. 9.	Integrate quantitative or technical information presented graphically (e.g., in a flowchart, diagram, model, graph, or table) with other information in a text. Assess the extent to which the evidence in a text supports a scientific claim or a recommendation for solving a technical problem. Compare experimental findings presented in a text to information from other sources, noting when the findings support or contradict previous explanations or accounts.	7. 8. 9.	Synthesize information in different formats by representing complex information in a text in graphical form (e.g., a table or chart) or translating a graphic or equation into words. Evaluate the hypotheses, data, and conclusions in a scientific text, corroborating or undercutting them with other sources of information. Integrate information from diverse sources (e.g., video, multimedia sources, experiments, simulations) into a coherent understanding of a concept, process, or phenomenon, noting discrepancies among sources.
Rar	nge and Level of Text Complexity				
10.	Read informational text independently, proficiently, and fluently in the grades 6–8 text complexity band; read "stretch" texts with scaffolding as needed.	10.	Read informational text independently, proficiently, and fluently in the grades 9–10 text complexity band; read "stretch" texts with scaffolding as needed.	10.	Read informational text independently, proficiently, and fluently in the grades 11–CCR text complexity band; read "stretch" texts with scaffolding as needed.

#### College and Career Readiness Standards for Writing

The grades 6–12 standards on the following pages define what students need to know and be able to do and build toward these ten College and Career Readiness Standards.

#### Text Types and Purposes<sup>1</sup>

- **1.** Write arguments to support a substantive claim with clear reasons and relevant and sufficient evidence.
- **2.** Write informative/explanatory texts to convey complex information clearly and accurately through purposeful selection and organization of content.
- **3**. Write narratives to convey real or imagined experiences, individuals, or events and how they develop over time.

#### Production and Distribution of Writing

- 4. Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience.
- 5. Strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
- 6. Use technology, including the Internet, to produce, publish, and interact with others about writing.

#### Research to Build Knowledge

- **7.** Perform short, focused research projects as well as more sustained research in response to a focused research question, demonstrating understanding of the material under investigation.
- **8.** Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate and cite the information while avoiding plagiarism.
- **9.** Write in response to literary or informational sources, drawing evidence from the text to support analysis and reflection as well as to describe what they have learned.

#### Range of Writing

**10.** Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.<sup>2</sup>

<sup>1</sup>These broad categories of writing include many subgenres. See Appendix A for definitions of key writing types. <sup>2</sup>This standard is measured by the proficiency of student writing products.

## Note on range and content of student writing

For students, writing is a key means of asserting and defending claims, showing what they know about a subject, and conveying what they have experienced, imagined, thought, and felt. To be collegeand career-ready writers, students must take task, purpose, and audience into careful consideration, choosing words, information, structures, and formats deliberately. They need to be able to use technology strategically when creating, refining, and collaborating on writing. They have to become adept at gathering information, evaluating sources, and citing material accurately, reporting findings from their research and analysis of sources in a clear and cogent manner. They must have the flexibility, concentration, and fluency to produce high-quality first-draft text under a tight deadline and the capacity to revisit and make improvements to a piece of writing over multiple drafts when circumstances encourage or require it. To meet these goals, students must devote significant time and effort to writing, producing numerous pieces over short and long time frames throughout the year.

### Writing Standards for History/Social Studies and Science 6–12

Following are the standards for grades 6–12, which relate to their College and Career Readiness counterparts by number. The standards below begin at grade 6; standards for K–5 writing in history/social studies and science are integrated into the K–5 standards for writing.

	Grades 6–8 students:		Grades 9–10 students:		Grades 11–12 students:
Tex	t Types and Purposes				
1.	<ul> <li>Write arguments focused on <i>discipline-specific content</i> in which they:</li> <li>a. Introduce a claim about a topic or issue, distinguish it from alternate or opposing claims, and organize the reasons, data, and evidence logically to support the claim.</li> <li>b. Support the claim with logical reasoning and detailed,</li> </ul>	1.	<ul> <li>Write arguments focused on <i>discipline-specific content</i> in which they:</li> <li>a. Introduce a precise claim, distinguish it from alternate or opposing claims, and provide an organization that establishes clear relationships among the claim, reasons, data, and evidence.</li> <li>b. Develop a claim fairly with logical reasoning,</li> </ul>	1.	<ul> <li>Write arguments focused on <i>discipline-specific content</i> in which they:</li> <li>a. Introduce a substantive claim, establish its significance, distinguish it from alternate or opposing claims, and create an organization so that claims, reasons, data, and evidence are purposefully and logically sequenced.</li> </ul>
	<ul> <li>accurate data and evidence (science) or information from credible primary, secondary, and tertiary sources (history).</li> <li>c. Use words and phrases as well as domain-specific vocabulary to make clear the relationships among claims, reasons, data, and evidence.</li> </ul>		<ul><li>supplying detailed, accurate data and evidence acquired in a scientifically acceptable form (science) or gathered from credible primary, secondary, and tertiary sources (history).</li><li>c. Use precise words and phrases as well as domain- specific vocabulary to make clear the relationships</li></ul>		<ul> <li>b. Develop a claim thoroughly and fairly with logical reasoning, supplying the most relevant data and evidence acquired in a scientifically acceptable form (science) or gathered from credible primary, secondary, and tertiary sources (history).</li> <li>c. Use precise words and phrases as well as domain-</li> </ul>
	d. Sustain an objective style and tone.		between claims and reasons and between reasons and		specific vocabulary to make clear the relationships
	e. Provide a concluding statement or section that follows		the data and evidence.		between claims and reasons and between reasons and
	logically from the argument.		<ul><li>d. Sustain an objective style and tone while attending to the norms and conventions of the specific discipline.</li><li>e. Provide a concluding statement or section that follows logically from the argument.</li></ul>		<ul><li>the data and evidence.</li><li>d. Sustain an objective style and tone while attending to the norms and conventions of the specific discipline.</li><li>e. Provide a concluding statement or section that follows logically from the argument.</li></ul>

### Writing Standards for History/Social Studies and Science 6–12

	Creadas ( 9 -tr-d-retai		Credos 9, 10 -t Jantas		Credos 11, 12 studentes
-	Grades o-o students:		Grades 7-10 students:		Grades 11-12 students:
<i>Τϵ</i> 2.	<ul> <li>ext Types and Purposes (continued)</li> <li>Write informative/explanatory texts, including the narration of historical events or scientific procedures/experiments, in which they: <ul> <li>a. Introduce and establish a topic and organize information under concepts or into categories.</li> <li>b. Develop a topic that has historical or scientific significance using well-chosen, relevant facts, data, details, quotations, examples, or other information.</li> <li>c. Use varied links and sentence structures to create cohesion and clarify information and ideas.</li> </ul> </li> <li>d. Use precise language and domain-specific vocabulary and sustain a formal, objective style appropriate for a reader seeking information.</li> <li>e. Provide a conclusion that follows logically from the information or explanation presented.</li> </ul>	2.	<ul> <li>Write informative/explanatory texts, including the narration of historical events or scientific procedures/experiments, in which they:</li> <li>a. Introduce a topic and organize information under concepts and into categories, making clear the connections and distinctions between key ideas; use formatting and graphics (e.g., headings, figures, tables, graphs, illustrations) as useful to clarify ideas.</li> <li>b. Develop a topic that has historical or scientific significance using well-chosen, relevant, and sufficient facts, data, details, quotations, examples, extended definitions, or other information.</li> <li>c. Use varied transitions and sentence structures to create cohesion, clarify information and ideas, and link major sections in the text.</li> <li>d. Use precise language and domain-specific vocabulary to convey a style appropriate to the specific discipline and context as well as to the expertise of likely readers.</li> <li>e. Provide a conclusion that follows logically from the information or explanation provided and that articulates the implications or significance of the topic.</li> </ul>	2.	<ul> <li>Write informative/explanatory texts, including the narration of historical events or scientific procedures/experiments, in which they:</li> <li>a. Introduce a complex topic and organize the information so that each new piece of information builds on that which precedes it to create a unified whole; use formatting and graphics (e.g., headings, figures, tables, graphs, illustrations) as useful to clarify ideas.</li> <li>b. Develop a complex topic that has historical and scientific significance using the most significant and relevant facts, data, details, quotations, examples, extended definitions, or other information.</li> <li>c. Use varied transitional devices and sentence structures to create cohesion, clarify complex information and ideas, and link the major sections of the text.</li> <li>d. Use precise language, domain-specific and technical wording, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the specific discipline and context as well as to the expertise of likely readers.</li> <li>e. Provide a well-developed conclusion that follows logically from the information or explanation provided and that articulates the implications or significance of the specific discipline and context as well as to the expertise of likely readers.</li> </ul>
3.	Students' narrative skills continue to grow in these grades. The <i>Standards</i> require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In history, students must be able to write narrative accounts about individuals or events of historical import. In science, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations that others can replicate them and (possibly) reach the same results.	3.	Students' narrative skills continue to grow in these grades. The <i>Standards</i> require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In history, students must be able to write narrative accounts about individuals or events of historical import. In science, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations that others can replicate them and (possibly) reach the same results.	3.	Students' narrative skills continue to grow in these grades. The <i>Standards</i> require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In history, students must be able to write narrative accounts about individuals or events of historical import. In science, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations that others can replicate them and (possibly) reach the same results.

### Writing Standards for History/Social Studies and Science 6–12

	Grades 6–8 students:	Grades 9–10 students:	Grades 11–12 students:
Pro	oduction and Distribution of Writing		
4.	Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience.	<b>4.</b> Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience.	4. Produce writing in which the organization, development, substance, and style are appropriate to task, purpose, and audience.
5.	With some guidance and support from peers and adults, strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach after rethinking how	5. Strengthen writing as needed by planning, revising, editing, or trying a new approach, focusing on addressing what is most significant for a specific task and context.	5. Strengthen writing as needed by planning, revising, editing, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
	well questions of purpose and context have been addressed.	6. Use technology, including the Internet, to produce, publish, and collaborate on a shared writing product,	<b>6.</b> Demonstrate command of technology, including the Internet, to produce, publish, and update work in response
6.	Use technology, including the Internet, to present and cite information effectively in a digital format, including when publishing and responding to writing.	incorporating diverse and sometimes conflicting feedback.	to ongoing feedback, including fresh arguments or new information.
Re	search to Build Knowledge		
7.	Perform short, focused research projects in response to a question or problem and generate additional related questions that allow for multiple avenues of exploration.	7. Perform short, focused research projects and more sustained research; synthesize multiple sources on a subject to answer a question or solve a problem.	<b>7.</b> Perform short, focused research projects and more sustained research; synthesize multiple authoritative sources on a subject to answer a question or solve a
8.	Gather relevant information from multiple print and digital sources using effectively tailored searches; assess the credibility and accuracy of each source; and quote or paraphrase the evidence, avoiding plagiarism and following a standard format for citation.	8. Gather relevant information from multiple print and digital sources; assess the credibility, accuracy, and strengths and limitations of each source; and integrate selected information into the text, avoiding overreliance on any one source, avoiding plagiarism, and following a standard	<ul><li>problem.</li><li>8. Gather relevant information from multiple print and digital sources; assess its credibility and accuracy and its usefulness in terms of purpose, task, and audience; and integrate selected information into the text, avoiding overreliance on</li></ul>
9.	Write in response to informational sources, drawing on textual evidence to support analysis and reflection as well	format for citation. 9. Write in response to informational sources, drawing on	any one source, avoiding plagiarism, and following a standard format for citation.
	as to describe what they have learned.	textual evidence to support analysis and reflection as well as to describe what they have learned.	<b>9.</b> Write in response to informational sources, drawing on textual evidence to support analysis and reflection as well as to describe what they have learned.
Ra	nge of Writing		
10.	Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	<b>10.</b> Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	<b>10.</b> Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

#### SUBJECT

Proposed Change to IDAPA 08.02.02.018, Rules Governing Uniformity-Standard Elementary Certificate

#### APPLICABLE STATUTE, RULE, OR POLICY

Section 33-1258, Idaho Code

#### BACKGROUND/DISCUSSION

Since 2005, any educator teaching a middle school core content assignment must be designated as highly qualified according to No Child Left Behind, Title IX, Section 9101(23):

"The term 'highly qualified'-

(B) when used with respect to-

(ii) a middle or secondary school teacher who is new to the profession, means that the teacher holds at least a bachelor's degree and has demonstrated a high level of competency in each of the academic subjects in which the teacher teaches by-

(I) passing a rigorous State academic subject test in each of the academic subjects in which the teacher teaches (which may consist of a passing level of performance on a State-required certification or licensing test or tests in each of the academic subjects in which the teacher teaches); or

(II) successful completion, in each of the academic subjects in which the teacher teaches, of an academic major, a graduate degree, coursework equivalent to an undergraduate academic major, or advanced certification or credentialing; "

Currently, there is no requirement for a K-8 certified teacher to hold any type of endorsement or have content competency in another subject area outside of the Elementary core content. In most cases, this means that a K-8 certified teacher can only teach a self-contained elementary school class through 6<sup>th</sup> grade, which contradicts the purpose for Idaho continuing to support the K-8 certificate. Under the current federal requirements, holding only an elementary certificate does not give rural school districts the flexibility for which the K-8 certificate was designed.

Also, in hard to fill positions, there are often not enough 6th-12th grade certificated teachers to meet the needs of middles schools. Unfortunately, at this time K-8 certified teachers are not properly prepared to teach single subject classrooms. This change will assist districts in moving teachers between elementary and middle school as necessary by requiring an area of expertise

that can be used in the middle grades. It will also provide newly prepared teachers with more options and greater flexibility.

#### IMPACT

This proposed rule change may increase cost of pre-service preparation by up to one hundred (\$100.00) dollars per candidate to take an additional state-approved content competency assessment.

#### **ATTACHMENTS**

Attachment 1 – Proposed Change to IDAPA 08.02.02.018, Rules Governing Uniformity- Standard Elementary Certificate Page 3

#### STAFF COMMENTS AND RECOMMENDATIONS

#### **BOARD ACTION**

A motion to approve the proposed rule change to IDAPA 08.02.02.018, Rules Governing Uniformity –Standard Elementary Certificate.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No \_\_\_\_

#### IDAPA 08.02.02.018

#### 018. STANDARD ELEMENTARY CERTIFICATE.

A Standard Elementary Certificate makes an individual eligible to teach grades Kindergarten (K) through eight (8), and may be issued to any person who has a bachelor's degree from an accredited college or university and who meets the following requirements: (3-16-04)

**01. General Education Requirements**. Completion of the general education requirements at an accredited college or university is required. (3-30-07)

#### **02.** Professional Education Requirements. (3-30-07)

**a.** A minimum of twenty-four (24) semester credit hours, or thirty-six (36) quarter credit hours, in the philosophical, psychological, and methodological foundations and in the professional subject matter of elementary education, which shall include at least six (6) semester credit hours, or nine (9) quarter credit hours, in developmental reading and its application to the content area. (3-16-04)

**b.** At least six (6) semester credit hours, or nine (9) quarter credit hours, of elementary student teaching or two (2) years of satisfactory experience as a teacher in grades K-8. (3-16-04)

**03.** Additional Requirements. An institutional recommendation from an accredited college or university or verification of two (2) years of teaching experience in grades Kindergarten (K) through eight (8).

(3-16-04)

**04.** Ninth GradeArea of Endorsement. If anAll individuals withseeking a Standard Elementary Certificate shall completes the requirements for a subject area endorsement as outlined under requirements for a Standard Secondary Certificate, <u>aAn</u> endorsement allowing teaching of that subject through grade nine (9) or a K-12 endorsement <u>mayshall</u> be added to the Standard Elementary Certificate. <u>Individuals with Standard Elementary</u> Certificates issued prior to July 1, 2013 are not subject to this rule. (3 16 04)(\_\_\_\_)

**05. Proficiency**. Proficiency in areas noted above is measured by completion of the credit hour requirements provided herein. Additionally, each candidate shall meet or exceed the state qualifying score on approved elementary content area and pedagogy assessments. (3-16-04)

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#### SUBJECT

Appointment to the Professional Standards Commission

#### APPLICABLE STATUTE, RULE, OR POLICY

Section 33-1252, Idaho Code

#### **BACKGROUND/DISCUSSION**

Idaho Statute sets forth criteria for membership in the Professional Standards Commission, including four of the following representatives.

Nominations were sought for the position from the Idaho Education Association and Northwest Professional Educators. Resumes for interested individuals are attached. There was only one nominee for each of the categories being renominated.

Secondary Classroom Teacher: Esther Henry, Jefferson County Joint School District (renomination)

School Counselor:

Shelly Rose, Mountain Home School District (renomination)

Exceptional Child Education:

Kelly Leighton, Coeur d'Alene School District Colleen Broce, Pocatello School District

Secondary Classroom Teacher:

Pamela Danielson, Orofino Joint School District Jeff Rigg, Coeur d'Alene School District Dennis Smith, Post Falls School District Mikki Nuckols, Bonneville Joint School District

#### ATTACHMENTS

Attachment 1 – Resume for Esther Henry	Page 3
Attachment 2 – Resume for Shelly Rose	Page 7
Attachment 3 – Resume for Kelly Leighton	Page 15
Attachment 4 – Resume for Colleen Broce	Page 19
Attachment 5 – Resume for Pamela Danielson	Page 23
Attachment 6 – Resume for Jeff Rigg	Page 29
Attachment 7 – Resume for Dennis Smith	Page 35
Attachment 8 – Resume for Mikki Nuckols	Page 39

#### **BOARD ACTION**

A motion to approve \_\_\_\_\_\_ as a member of the Professional Standards Commission effective July 1, 2010 for a term of three years representing secondary classroom teachers.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No\_\_\_\_

A motion to approve \_\_\_\_\_\_ as a member of the Professional Standards Commission effective July 1, 2010 for a term of three years representing school counselors.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No\_\_\_\_

A motion to approve \_\_\_\_\_\_ as a member of the Professional Standards Commission effective July 1, 2010 for a term of three years representing exceptional child education.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No\_\_\_\_

A motion to approve \_\_\_\_\_\_ as a member of the Professional Standards Commission effective July 1, 2010 for a term of three years representing secondary classroom teachers.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No\_\_\_\_

Esther Kaye Henry

271 North 3900 East, Rigby, ID 83442 (208) 745-6783 ehenry@sd251.org Objective Become a member of the Idaho Professional Standards Commission			
Teaching/ Professional	English Teacher Rigby High School, Rigby, Idaho		1992 to Present
Experience	<ul> <li>Grades 10-12 remedial, regular, AP 6</li> <li>National Honor Society Advisor—9</li> <li>District English curriculum alignmer</li> <li>School Improvement Committee, ch</li> <li>AP Institute participant—6 years</li> <li>Senior class advisor—3 years</li> <li>District principal selection committee</li> <li>Textbook adoption committee data</li> <li>District Harmony Committee memb</li> <li>Mentor teacher—8 years</li> <li>English Dept. chair—4 years</li> <li>Cooperating teacher for student teacher</li> <li>Recognition/Awards:</li> <li>Jefferson County Teacher of the Yea</li> <li>Who's Who Among American Educa</li> <li>Marquis Who's Who Among America</li> </ul>	courses—15 years years it committee—7 years air—4 years e member—4 years ears tr—1998 er—7 years hers—5 years r, 2002 ators—1995, 1996, 1997, 2001, 2003 7 an Women, 2008	1985 - 1002
	English Teacher Springville High School, Springville, U	Jtah	1985 - 1992
Education	Master of Arts—Instruction and Tec Western Governors University, Salt Lake	<b>hnology</b> Cíty, Utah	2004
	National Board Certified Teacher-	Adolescent/Young Adult Language Arts	2001
	Bachelor of Arts—English Education Brigham Young University, Provo, Utah	n, Communications Minor	1985
References	Enclosed		

Ms. Esther Henry English Instructor, Rigby High School Rigby, ID 83442

**RE:** Letter of Recommendation

**Rigby High School** 

290 North 3800 East Rigby, Idaho 83442 Phone: (208) 745-7704 Fax: (208) 745-7707

February 13, 2008

It is a privilege to write a letter of recommendation for Ms. Esther Henry. She is an exceptional teacher and has the experience and knowledge needed to be a part of the Professional Standards Commission for the State of Idaho. I have complete trust in her work ethic and dedication to students in the field of education. I have observed her teaching, her interactions with students, and can attest of her professionalism.

Ms. Henry's experience is broad and diversified. Following high school graduation as valedictorian, Ms. Henry graduated from BYU-Provo with a BA degree in English and a minor in communications. She has been a teacher for over 22 ½ years. Seven (7) of those years were at Springville High School in Utah. She has taught for over fifteen (15) years here at Rigby High School, Jefferson County School District #251 in Rigby, Idaho.

In 2001 Ms. Henry added to her teaching credentials by becoming recognized as a National Board Certified Teacher. Three years later in 2004 she earned a MA degree in Instruction and Technology from Western Governor's University. She is named in several editions of Who's Who among American Educators, as well as the Marquis Who's Who of America.

In addition to being a building representative for the Jefferson County Education Association, she has also been on the negotiations and membership recruitment committees, and grievance committee. She has served as grievance chair, and has served on the district's Harmony Committee for seven (7) years. She has served the JCEA as vice president, president-elect, and association president. She has assisted staff members and support staff when they need to speak with building and district administration. For many years she has been elected by her peers to be an Idaho Education Association representative. On the floor she has spoken openly in support of issues affecting teachers, and she has also been involved in several IEA grassroots campaigns and initiatives. Such actions prove her commitment and dedication to students.

At RHS she has served several times as a mentor teacher, and has assisted as a cooperating teacher. She was chair of the 1998 school accreditation committee, and has been a department head for the English department. Her service includes numerous committees dealing with curriculum alignment, principal selection, textbook adoption, and senior graduation. For the past ten (10) years, she has spearheaded common end-of-course assessments for her department and has proofread district-sponsored grants that were eventually approved. She is an AP English teacher and has three (3) years experience teacher AP English.

Ms. Henry's experience is broad and extensive. Her classroom experiences coupled with her service to education qualify her for being considered for the Professional Standards Commission. Should you need more information concerning this excellent educator, please contact me.

Sincerely,

aux roll

Gary Comstock, Principal

## Rigby High School

290 North 3800 East Rigby, Idaho 83442 Phone: (208) 745-7704 – Fax: (208) 745-7707

To Whom It May Concern:

I am writing this letter of recommendation for Esther Henry who is an English teacher at Rigby High School. I have worked with Ms. Henry for seven years and know her to be an excellent teacher who is knowledgeable in her subject area. She has a Masters in Teaching with Technology and has attended AP workshops for both English Language and Literature. Ms. Henry has helped proofread district grants that were submitted and approved. Her knowledge extends into her experience. She has served as a mentor for new teachers, was the chair of the last school accreditation committee in 1998, has been head of the English department for four years, and has been on many district committees for curriculum alignment, principal selection, and textbook adoptions. She is considered a leader in our school and district.

Esther has been a teacher for almost 23 years. She has a reputation in the school as an outstanding teacher. Ms. Henry loves her job and that love translates into learning in her classroom. As a teacher she gives concise instruction so students know exactly what to do. She has exceptional classroom management; students like and respect Ms. Henry, and they enjoy learning in her classroom.

Ms. Henry's organization skills are supreme. Any job she is given is done, done well, and done on time. Her willingness to use her time to help both faculty members and students is invaluable. Her desire to help students succeed compels her to organize her lesson plans and keep grades current. She is genuinely concerned about each student and the progress they are making.

Intelligent and respected, Ms. Henry works well with the other faculty members. She represents the high school faculty on a district Harmony Committee and has also been a local IEA representative for the school. She has worked many after school hours on behalf of her fellow teachers as a representative or advisor. She is always willing to help or do any task necessary.

I can sincerely recommend Ms. Henry for the position on the Professional Standards Commission. If you have any questions about Ms. Henry, feel free to call me at 745-1077 after 4:00.

Sincerely,

Gail Taylor J English Department Chair

"Motivating students to improve their lives through education"

Suzanne K. Kenny 147 N. 4000 E. Rigby, Idaho 83442

February 18, 2008

Sherri Wood, President Idaho Education Association PO Box 2638 Boise, Idaho

President Wood,

I would like to recommend Ms. Esther Henry for the position that is available on the Idaho Standards Commission. I have known Ms. Henry for 14 years and we have worked together in a variety of circumstances and I feel that I know her well.

Ms. Henry is by far one of the most dedicated educators that I know. She is diligent as a professional educator and leader. She is National Board Certified, has her MA in instruction and technology and she has been included in several editions of Who's Who among American Educators. But more important than this, is that she is an incredible teacher. I have seen her teach and interact with her students in positive and interacting ways. I have talked to students that have had her as a teacher and they all have said that she is fair, kind, diligent and firm. She believes in public education and believes in her students.

I have worked with Ms. Henry through our local association, the Jefferson County Education Association. She has led this association through very difficult situations and I never saw her be anything but professional and strong. Her code of ethics guides her in all that she does and this was demonstrated in many tense situations. Her code of ethics guides her teaching and her relationship with her colleagues. She has guided new teachers and experienced teachers look to her for direction and expertise.

I find Ms. Henry to be fair but will also stand up for what is right for educators. She will be nothing but a strong advocate for educators and she will be an asset on the PSC. She will be a leader on the Commission and they will soon learn of her abilities and will value her professionalism and credibility.

Sincerely,

Juganne K. Kenny Suzanne K. Kenny Board of Directors

Board of Directors Idaho Education Association

**Rochelle** (Shelly) Rose 975 E 16th N Mountain Home, ID 83647 Telephone: (208) 587-2878

#### **OBJECTIVE:**

To be an Educational Leader- looking for a position that will allow me to use my abilities and training to their maximum potential for the betterment of children and adults.

#### VALUE OFFERED:

I have experience with: public relations, committees, supervision, schedules, deadlines, discipline, safe schools, state reports, testing, evaluation, developing Individual Education Plans, 504 Plans and behavior plans.

#### **EDUCATION:**

Administration Certified, Northwest Nazarene University, May 2000. Masters Degree in Education, College of Idaho, 1992. School and Community Counseling emphasis, College of Idaho, 1992. Idaho Standard Counseling Certificate K/12, 1992. Bachelor of Arts, Elementary Education, Boise State University, 1988. Special Education minor, Boise State University, 1998. Idaho Standard Elementary Certificate K/8, 1998. Idaho Exceptional Child Certificate Generalist and Severe Retardation, K/12, 1998.

#### **Employment History:**

Sixth and Seventh Grade Team Building Teacher - Tom August 2006 to Present W. Hacker Middle School Mountain Home, Idaho. Duties include creating curriculum, adapting and modifying materials, student education through small and large group instruction, discipline, record keeping, public relations with community, mentoring staff members, building level assignments .

August 2005 to May 2006

Head Teacher - Liberty Elementary School Mountain Home Air Force Base, Idaho. Duties include assisting principal in school-wide leadership, discipline of students, mentoring new staff members, public relations with community, and communication with district office and school personnel.

#### August 2005 to May 2006

Sixth and Fifth Grade Social Studies Teacher - Liberty Elementary Mountain Home Air Force Base, Idaho. Duties include student education through classroom, small group

	or individual instruction, assessing students' academic strengths/weaknesses, adapting and modifying materials, discipline, record keeping, public relations with community, building and district level committee assignments, and supervision of intern.
August 2002 to May 2005	
August 2002 to May 2002	Fourth Grade Teacher – Liberty Elementary School Mountain Home Air Force Base, Idaho. Duties include student education through classroom, small group or individual instruction, assessing students' academic strengths/weaknesses, adapting and modifying materials, discipline, record keeping, public relations with community, building and district level committee assignments, supervision of instructional assistant and university students.
August 1999 to June 2002	and the Courselos Liberty Elementary
and	School, Mountain Home Air Force Base, Idaho.
August 1994 to May 1998	Duties included student education through classroom, small group or individual instruction, parent education programs, teacher/staff education, crisis counseling and parent or staff consultations and developing behavior plans.
August 1999 to June 2000	<b>Principalship/Internship</b> – Liberty Elementary School Mountain Home Air Force Base, Idaho. Duties included classroom observation, teacher probation, discipline issues, state accreditation, book reviews, district level committees, community relations, fundraisers, school assemblies, budget issues and parent and staff concerns.
June 1998 to June 1999	Middle School Counselor – Tom W. Hacker Middle School, Mountain Home, Idaho. Duties included scheduling, report cards, record keeping, large and small group or individual instruction, teacher/staff education, crisis counseling, and parent or staff consultations.
March 1994 to 1999	<b>Drug and Alcohol Outreach Counselor</b> – Counseling Services of Mountain Home, Idaho. Duties included teaching adolescent and adult education through individual and group instruction, crisis counseling, parent consultations, and evaluation/test interpretation.

August 1988 to June 1994 Special Education Teacher – East Elementary, Mountain Home, Idaho. Duties included teaching students, assessing students' academic strengths/weaknesses, developing Individual Educational Plans, 504 Plans, parent contacts/meetings, record keeping, public relations with teachers and parents, supervision of instructional assistant and student teacher.

#### COMMITTEES:

Text Book Adoption – I review the needs of our students and help determine which text book best fits our students' learning needs.

Student Assistant Team – I helped students, parents and teachers develop a learning plan as part of the promotion/retention policy.

Safe School Response Team – It is my responsibility to check to if students are out of the building and determine if the building is safe to enter under certain circumstances.

Promotion Policy – I helped develop standards for students K - 8 to achieve to be considered for promotion to the next grade.

Attendance Policy – This committee developed standards for students K - 8 to be in compliance with Idaho State guidelines.

Crisis Management Procedures – This team reviewed the Mountain Home School District's procedures and made appropriate changes.

Care On Target Team – I was the liaison between the Mountain Home School District and the United States Air Force.

Drug Education and Safe Schools – The main goal of this committee is to educate our students on the negative effects of violence and drug use.

Mountain Home Education Association – I serve as the building representative. It is my responsibility to keep the membership informed about the changes happening in our district.

#### PROGRAMS:

Tom W. Hacker Food Drive -1 am the coordinator for this community service project. I work with El-Ada Food Bank and the Mountain Home Cheer Basket program.

Mentor Program – My responsibility is to facilitate this program for Liberty Elementary. This is a school-based program, which includes all students at base schools.

Adopt-A-Cop Program – This program is designed to pair security police officers with 4<sup>th</sup> grade classrooms.

Peers As Leaders – I co-founded this program at Tom W. Hacker Middle School. This program was designed to train  $6^{th}$  and  $7^{th}$  graders on effective leadership skills.

Drug Awareness – I served as chairperson for Red Ribbon Week and Enough Is Enough Programs. I work with various staff members to ensure that students are made aware of negative effects of illegal drug and alcohol use.

DARE – I served as the school contact for the DARE Officer. I helped with the scheduling of the program at Liberty Elementary.

# NATIONAL EDUCATION ASSOCIATION

Reg Weaver, President Dennis Van Roekel, Vice President Lily Eskelsen, Secretary-Treasurer

John I. Wilson, Executive Director

1201 16th Street, N.W. Washington, D.C. 20036-3290

Terri Sanders Director for Idaho 1690 Fairway Court Mountain Home, Idaho 83647 208-587-9470 tsanders@fiberpipe.net

Idaho Education Association Awards Committee Professional Standards Commission **Candidate Selection** 

Dear Committee,

It is an honor to offer my support of Shelly Rose as a candidate to the Professional Standards Commission in the Pupil Personnel area. Shelly's extensive background ranging from Special Education teacher to counselor to certificated administrator provides her the broad range of training and experience necessary for success on the PSC.

I have witnessed Shelly placing the student first in every thing she does. If a situation is not student centered, Shelly willing expresses why she is unable to support the environment.

One of Shelly's many strengths is her ability to reasonably assess all options before drawing conclusions. She is meticulous with her thoughts, an articulate and diplomatic speaker, as well as a skilled and accurate listener.

Shelly will represent the principles held by the Idaho Education Association and will be a conscientious appointee to the Professional Standards Commission. Please give her application deserving consideration.

In Unity,

di.

Terri Sanders

February 26, 2007

Sherri Wood IEA President PO Box 2638 Boise, Idaho 83701

Dear Sherri;

1 am writing this letter of recommendation in support of Shelly Rose's nomination to the Professional Standards Commission.

I have known Shelly for over 17 years as a colleague in the Mountain Home School District. In fact, I first met Shelly during my Special Education student teaching experience at East Elementary in Mountain Home. At that point in her career, Shelly was a Resource teacher serving intermediate-aged students. Over the years, she has added significantly to her credentials and experiences, giving her an unparalleled ability to globally view this complex profession we share. She has utilized her counselor's endorsement and completed her administrative credentials as well.

As an educator, Shelly is enthusiastic, hard-working, and highly committed. She is a confident self-starter who quickly assumes responsibility and has proven, time and again, that she is not afraid to face new challenges and situations. Shelly has faced voluntary and involuntary transfers within the district with equal professionalism.

Organized and diligent, Shelly is one who is willing to question the status quo and clearly articulates her concerns. I would certainly recommend Shelly Rose for any position where enthusiasm, reliability, hard work, and strong communication are valued.

Sincerely,

Robbie S. Belk

Robbie S. Belk 6<sup>th</sup> grade Language Arts Teacher Hacker Middle School Mountain Home, Idaho 83647

February 25, 2007

To Whom It May Concern:

I have known Rochelle Rose for four years, and had the privilege of working with her for the past three and a half years. During this time, I have found Shelly to be an upright and honest individual who has always been a trusted friend and colleague who never violated a trust or confidence. She has always been her own person, not subject to the pressures of peers or other outside influences. She has always followed rules and procedures set forth in both personal and professional areas. Her honesty and confidentiality could never be questioned. Shelly displays superior knowledge of children, as well as teachers' responsibilities and expectations ensuring students and teachers are treated with the utmost respect and fairness. Shelly has always established an outstanding professional rapport with her students, parents and fellow staff members. Shelly's reliability and professional attitude is invaluable to those individuals who have the privilege to know and work with her.

Shelly is an excellent family person who always does the right thing in caring for the wants and needs of her family members. Shelly has a strong morale character and a warmhearted personality. She is very personable and interacts well with people of every walk of life.

I would recommend Shelly for any position of trust and responsibility, because she has shown she will learn what is expected of her and do tasks to the best of her ability. She is an extraordinary individual, who has proven that she can excel at any endeavor she undertakes. She would be an enormous asset in any organization, position or office that she holds. Shelly is one of those individuals who will strive to make the best, better.

Feel free to contact me if you need further information.

Sincerely,

Raegan S. Sugden

Raegan S. Sugden Tom Hacker Middle School 550 East Jackson Mountain Home, ID 83647 (208) 587-2500

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Kelly Leighton <sup>Profile</sup>

- A teacher dedicated to creating a structured, supportive environment that engages student, meets the students' needs and enables them to be successful learners.
- A conscientious teacher with 8 years of experience in special education.
- Incorporates technological abilities, obtained through her Master of Education emphasis into teaching, data collection, and communication.
- A leacher that specially designs educational programs that meet the needs of her students in the least restrictive environment, by communicating with student, parents, district staff, specialists, and assessing student achievement and data.

#### Education

2001-2003	Master of Education, Lesley University
1995-1998	Bachelor of Arts in Education, Eastern Washington University
1992-1994	Associate of Arts and Sciences, Yakima Valley Community College
0 0	Associate of Arts and Sciences, Takina valley Community College

Professional Experience

Coeur d'Alene High School, Coeur d' Alene, ID

2004-Present

1000.00.00 - P. Sec. 2, 1911

#### Special Education

Currently I am providing special education services to students that qualify in the areas of Autism, Mental Retardation, Multiple Disabilities, Other Health Impaired, and Severe Learning Disability. I design lessons that meet the students' needs, and help the students become successful and independent adults.

North Pines Middle School, Spokane, WA

2001-2004

#### Special Education- Self Contained

I provided students with special education services because they had mental, behavioral, and physical disabilities. I designed lessons that incorporate grade level curriculum, EALR's, the school's reading strategies, and my students' individual needs. I consulted with district employees, social workers, parents/guardians, and student to establish IEP's, individualized reinforcement systems, and behavior plans that encouraged and provided a guideline for the student to succeed. I gathered data that was used to check progress, find areas of concern, and monitor behavior. Lakeland Junior High, Rathdrum, ID 1999-2001

#### Special Education-Life Skills

I developed curriculum and lesson plans for reading, math, written language, science, nistory, social skills, vocational skills and life skills that met the educational and social needs of the seventh through ninth grade students in the class. The students I worked with qualifies for special education in the categories of Severe Learning Disability. Mental Retardation, Autism, Other Health Impairments, and Multiple Disabilities. I worked with the MDT members to create individualized programs that met the student's needs, in the least restrictive environment. I administered the Woodcock Johnson Revised and the Idaho Alternative Assessment.

Department Chair - Special Education-CHS

This position distributes information from administration to the department and deals with department issues. Grant Recipient

I have received grants from Excel and PTO to purchase materials for the Life Skills classroom.

Member of NPMS Discipline Committee

This Committee was organized to identify the discipline needs of the school and generate ways to create a safe and supportive school environment.

Co-coordinator of NPMS Success Academy

Worked collaboratively to design an after school program that assisted students academically and introduced leisure activities that were safe and fun.

#### Letter of Recommendation for Mrs. Kelly Leighton

To Whom It May Concern:

It is my pleasure to write this letter of recommendation for Mrs. Kelly Leighton. Mrs. Leighton has served as a special education teacher here at Coeur d Alene High School for the past four years. Currently as a resource/life skills teacher at CHS, Mrs. Leighton, along with her colleagues, provides direct instruction to grade 9 through 12 students with special needs. It has been my good fortune to work closely with Mrs. Leighton throughout the course of her tenure here.

Mrs. Leighton is a skillful, conscientious, dedicated teacher who thoroughly understands how children learn. She has a wealth of experience from working with students from a variety of backgrounds and educational needs.

I have been witness to countless examples of how the timid or less than confident child has been helped to become an outgoing, enthusiastic learner by virtue of the support Kelly has supplied. I believe her success with struggling learners is rooted in her ability to support them not only academically but emotionally as well. Kelly notices the small things that matter with each child, celebrating their accomplishments, comforting them when necessary and instilling in them the belief that they matter, are important and can handle anything they need to. She is amazingly patient with her students, allowing each to learn at the rate they can and enlists classroom teachers and parents in the effort to do likewise. Her efforts routinely make the difference. Young adults who have already discovered that school is hard, that learning doesn't come easy find success and a reason to come to school in Kelly's classroom.

Kelly has always been gracious in offering her support and expertise and in that regard her efforts have made her a building wide resource. She works in support of students, parents and teachers and tends to not draw the spotlight to herself but her contributions are many and we have all been made better by her actions.

I give Kelly Leighton my highest recommendation as a quality teacher who believes in the dignity of her profession. I have no doubt that she will be a valuable asset to any committee fortunate enough to have her as a member.

Please feel free to contact me if there is any other information I can provide.

Sincerely,

In Ou

Warren Olson

March 12, 2008

March 11, 2008

To Whom It May Concern:

This letter of recommendation is written on behalf of Kelly Leighton. I have worked with Kelly for many years, and I feel she would work hard and perform well if chosen for the Professional Standards Commission position she is seeking.

Kelly is very dedicated to the teaching profession. She participates in many facets of our school community, including taking on the responsibility of departmental chair during the past school year. Kelly has a wonderful rapport with her colleagues, parents, and students. She is an effective communicator and a good listener, which are qualities that would enhance her ability to effectively serve on a committee.

I feel Kelly Leighton would make an excellent choice for a position on your committee. If you would like any further information, please contact me.

Sincerely,

aller

Lee Hostetter

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125 Parkview Dr. Pocatello, Idaho 83204

Phone (208) 478-1760 E-mail colleen.broce@pccs.k12.id.us

## Colleen K. Broce

Education	1976 – 1980	University of Utah	Salt Lake City, Utah
	B.S., Special Education		
	1981	University of Utah	Salt Lake City, Utah
	Resource Certificate		
	1983	Utah State University	Logan, Utah
	Emotionally Handicapp	bed Endorsement	
	2009	Grand Canyon University	Phoenix, Arizona
	M.Ed. Special Educatio	n for Certified Teachers	
Certification	*Idaho Teaching Crede *Comprehensive Literad	ntial for Special Educators, c cy Certificate, 2003	urrent
License	*Certificate of Attendan	ce: Attachment Issues & Rea	ctive Attachment
	Disorder, 2003	o' Home, National Descures	9 Training Contor
	Certificate of Participati	on 2003	& fraining Center.
	*Certificate of Achieven	nent: Teaching with Technolo	gy 2002-2003
	*Certificate of Completion	on: Connected University 200	01
	*State of Colorado Prov	visional Teacher License, 199	9-2002
	Dasic rechnology Con	ipetency Certificate, 1990	
Teaching	Pocatello Community C	harter School, Pocatello, Ida	ho. September 2004-
Experience	present. Professional S	pecial Educator. Full-time.	
	Salmon High School, Professional Special Edu	Salmon, Idaho. August 199 Icator. Full-time.	95- September 2004.
	Viewmont High School Special Educator. Full-tir and girls teams 1984-198	, Bountiful, Utah. August 19 ne. Head Swimming and Wate 36. Assistant Pep Club Advisor	84-1987. Professional er Polo Coach for boys 1984-1987.
	Adelaide Elementary Sc time. Professional Specia	hool, Bountiful, Utah. August al Educator.	1983- June 1984. Full-
	Burton and Kaysville Ele 1983. Full-time. Professio	mentary Schools, Kaysville, Ut onal Special Educator.	ah. August 1982- June
	Private teaching practice Professional Special Edu	e. Germany. August 1981- Ja icator.	nuary 1982. Part-time.
Skills Utilized	Implemented inclusion   disabilities in learning, b	programs for students with m behavior, language and other	ild to severe areas.
	Supervised, designed, in results and students' pr standard and/or modifie utilized positive behaving purposes of designing involved team members	mplemented programs, evalu ogress, incorporated proven ed math, reading and written ior supports and observatio programs, and facilitated co and students regularly.	ated and reported the teaching strategies for language curriculum, nal methods for the mmunication between

	Created own electronic version of Individualized Educational Program documents in accordance to the Idaho Special Education requirements in 2002.
	Aligned curriculum according to the Idaho State Standards for the purpose of increasing the individual participants' scores and assisting the students in meeting the graduation requirements.
	Designed Transitional Plan program on-line to encourage the secondary students to become active participants in their post-secondary planning.
	Designed interactive Professional Web Page about the Resource Program at the Salmon High School.
	Participated in the Teaching With Technology course and Show and Tell Project, sponsored by the J.A. and K. Albertson Foundation.
	Worked in alliance with the local mental health agencies on the behalf of the mutual parties.
Classroom	Self-contained classrooms
Environment	Co-teaching opportunities
	Full-inclusion models
Other Experiences	City of Salmon Pool, Salmon, Idaho. March 2007- August 2007. July 2006- September 2006. Certified Pool Operator. Managed pool, safety and staff in the general pool operations.
Other Experiences	City of Salmon Pool, Salmon, Idaho. March 2007- August 2007. July 2006- September 2006. Certified Pool Operator. Managed pool, safety and staff in the general pool operations. Bountiful City Pools, Bountiful, Utah. February 1976- September 1986. Intermittently. Full-time and part-time. Taught swimming skills from beginning to senior lifesaving to students six months through adult. Taught synchronized swimming. Also trained and supervised other instructors devised swimming instructional methods for use in classes.
Other Experiences	<ul> <li>City of Salmon Pool, Salmon, Idaho. March 2007- August 2007. July 2006- September 2006. Certified Pool Operator. Managed pool, safety and staff in the general pool operations.</li> <li>Bountiful City Pools, Bountiful, Utah. February 1976- September 1986. Intermittently. Full-time and part-time. Taught swimming skills from beginning to senior lifesaving to students six months through adult. Taught synchronized swimming. Also trained and supervised other instructors devised swimming instructional methods for use in classes.</li> <li>Specifics: June 1984- September 1986. Head Swimming Coach of United States Swimming Team consisting of approximately 50-80 school-aged youths and a masters' program for adults interested in fitness and/or competition. Organized programs of stroke clinics, designed workouts, created incentives, enlisted youths to compete, supervised assistant coaches, edited the team newsletter, responsible for bookkeeping and purchases of swimming paraphernalia.</li> </ul>
Other Experiences	<ul> <li>City of Salmon Pool, Salmon, Idaho. March 2007- August 2007. July 2006- September 2006. Certified Pool Operator. Managed pool, safety and staff in the general pool operations.</li> <li>Bountiful City Pools, Bountiful, Utah. February 1976- September 1986. Intermittently. Full-time and part-time. Taught swimming skills from beginning to senior lifesaving to students six months through adult. Taught synchronized swimming. Also trained and supervised other instructors devised swimming instructional methods for use in classes.</li> <li>Specifics: June 1984- September 1986. Head Swimming Coach of United States Swimming Team consisting of approximately 50-80 school-aged youths and a masters' program for adults interested in fitness and/or competition. Organized programs of stroke clinics, designed workouts, created incentives, enlisted youths to compete, supervised assistant coaches, edited the team newsletter, responsible for bookkeeping and purchases of swimming paraphernalia.</li> <li>Honorable scholastic achievement at University of Utah.</li> </ul>
Other Experiences	City of Salmon Pool, Salmon, Idaho. March 2007- August 2007. July 2006- September 2006. Certified Pool Operator. Managed pool, safety and staff in the general pool operations. Bountiful City Pools, Bountiful, Utah. February 1976- September 1986. Intermittently. Full-time and part-time. Taught swimming skills from beginning to senior lifesaving to students six months through adult. Taught synchronized swimming. Also trained and supervised other instructors devised swimming instructional methods for use in classes. Specifics: June 1984- September 1986. Head Swimming Coach of United States Swimming Team consisting of approximately 50-80 school-aged youths and a masters' program for adults interested in fitness and/or competition. Organized programs of stroke clinics, designed workouts, created incentives, enlisted youths to compete, supervised assistant coaches, edited the team newsletter, responsible for bookkeeping and purchases of swimming paraphernalia. Honorable scholastic achievement at University of Utah. Top ranks in running in the state of Utah (1980's).
Other Experiences	<ul> <li>City of Salmon Pool, Salmon, Idaho. March 2007- August 2007. July 2006- September 2006. Certified Pool Operator. Managed pool, safety and staff in the general pool operations.</li> <li>Bountiful City Pools, Bountiful, Utah. February 1976- September 1986. Intermittently. Full-time and part-time. Taught swimming skills from beginning to senior lifesaving to students six months through adult. Taught synchronized swimming. Also trained and supervised other instructors devised swimming instructional methods for use in classes.</li> <li>Specifics: June 1984- September 1986. Head Swimming Coach of United States Swimming Team consisting of approximately 50-80 school-aged youths and a masters' program for adults interested in fitness and/or competition. Organized programs of stroke clinics, designed workouts, created incentives, enlisted youths to compete, supervised assistant coaches, edited the team newsletter, responsible for bookkeeping and purchases of swimming paraphernalia.</li> <li>Honorable scholastic achievement at University of Utah.</li> <li>Top ranks in running in the state of Utah (1980''s).</li> <li>Several awards in the eight-year career in both competitive and synchronized swimming.</li> </ul>

Minor awards in art contests.

Professional	Accrediting Team Member for Hillcrest High School, Spring of 1985.					
Service	Member of Peer Evaluation Committee for the Teacher Career Ladder Program, 1986-1987.					
	Involved with the Accrediting Program for Viewmont High School, 1986-1987.					
	Member of the Pocatello Community Charter School Board, 2005- 2007.					
	Member of the Hiring Committee for the Pocatello Community Charter School, 2006 and 2008.					
Professional Recognition	Awarded performance compensation as a part of Career Ladder Program for 1985-1986.					
	Awarded performance compensation again for 1986-1987.					
Professional	Northwest Professional Educators, 2004- present					
Organization	Council for Exceptional Children, 2007- present					
	National Association of Special Education Teachers, 2007- present					
Volunteer Experience	Member of the hiring committee at the Pocatello Community Charter School, 2006 and 2008					
	Assisted with after school tutoring program, 2004-2007.					
	Helped with the cross-country running teams 2002-2004.					
	Helped with the track team 2004.					
	Helped with the public library summer reading program 1995-2002.					
	Helped with the Kids' Art in the Park 1995-2002.					
	Helped with the 4-H activities for several summers.					
Interests	Reading, running, being with my family, gardening, traveling, hiking, camping and learning.					
	Proud parent of a daughter who graduated as a salutatorian in 2006 and a son who received the Presidential Scholars Award in 2007.					



#### POCATELLO COMMUNITY CHARTER SCHOOL

March 12, 2010

To Whom It May Concern:

I am writing to recommend Colleen Broce for the position of Special Educator on the Idaho State Department of Education Professional Standards Commission. Colleen has been a special education teacher here at the Pocatello Community Charter School for six years. During that time, she has served students with a variety of exceptionalities from kindergarten through 8<sup>th</sup> grade. For the last several years, Colleen has been in charge of special education as well as gifted and talented services for all our 4<sup>th</sup>-8<sup>th</sup> grade students.

Colleen is smart, dedicated, and professional. She takes her job seriously and she works hard to stay up to date on all changes in special education policies and procedures. I recommend Colleen Broce without reservation and I believe that she is well qualified to accept a leadership position with the PSC.

Please don't hesitate to contact me if you have any questions.

Respectfully,

Dr. Martha B. Martin

Dean

995 S. ARTHUR \* POCATELLO, 1D \* 83204 PHONE: (208) 478-2522 \* FAX: (208) 478-2622 DR. MARTHA B. MARTIN. DEAN

### Pamela E Danielson

Home - 44039 Bobbitt Bench Rd Peck, Idaho 83545 pamd@cpcinternet.com 208-486-6361 School - 300 Dunlap Road Orofino, Idaho 83544 danielp@sd171.k12.id.us 208-476-5557

Orofino High School Aug. 2007 to present

Teaching Experience

- U.S. History 10th grade .
- World History and Honors World History 9th grade

- - Street Law 9th 12th grade
    - **Orofino Junior High**
- 7<sup>th</sup> Grade Social Studies
- 8<sup>th</sup> Grade Social Science Exploratory and Project Citizen Coordinator
  - Orofino Elementary 6th Grade 1980 1996
- Social Sciences Department head
- Teaching American History Grant (Frontiers) participant
- Youth Legislature Advisor
- Mock Trial Advisor
- Technology Committee Member
- Member District Social Studies Committee
- Character Education committee
- Safe and Drug Free Schools District Member
- Idaho Learn and Serve Grant recipient
- Patriot's Award from VFW 2004 2009
- Participant Goethe's Transatlantic Outreach Program to Germany 2008.
- Presenter at Idaho Council History Educators Oct. 2004, Oct. 2007
- Idaho Middle School Teacher of the Year 2006 Region II
- National Council for Social Studies Membership Committee member 2006 2008

#### Awards -

- Accomplishments
- Presenter at National Council for Social Studies, Nov. 2005 Region 2 Representative for the Idaho Middle Level Association 2005 – 2008
  - Human and Civil Rights Committee member Idaho Education Association
  - Project Citizen State Winner 2003, 2005
  - Presenter at Idaho State Middle Level Conference March 2005
  - Project Citizen Mentor at Western Regional Conference Boise, 2003
  - NAEP History Test Writer 2003

	National Council for the Social Studies
	<ul> <li>National Social Studies Supervisors Association</li> </ul>
	<ul> <li>National Council for History Educators</li> </ul>
Professional	<ul> <li>Idaho Council for History Educators</li> </ul>
Memberships	National Education Association
	<ul> <li>Idaho Education Association</li> </ul>
Education	MA – University of Idaho
	BA – University of Northern Colorado
	2008 – Transatlantic Outreach Study Tour to Germany; Gilder Lehrman Teaching Digital History seminar
Recent workshops.	2007 – Attended NEH Landmark program: The Industrial Revolution; We the People: The Citizen and the Constitution; Freedoms Foundation - The American Revolution Southern Campaign; Center for Civic Ed – Founding Fathers
	2006 – Attended NEH Landmark Programs: Between Columbus and Jamestown: Spanish St. Augustine and Fort Snelling 2005 – Attended National History Day weeklong workshop in Chicago on Pullman Strike,
	Autored NEW Londmark program: Wining Away the Trail of Tears
	2005 - Attended NEH Landmark program: Story the Road We Trod Civil Righs
Castification	2004 - Attended NEH Landmark program. Story the Node the Hos entring to
Certification	Secondary Contification for Social Studies 6-12
	Advanced Elementary Cartification 1 - 8
	Advanced Exceptional Child Certification (Spec. Ed.) K - 12
	<ul> <li>Watching sports, especially when my sons are playing</li> </ul>
Interests	Reading
	Travel
	Mr. Jerry Nelsen, Principal
	Orofino High School
References:	300 Dunlap Rd
	Orofino, ID 83544 Email: nelsenj@sd171.k12.id.us
	208.476.5557
February 13, 2009

To Whom It May Concern,

I am writing this letter to nominate my colleague, Mrs. Pam Danielson, to serve on the Idaho Professional Standards Commission. I have known Mrs. Danielson for over 15 years and can verify she is a worthy candidate for this position.

Mrs. Danielson has taught in a variety of subjects and grade levels. I first knew her as a sixth grade teacher, where I ensured my son was in her classroom. She stood out as a profession who loved her career and used that passion to motivate her students.

Later, when Mrs. Danielson transferred to the junior high school to teach Social Studies and Math, I again made arrangements for my son to take classes from her; her excitement and innovative classroom teaching created a love for learning in all students there.

When an opening came for a Social Studies teacher at the high school where I taught, I immediately thought of Pam Danielson as someone with whom I would like to work in the same building. She began a new career at that level of secondary education and has already proven herself again as a master of everything she pursues.

In addition to her work at all grade levels in Social Studies and Math, Mrs. Danielson has also studied and taught Special Education. Her well-rounded diversity in subject and grade level would aid her in a position on the commission.

Mrs. Danielson has maintained a commitment to the local and state education association throughout the period I have known her and continues to serve as a leader in the district and at the state level in various organizations.

It is a privilege for me to nominate with confidence such an outstanding candidate for the PSC as Mrs. Pam Danielson. 1 hope you will contact me so that I can further discuss her qualifications with you.

Sincerely,

Cindy P. Wilson American Government Teacher

February 26, 2009

To Whom it May Concern:

I would like to recommend Pam Damelson for a position on the Professional Standards Commission. Mrs. Danielson and I taught together for several years at Orofino Junior High. She was, and still is, someone I can depend on to help me professionally and personally. During her years at the junior high, she was reliable in her commitments to her students and her profession. The Professional Standards Commission would be lucky to have her serve. She will prove to be a trustworthy member dedicated to working on high standards.

Thank you for your time.

Sincerely,

eggeal

Patricia Reggear Orofino Junior High P. O. Box 706 Orofino, ID 83544

05/56/5003 T3:81 5084263351

March 2, 2009

#### Dear President Sherri Woods:

It is a great privilege for me to be able to write this letter of recommendation for Pam Danielson as she has served as a mentor to me in both teaching and my Education Association activities. Mrs. Danielson was a teacher in Junior High School for eleven years where both of my sons attended and is now a colleague of mine since moving to Orofino High School three years ago. Pam was an active, involved teacher while at the Junior High and has continued that involvement at her new high school position.

Mrs. Danielson's many activities involve taking part in mock trials, History Day, Gilder Lehrman workshops, educational field trips to India and China, summer seminars with National Endowment for the Humanities and many more too numerous to mention. However, her dedication to her profession doesn't end there. Pam has been a member of NEA and IEA for 20+ years. Not being content with passive membership, Pam has served in a variety of capacities including three years on the Human and Civil Rights Committee, attendance at seven Delegate Assemblies, and currently as vice-president of her local Clearwater Education Association. She has also been an active membership recruiter and avid supporter for PACE and the Children's Fund.

I feel it important to mention that Mrs. Danielson is a model teacher in our school. If you speak to any of her students, they would indicate that she is a true advocate on their behalf. She knows the names of nearly all of the students in the school and takes an active part in seeing that each of them succeeds. You will often see her in the cafeteria or hallway speaking to someone about what's going on at home, why they missed class, or what she can do to help. If you were to attend many of the extracurricular activities, you would find her cheering for the local team and her students as well. She truly carries the successes and failures of her students as her own.

It is because of examples like Mrs. Pam Danielson, and her active, involved membership participation, that our Idaho Education Association and local Clearwater Education Association are as strong as they are. Teachers, staff members, and most importantly, students benefit from her involvement in the Idaho Education Association and IEA would benefit greatly from her knowledge and wisdom on the Professional Standards Commission.

Sincerely,

Innette Haag Annette Haag

Annette Haag Social Studies Instructor Orofino High School 300 Dunlap Road Orofino, ID 83544 Clearwater Education Association, President

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# **Jeffrey Raymond Rigg**

4930 E. Woodland Dr. Post Falls, ID 83854 (208) 773-6764 jrigg@cdacharter.org jeffrey\_rigg@hotmail.com

## **Objective:**

To participate in the Idaho Professional Standards Commission for Secondary Teachers

## **Education:**

## Masters of Science in Adult Education, 2002

Concentrations: Human Resource Development (in a fitness setting) Thesis: *Predicting Intentions of Native Americans to Participate in Adult Physical Education Classes Using the Theory of Planned Behavior*. University of Idaho, Coeur d' Alene, Program GPA- 4.0

## **Bachelor of Science Degree in Physical Education, 1998**

Degree/Emphasis: Sport Science Minor: Zoology University of Idaho, Moscow, Cumulative GPA-3.38

## Work Experience:

**Instructor** (9/02- Present) - Coeur d'Alene Charter Academy- (A college-prep academy and one of the top schools in the nation) Courses: Physical Education and Health, Human Physiology, Life Science, Algebra, Pre-Algebra, Computer Skills

Adjunct Faculty in Physical Education (9/01-Present) - North Idaho College Courses: First Aid, Wellness Lifestyles, Cardiovascular Training, Beginning Swimming, Intermediate Swimming, College Skills

**Middle School Science Bowl Coach** (2006-Present)- Coeur d'Alene Charter Academy. Coached 20-30 students in building Hydrogen/Solar powered cars and academic coaching for science quiz bowl.

**Instructor** (6/05) – University of Idaho Course: Physical Education and Sports Administration (Undergraduate and Graduate)

**Health, Safety, and Aquatics Instructor** (6/98–2008)- Coeur d' Alene Tribe Responsible for keeping Wellness Center staff and other tribal departments updated on various Red Cross Certifications. Also instructed community classes. Employed as a fill-in/contract worker for the tribe.

Fitness Manager/Aquatic Supervisor (6/98-3/02) - Coeur d'Alene Tribe

Involved in all aspects of managing a fitness center. Duties included: managing 4-10 employees, working with budgets, program planning and implementation, fitness, health and safety class instruction, maintenance, customer service, and grant writing. In aquatics duties also included coaching, youth and adult instruction, and pool maintenance.

Basic EMT (1/99-12/99) – Worley Ambulance

**Sports Science Internship** (1997) - Washington Institute of Sports Medicine (320+ hrs). Personal trainer for many youth, college, and pro athletes in the Seattle area.

**Instructor/Assistant Instructor** (1993-1998) - University of Idaho Courses: First Aid, Lifeguarding, CPR

**High School Swim Coach** (1993-1997) - Moscow High School. Coached for five years and saw the team grow from 10 swimmers to 30+ swimmers and a second place finish at state.

**Masters Swim Instructor** (1994-1998) - University of Idaho. Instructor for nearly five years with the U of I community enrichment program working with area Master's swimmers and triathletes.

## **Presentations/Committees:**

- Rigg, Jeff and Bass, Rob (2003). Intel Teach to the Future Program. CDA Charter Academy.
- Rigg, Jeff (2005). Predicting exercise intentions of Native Americans. Northwest AAHPERD conference. Moscow, ID.
- Rigg, Jeff (2005). Combining Technology and Physical Education. NCCE conference, Spokane, WA.
- Rigg, Jeff (2008). Idaho Science Teacher Association. Presenting Department of Energy Middle School Science Bowl. Idaho Falls, ID.
- **Committee Member**, State of Idaho Revision of Physical Education curriculum guidelines and endorsement standards.

## Grant Experience:

- Robert Wood Johnson Grant for Community Health (Funded).
- Office of Minority Health- Heart n' Motion Grant (Funded), Project Coordinator.
- North Idaho College Foundation Grant (not funded, but funding was given via another grant)
- INEL Technology Grant (2008)- Physical Education Technology (Funded). Primary Author.

## Awards:

- Outstanding Thesis Award- (2002) Idaho Lifelong Learning Association
- Health and Safety Award- (2003) American Red Cross
- Managerial Award- (2000) Coeur d'Alene Tribe

- Clem Parberry Scholarship Recipient (97-98) University of Idaho
- Dean's List (96, 97, 98) University of Idaho

## **Certifications and Skills:**

- American Red Cross Certified Emergency Response Instructor
- American Red Cross Certified CPR for the Professional Rescuer Instructor
- American Red Cross Certified Lifeguarding Instructor
- American Red Cross Certified Basic First Aid and CPR and AED Instructor (updated)
- Firefighter: Worley Fire District
- PADI Certified Open Water Diver
- American Safety and Health Institute Basic Wilderness First Aid and CPR-PRO Instructor
- Arthritis Foundation Exercise Instructor and Instructor Trainer
- Emergency Medical Technician (expired)
- WebCT Vista Core Training
- MS PowerPoint, Word, Publisher, FrontPage and Excel

#### Mary J. Markland

From:	NW Professional Educators [info@nwpe.org]
Sent:	Thursday, March 11, 2010 2:04 PM
To:	Mary J. Markland
Subject:	Pull Bill Proser from PSC Nomination/Substitute Jeff Rigg
Attachmen	ts: Jeff Rigg resume.doc

Dear Mary Jane,

Bill Proser needs to pull his nomination for the PSC due to health issues. Instead, please consider Jeff Rigg (resume attached).

Jeff upholds the highest standards no matter what subject area he teaches. One of his colleagues at the Coeur d'Alene Charter Academy recommends Jeff thusly:

"It's a rare opportunity to watch a teacher like Jeff Rigg in action. In the last four years I have been awed by his ability to meet the needs of all his students. Through his organizational skills in planning, and providing a web-site, parents and students alike know exactly what is going on in his class. He gives his students every opportunity to succeed. Mr. Rigg is careful to address the state standards, Charter's mission statement as well as the needs of his students. The students adore him. In addition to being well-informed, organized and interesting, he also has the most amiable and agreeable disposition. It is pleasure to work with him. Last year I taught P.E. to the sixth grade class and I went to Jeff for guidance. He also teaches first aid and CPR classes to the staff. He is always approachable. Jeff would be a great asset to any organization."

Thank you!

Cindy Omlin Executive Director Northwest Professional Educators The Northwest Educator's Choice for Professionalism and Protection www.nwpe.org, 800-380-6973 Become an NWPE Facebook Fan at http://is.gd/4wooL.

3/11/2010

Page 1 of 1

#### Mary J. Markland

 From:
 NW Professional Educators [info@nwpe.org]

 Sent:
 Thursday, March 11, 2010 2:08 PM

 To:
 Mary J. Markland

 Subject:
 Jeff Rigg-student note

Jeff sent this note from a student to me and I thought I'd pass it on. I don't know if it is the appropriate type of thing to send you or not.

Here is a nice letter from one of my students this semester!

I have a very good grade in this class so this note is not meant to "butter my instructor up", but I feel it is important that we all acknowledge Mr. Rigg for the fantastic job he does as an instructer. I am 40 years old, I have had many "teachers" or "mentors" in my lifetime and he is simply the best of the best. Mr. Rigg is not only highly educated in his field he is also VERY easy to understand. I have a slight learning disability and yet I feel that the way Mr. Rigg teaches us gives us all a chance to be very successful. I am enjoying this class and learning alot of material at the same time. This is what a good education is. Thank you Mr. Rigg for the way you do things, I am feeling confident about my future. I have taken this same type of course about three times prior over the past 17 years of my nursing career and it has never "stuck" this well for me, I am really getting it! I was very frightened about learning the angel web page and it confused me, you never made me feel like I was an idiot and in fact your patience helped me to fully grasp the concept of hybrid courses. I personally like this type of course now. I still get the privelage of having hands on training as well as the freedom to work at home. Things have really changed since I was first studying health care but I now feel like I am keeping up with the younger generation. The college is lucky to have you. What other courses do you teach if any? Do me a favor and forward this letter to your boss, if I knew who he/she was I would do it myself. I hope that they understand just how serious I am and that you are acknowledged by your peers like you are by your students and there is a whole class full that I personally know of that appreciates you. Take care, see you in a few weeks, I am ready to rock the rest of this class.

Lisa Pannell

Cindy Omlin Executive Director Northwest Professional Educators The Northwest Educator's Choice for Professionalism and Protection www.nwpe.org, 800-380-6973 Become an NWPE Facebook Fan at http://is.gd/4wooL.

3/11/2010

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2850 E Bent Tree Lane Harrison, ID 83833 208-664-9983 <u>btranch@gmail.com</u> <u>dennissmith@sd273.com</u>

Curriculum Vitae

# **Dennis J. Smith**

Teaching	3/2005 – Present	River City Middle School	Post Fall, ID			
Experience	<ul> <li>Physics 6/12</li> </ul>	cation Credential – Standard	Secondary			
	<ul> <li>Natural Science 6/12</li> </ul>					
	<ul> <li>Mathematics 6/12 – through Algebra 1</li> </ul>					
	<ul> <li>Dramatic increase in Math ISAT scores for all sections taught</li> <li>Increased Alexandre 4 Middle October Decement from 40 to 15 of of the</li> </ul>					
	<ul> <li>Increased Algebra 1 Middle School Program from 16 to 45 6<sup>st</sup>-8<sup>st</sup> graders (6<sup>th</sup> and 7<sup>th</sup>-graders who complete Alg1 attend Geometry or Honors Geometry at Post Falls HS – I established this program)</li> </ul>					
<ul> <li>Researched, applied for, and received over \$5,000 in techn grants in the last three years – new Technology Grant Found established as an additional result</li> </ul>						
	<ul> <li>Defined Algebra 1 Course Readiness Requirements, Developed and Presented Pre-Algebra End-of-Course Assessment Requirements and Assessment Instrument as part of a District High School-Middle School Collaborative Task Force</li> </ul>					
	<ul> <li>Currently piloting a new Pre-Algebra to Algebra Instructional Prog</li> <li>Completed Graduate coursework in NCTM Standards implemen for the district</li> </ul>					
	<ul> <li>1/2005 – 3/2005 River City Middle School (Teaching Internship)</li> <li>Natural Science, Algebra 1, Jason Project Leader</li> </ul>					
	9/2005 – 12/2005 C • Teaching Internship • Physical Science • Physics	oeur d'Alene H.S.	Coeur d'Alene, ID			
	rofessional Education I Software Applications – Course Development and Ins – Course Development and Inst nt – Instruction	truction truction				
Education	University of Idaho		Coeur d'Alene, ID			
	<ul> <li>Instruction and Currici</li> </ul>	ulum				

	<ul> <li>University of Colorado Boulder, CO</li> <li>Graduate School - Engineering Management</li> <li>Master of Engineering course work in software development</li> <li>Engineering Management</li> <li>Developed Software Development Manual for IBM</li> <li>Developed Proposal Development Guide for IBM</li> </ul>			
	Humboldt State UniversityArcata, CABachelor of ScienceImage: Comparison of SciencePhysicsPhysical Oceanography and Advanced MathematicsHolographic Interferometric Solution to an Eigen Value Problem			
	College of the RedwoodsEureka, CAAssociate of ScienceEureka, CA• Science – Physics, Botany, Zoology, Chemistry•• Mathematics – Calculus, Differential Equations			
Professional Certifications	1985 - 1995IBM Federal SystemsColorado Springs, COSystems EngineeringProject ManagementProposal Management			
Science/Technology Applications	<ul> <li>Satellite Operations</li> <li>Global Positioning System (GPS) development and support</li> <li>Defense Support System development and support</li> <li>Communications on-orbit support</li> </ul>			
Industry Experience	<ul> <li>1976 - 2003 Various Aerospace Corporations</li> <li>IBM – Systems Engineering, Project/Program Management, Proposal Management</li> <li>Northrop, Rockwell, TRW – GPS development and support; satellite and ground stations design and on-orbit operational support</li> <li>Lockheed – Satellite on-orbit operational support</li> <li>Network &amp; PC Operations/Training for municipal government</li> </ul>			
References	Available upon request			



# **POST FALLS SCHOOL DISTRICT #273**

DISTRICT ADMINISTRATIVE OFFICE P.O. Box 40 • Post Falls, ID 83877-0040 208-773-1658 • FAX 208-773-3218 www.pfsd.com

May 5, 2010

TO WHOM IT MAY CONCERN

My name is Becky Ford. I currently serve as the assistant superintendent of the Post Falls School District. It is a pleasure to write a letter of recommendation for Dennis Smith.

Mr. Smith joined the Post Falls School District five years ago. He currently teaches math the River City Middle School.

Dennis joined the school district after completing his Masters of Education from the University of Idaho in 2003. He received his masters in curriculum and instruction.

Before entering the educational arena, Mr. Smith worked for IBM Federal Systems in systems engineering, project management and proposal management. Mr. Smith brings a great deal of expertise to the classroom and would bring that same expertise to the Professional Standards Commission.

While teaching for Post Falls School District, Mr. Smith has collaboratively worked with High School math teachers to develop both year end assessments and core curriculum requirements for transition from seventh through ninth grades.

Dennis is highly respected in the Post Falls School District. He works hard. He is very professional in everything he says and does and is an excellent role model.

Having worked in public education and the private sector would bring a very well valuable perspective to the Professional Standards Commission.

I recommend Mr. Smith for your consideration without any hesitation. He is a good man.

Please feel free to give me a call if you have any questions.

Sincerely,

Becky Ford

Becky Ford, Assistant Superintendent Post Falls School District

RANDY ALLEN. ASSISTANT PRINCIPAL **RIVER CITY MIDDLE SCHOOL** N. 1505 FIR STREET POST FALLS, IDAHO 83854 208.457.0933 of the Titans March 4, 2010 Re: Professional Standards Committee Dear Sir or Madam: This letter is in reference to Dennis Smith with whom I have worked for the past four years. During this time, I have been afforded many opportunities to observe Dennis working with our students and also with other staff members. I recommend Dennis Smith for the Professional Standards Committee with absolutely no hesitation. Dennis Smith has been a valued member of our staff. He is industrious, personable, and has a great rapport with the students. In the classroom, he is organized and in tune with his students. Dennis is always ready to take on any challenge, meeting it in a very positive manner. Dennis has also proven his leadership abilities by serving on several math committees. He is not reticent to take the lead to solve the problem at hand. He always has great ideas that have the students' best interests in mind. He has also shown his leadership abilities at our school, serving on several committees to fine-tune our math program at River City Middle School. He is a very highly qualified mathematician and also in science, a testament to his diverse background. To illustrate his dedication Dennis Smith made the Idaho State Standards for math available to all teachers via the computer. Dennis not only shows his dedication to the staff, he is a family man holding deep convictions. For a period of time, his son worked with him closely here at RCMS. It was evident in watching their interaction that Dennis is a mentor rather than merely a supervisor. He takes the time to explain the rationale behind any decision. We at River City Middle School are proud to call Dennis Smith a colleague. He is always willing and more than able to help our school in any way possible. If you have any questions, please feel free to contact me at RCMS. I would welcome the opportunity to speak with you about Dennis Smith's qualifications. Sincerely, Reining Rillin RANDY ALLEN **Assistant Principal** 

## Mikki Samargis Nuckols

587 Reagan Idaho Falls, Idaho 83401 Home (208) 524-4793 Cell (208) 680-6454

#### OBJECTIVE

To utilize my teaching dynamics in enhancing the lives of youth.

#### **EDUCATION**

**BACHELOR OF EDUCATION K-8; READING ENDORSEMENT K-12**. Idaho State University, Pocatello, Idaho. December 1995.

MASTER OF EDUCATION (LITERACY). Idaho State University, Pocatello, Idaho. December 2006.

#### EXPERIENCE

**TEACHER** Rocky Mountain Middle School, Idaho Falls, Idaho. November 1998 to Present. (7<sup>th</sup> Grade)

- Reading Teacher for 7<sup>th</sup> grade Team Cougar. I work with the Team Puma and Jaguar reading teachers to set up a curriculum calendar to match standards, create assessments for units, and end of course assessments.
- Team Leader for Team Cougar. Bi-monthly meetings with other team leaders. Conduct weekly meetings discussing curriculum, student concerns, and team activities.
- Focus Team Leader for the literacy team. 2005-2009
- Summer school reading teacher for both incoming 7<sup>th</sup> and 8<sup>th</sup> graders. 2006-2008
- Mentor for new teachers at Rocky Mountain Middle School. 2004 to present
- Advisor for the PALS program.
- Book adoption committee member for reading/literature for District 93..

**Special Project Assignment** –Bonneville Joint School District 93, Idaho Falls, Idaho. August 2009 to Present. Trainer for mentor teachers. Conducts monthly mentor training sessions using the New Teacher Center training format.

Idaho State Teacher Evaluation Taskforce.

(6<sup>th</sup> Grade) Responsibilities included: reading program instruction for all of Team B including power reading, one section of science, and one section of World Civilization.

Team Leader for 6<sup>th</sup> grade Team B.

(8<sup>th</sup> Grade) Responsibilities included: instruction in grammar, spelling, literature, and Accelerated Reading program. Developed and instructed AR Literature for low-level readers.

#### ORGANIZATIONS

Delta Kappa Gamma: 1<sup>st</sup> Vice President (2008-2010) 2007 Milken Educator Award Northwest Professional Educators American Council Teacher to Russia

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### SUBJECT

George Fox University (GFU), Master of Arts in Teaching (MAT) Program in Visual and Performing Art, Foreign Languages, Physical Education, and Health Focused Review Team Report

## APPLICABLE STATUTE, RULE, OR POLICY

Section 33-114 and 33-1258, Idaho Code Idaho Administrative code, IDAPA 08.02.02.100

#### **BACKGROUND/DISCUSSION**

Team members representing the Idaho State Department of Education conducted a focus visit to review the George Fox University (GFU) Master of Arts in Teaching (MAT) program upon its request for approval at their Boise, Idaho Center in the teaching disciplines of visual and performing art, foreign languages, physical education, and health.

The review was conducted October 28 and 29, 2009. In preparation for the visit, the professional education unit, which is responsible for the preparation of teachers and school administrators, prepared a self-study (*George Fox University: School of Education, Master of Arts in Teaching, Institutional Report – 2009, Focused Visit*). A three member State Evaluation Team and an Idaho State Department PSC Coordinator visited the George Fox University campus located in Boise, Idaho. Representatives from the team also visited partnership schools where candidates are placed for clinical and field experiences. The team's goal was to review the four programs to determine if there was sufficient evidence indicating that GFU MAT teacher candidates met the Idaho Standards for Initial Certification.

The review centered on the State of Idaho Department of Education Professional Teacher Standards. The results of the review specific to each standard together with its principles and related elements have been considered. In addition, the team's written comments and recommendations are addressed in the rubrics. The evidence was evaluated using three ratings: approved, approved conditionally, not approved. Based upon the evidence, the Professional Standards Commission recommends full approval of the Master of Arts in Teaching (MAT) program in visual and performing art, foreign languages, physical education, and health.

#### IMPACT

In order to maintain their status as an Idaho approved program and produce graduates eligible for Idaho teacher certification, George Fox University must offer teacher preparation programs adequately aligned to State Standards.

## ATTACHMENTS

Attachment 1 – State Review Team Report

Page 3

## **BOARD ACTION**

A motion to accept the State Review Team Report, thereby granting program approval of the Master of Arts in Teaching (MAT) program in visual and performing art, foreign languages, physical education, and health at George Fox University.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No \_\_\_\_

IDAHO STANDARDS FOR INITIAL CERTIFICATION OF PROFESSIONAL SCHOOL PERSONNEL

**TEAM VISIT REPORT** 

# George Fox University October 27-28, 2009

Reviewers: Lana P. Elliott, Lewis-Clark State College, chair; Randy Schrader, Physical Education/Health; Cathy Mansell, Art; Katie Rodenbaugh, Idaho State Department of Education, PSC Coordinator

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## I. INTRODUCTION

Team members representing the Idaho State Department of Education conducted a focus visit to review the George Fox University (GFU) Master of Arts in Teaching (MAT) program upon its request for approval at their Boise, Idaho Center in the teaching disciplines of visual and performing art, foreign languages, physical education, and health. George Fox University's proposal stated that:

"The [GFU] School of Education will offer its current Oregon TSPC-approved MAT in your community format at the Boise Center. The Oregon TSPC has approved the offering of this existing program for candidates in Boise for an Oregon initial teaching license. Additional components will be added to the EDUG 560 *Language and Literacy* and to the EDUG 551-557 *Curriculum and Instruction* courses to prepare candidates for the Idaho certification tests of literacy and technology. Graduates of the Boise MAT program would receive an Oregon initial license and apply for an Idaho regular five-year license based on the Idaho reciprocity agreement of accepting Oregon's initial teaching license. If the graduates pass the literacy and technology tests, they would also receive an Idaho regular five-year license."

The review was conducted October 28 and 29, 2009. In preparation for the visit, the professional education unit, which is responsible for the preparation of teachers and school administrators, prepared a self-study (*George Fox University: School of Education, Master of Arts in Teaching, Institutional Report – 2009, Focused Visit*). A three member State Evaluation Team and an Idaho State Department PSC Coordinator visited the George Fox University campus located in Boise, Idaho. Representatives from the team also visited partnership schools where candidates are placed for clinical and field experiences. The team's goal was to review the four programs to determine if there was sufficient evidence indicating that GFU MAT teacher candidates met the Idaho Standards for Initial Certification.

The standards used to validate the institutional report are the Idaho Standards for Initial Certification of Professional School Personnel. Rubrics for each set of standards were used for the review process. Team members determined if there were sufficient data from at least three sources of evidence to validate each area reviewed. Examples of the sources of data reviewed include, but are not limited to: course syllabi; program plans and descriptions; advising checklists; class assignments; assessment data; interviews with cooperating teachers and candidates, and candidate work samples. State reviewers visited sites where they were able to speak with cooperating teachers, administrators, and teacher candidates. In addition to the review of documents, team members also conducted interviews with university faculty and administrators, as well as university supervisors.

#### Background

Upon receiving initial approval from the Idaho State Department of Education to implement the MAT program, GFU started the first MAT cohort in January 2006 at the Boise Center. They subsequently requested the state's approval to become an authorized Idaho School Personnel Preparation Program and received that approval in 2007, so that GFU is now able to recommend candidates for Idaho elementary/secondary certification without first receiving an Oregon license. The MAT curriculum has been enhanced to ensure proper preparation for the Idaho Comprehensive Literacy Assessment and technology competency. Fifty-four candidates have completed the MAT program in Boise, and in 2009, three elementary candidates were recommended for Idaho certification.

The GFU MAT degree program began in summer 1992 as a three semester, masters level initial licensure program based at the GFU Newberg, Oregon campus. The three semester program was delivered as a full-time day format. In 1999, the MAT program added a five semester, part-time delivery as an evening format starting each August, based at the GFU Portland Center. In 2001, a four semester offering of the MAT program was added with delivery from Portland, Redmond, Salem, and East Portland sites. Since the four semester program was delivered off-campus in various communities, it was labeled the community format. In 2006, GFU began offering this same four semester MAT community format program at the Boise, Idaho site to its cohort of candidates. All three formats, day, evening and community, use the same curriculum, texts, and syllabi.

The purpose of the MAT program is to prepare teachers for public and private schools. Individuals entering the MAT program are required to have developed during their undergraduate experiences a breadth and depth of knowledge in the content areas for which they seek certification. This content knowledge becomes the foundation for the professional education courses and practicum experiences the MAT program offers.

The curricula, field experiences, and student teaching prepare MAT candidates in the knowledge, skills, and dispositions needed to become competent teachers in public and private schools that reflect our multicultural society. Only candidates who demonstrate competence in content knowledge, professional knowledge, and professional practice are considered suitable for teaching careers. All candidates must successfully meet these competencies to be recommended as program completers. Only program completers are considered eligible for initial certification.

At the time of the this proposal they have had several program completers and are prepared to address the additional certification endorsements of foreign languages, health, physical education, and visual and performing arts in a focused visit by the Idaho State Department of Education.

## II. RESULTS OF PROGRAM REVIEW Based On the State of Idaho Professional Teaching Standards

PROGRAM: FOREIGN LANGUAGES			
STANDARD	RECOMMENDATION		
Standard 1: Knowledge of the Subject Matter The teacher	APPROVED		
understands the central concepts, tools of inquiry, and			
structures of the discipline taught and creates learning			
experiences that make these aspects of subject matter			
meaningful for students.			
Standard 2: Knowledge of Human Development and	APPROVED		
Learning - The teacher understands how students learn and			
develop, and provides opportunities that support their			
intellectual, social, and personal development.			
Standard 3: Adapting Instruction for Individual Needs - The	APPROVED		
teacher understands how students differ in their approaches to			
learning and creates instructional opportunities that are			
adapted to students with diverse needs.			
Standard 4: Multiple Instructional Strategies - The teacher	APPROVED		
understands and uses a variety of instructional strategies to			
develop students' critical thinking, problem solving, and			
performance skills.			
Standard 8: Assessment of Student Learning - The teacher	APPROVED		
understands, uses, and interprets formal and informal			
assessment strategies to evaluate and advance student			
performance and to determine program effectiveness.			
Standard 10: Partnerships - The teacher interacts in a	APPROVED		
professional, effective manner with colleagues, parents, and			
other members of the community to support students'			
learning and well-being.			

PROGRAM: HEALTH			
STANDARD	RECOMMENDATION		
Standard 1: Knowledge of Subject Matter - The teacher	APPROVED		
understands the central concepts, tools of inquiry, and			
structures of the discipline taught and creates learning			
experiences that make these aspects of subject matter			
meaningful for students.			
Standard 5: Classroom Motivation and Management Skills -	APPROVED		
The teacher understands individual and group motivation and			
behavior and creates a learning environment that encourages			
positive social interaction, active engagement in			
learning, and self-motivation.			
Standard 6: Communication Skills - The teacher uses a	APPROVED		

variety of communication techniques to foster inquiry, collaboration, and supportive interaction in and beyond the classroom.	
Standard 7: Instructional Planning Skills - The teacher plans and prepares instruction based on knowledge of subject matter, students, the community, and curriculum goals.	APPROVED
Standard 9: Professional Commitment and Responsibility - The teacher is a reflective practitioner who demonstrates a commitment to professional standards and is continuously engaged in purposeful mastery of the art and science of teaching.	APPROVED

PROGRAM: PHYSICAL EDUCATION		
STANDARD	RECOMMENDATION	
Standard 1: Knowledge of Subject Matter - The teacher	APPROVED	
understands the central concepts, tools of inquiry, and		
structures of the discipline taught and creates learning		
experiences that make these aspects of subject matter		
meaningful for students.		
Standard 2: Knowledge of Human Development and	APPROVED	
Learning - The teacher understands how students learn and		
develop, and provides opportunities that support their		
intellectual, social, and personal development.		
Standard 3: Modifying instruction for Individual Needs - The	APPROVED	
teacher understands how students differ in their approaches to		
learning and creates instructional opportunities that are		
adapted to students with diverse needs and experiences.		
Standard 5: Classroom Motivation and Management Skills -	APPROVED	
The teacher understands individual and group motivation and		
behavior and creates a learning environment that encourages		
positive social interaction, active engagement in learning, and		
self-motivation.		
Standard 7: Instructional Planning Skills - The teacher plans	APPROVED	
and prepares instruction based on knowledge of subject		
matter, students, the community, and curriculum goals.		
Standard 8: Assessment of Student Learning - The teacher	APPROVED	
understands, uses, and interprets formal and informal		
assessment strategies to evaluate and advance student		
performance and to determine program effectiveness.		
Standard 11: Safety – The teacher provides for a safe	APPROVED	
learning environment.		

PROGRAM: VISUAL AND PERFORMING ARTS		
STANDARD	RECOMMENDATION	
Standard 1: Knowledge of Subject Matter - The teacher	APPROVED	
understands the central concepts, tools of inquiry, and		
structures of the discipline taught and creates learning		
experiences that make these aspects of subject matter		
meaningful for students.		
Standard 4: Multiple Instructional Strategies - The teacher	APPROVED	
understands and uses a variety of instructional strategies to		
develop students' critical thinking, problem solving, and		
performance skills.		
Standard 5: Classroom Motivation and Management Skills -	APPROVED	
The teacher understands individual and group motivation and		
behavior and creates a learning environment that encourages		
positive social interaction, active engagement in learning, and		
self-motivation.		
Standard 6: Communication Skills - The teacher uses a	APPROVED	
variety of communication techniques to foster inquiry,		
collaboration, and supportive interaction in and beyond the		
classroom (same as Core Rubrics).		
Standard 7: Instructional Planning Skills - The teacher plans	APPROVED	
and prepares instruction based on knowledge of subject		
matter, students, the community, and curriculum goals.		
Standard 8: Assessment of Student Learning - The teacher	APPROVED	
understands, uses, and interprets formal and informal		
assessment strategies to evaluate and advance student		
performance and to determine program effectiveness.		
Standard 9: Professional Commitment and Responsibility -	APPROVED	
The teacher is a reflective practitioner who demonstrates a		
commitment to professional standards and is continuously		
engaged in purposeful mastery of the art and science of		
teaching.		
Standard 10: Partnerships - The teacher interacts in a	APPROVED	
professional, effective manner with colleagues, parents, and		
other members of the community to support students'		
learning and well-being.		
Standard 11: Learning Environment - The teacher creates and	APPROVED	
manages a safe, productive learning environment.		

### **III. STANDARDS AND RELATED RUBRICS**

## A. IDAHO STANDARDS FOR TEACHERS OF FOREIGN LANGUAGE

Standard 1: Knowledge of Subject Matter - The teacher understands the central concepts, tools of inquiry, and structures of the discipline taught and creates learning experiences that make these aspects of subject matter meaningful for students.

Element	Unacceptable	Acceptable	Target
1.1 Understanding Subject Matter		Х	
1.2 Making Subject Matter Meaningful		Х	

**1.1** Course syllabi and textbooks, an interview with a cooperating teacher, Praxis II scores, teacher candidate files, and candidate work samples, provide evidence that teacher candidates demonstrate adequate understanding of state and national foreign language standards, language skills, and target cultures.

**1.2** Analysis of teacher lesson plans, interviews with university supervisors, candidate reflections related to their classroom instruction, and candidate work samples provide evidence that teacher candidates demonstrate an adequate ability to articulate the value of foreign language learning and to plan, create, and execute a language and cultural learning experience in the target language.

#### Areas of Improvement: None

Standard 2: Knowledge of Human Development and Learning - The teacher understands how students learn and develop, and provides opportunities that support their intellectual, social, and personal development.

Element	Unacceptable	Acceptable	Target
2.1 Understanding Human Development and Learning		Х	
2.2 Provide Opportunities for Development		Х	

**2.1** Course syllabi, dialogue journals, PRAXIS II results, booklets on self-exploration of literacy processes, and action research documents demonstrate teacher candidates'

adequate understanding of the process and acquisition of second language learning including viewing, listening, speaking, reading, and writing skills.

**2.2** An interview with a cooperating teacher regarding TPRS methodology and related candidate performance of its implementation, candidate work samples, course syllabi, performance evaluations by the cooperating and supervising teachers, and candidate reflections demonstrate an adequate ability to build upon native language skills with new, sequential, long-range, and continuous experiences in the target language.

#### Areas of Improvement: None

Standard 3: Adapting Instruction for Individual Needs - The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to students with diverse needs.

Element	Unacceptable	Acceptable	Target
3.1 Understanding of Individual Learning Needs		Х	
3.2 Accommodating		Х	
<b>Individual Learning Needs</b>			

**3.1** Course syllabi and textbooks, teacher candidate reflections and instructional units, support the university's conceptual framework demonstrating an adequate understanding of how the roles of gender, age, socioeconomic background, ethnicity, and other factors relate to individual perception of self and others.

**3.2** An interview with a cooperating teacher, teacher candidate work samples that include instructional units with lesson plans and student samples provide adequate evidence that teacher candidates demonstrate the ability to use resources and learning activities supporting instructional and curriculum goals that accurately reflect effective teaching practice and foreign language content.

#### Areas of Improvement: None

Standard 4: Multiple Instructional Strategies - The teacher understands and uses a variety of instructional strategies to develop students' critical thinking, problem solving, and performance skills.

Element	Unacceptable	Acceptable	Target
4.1 Understanding of multiple learning strategies		Х	
4.2 Application of multiple learning strategies		Х	

**4.1** Course syllabi, teacher candidate reflections, lesson plans and course artifacts such as the use of the SIOP model and graphic organizers provide evidence that teacher candidates demonstrate adequate understanding of how to use and adapt authentic materials for foreign language instruction.

**4.2** Analysis of lesson plans and their implementation based on interviews and teacher candidate reflections, action research reports along with teacher candidate work samples, and an interview with a cooperating teacher specific to TPRS methodology and its implementation provide evidence that teacher candidates demonstrate an adequate ability to use and adapt authentic materials for foreign language instruction.

#### Areas of Improvement: None

Standard 8: Assessment of Student Learning - The teacher understands, uses, and interprets formal and informal assessment strategies to evaluate and advance student performance and to determine program effectiveness.

Element	Unacceptable	Acceptable	Target
8.1 Assessment of Student Learning		Х	
8.2 Using and interpreting program and student assessment strategies		Х	

**8.1** Course syllabi, teacher candidate work samples, and sample student assessment results related to language skills demonstrate adequate understanding of ACTFL assessment guidelines and the need to assess progress in the five language skills, as well as cultural understanding.

**8.2** Teacher candidate instructional units containing lesson plans with specific assessments related to objectives, action research reports and teacher candidate reflections demonstrate an adequate ability to use formal and informal assessment techniques to enhance individual student competencies in foreign language learning and modify teaching and learning strategies.

#### Areas of Improvement: None

Standard 10: Partnerships - The teacher interacts in a professional, effective manner with colleagues, parents, and other members of the community to support students' learning and well-being.

Element	Unacceptable	Acceptable	Target
10.1 Interacting with Colleagues, Parents, and Community in Partnerships		Х	
10.2 Utilization of community resources		X	

**10.1** Teacher candidate reflections related to parent teacher conferences, checklists in file in the teacher candidate teaching guidelines, course syllabi –specifically EDUG 575 that requires a community project; ED 576 and 577 specific to their practicums, and EDUG 590 the Graduate Seminar, and conversations with the course instructor provide adequate evidence that teacher candidates are prepared to demonstrate adequate understanding of foreign language career and life opportunities available to foreign language students, opportunities to communicate in the language with native speakers, and to participate in community experiences related to the target culture.

**10.2** Teacher candidate work samples and lesson plans along with opportunities provided by the program to travel outside the United States to teach and candidate reflections provide evidence that teacher candidates demonstrate an adequate ability to provide learning opportunities about career awareness, communication in the target language, and cultural enrichment.

#### Areas of Improvement: None

#### **Recommended Action on All Foreign Language Standards:**

X Approved Approved Conditionally Not Approved

#### **B. IDAHO STANDARDS FOR TEACHERS OF HEALTH**

Standard 1: Knowledge of Subject Matter - The teacher understands the central concepts, tools of inquiry, and structures of the discipline taught and creates learning experiences that make these aspects of subject matter meaningful for students.

Element	Unacceptable	Acceptable	Target
1.1 Subject Matter and Structure of the Discipline		Х	
1.2 Making Subject Matter Meaningful		Х	

**1.1** Candidate, instructor, university supervisor interviews, work samples, and syllabi, and dispositions analysis provides evidence that teacher candidates demonstrate adequate understanding of health education; the importance of engaging students in identification of health risk behaviors and the ability to describe for students the ways new knowledge in a content area is applied.

**1.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicate the program provides evidence that teacher candidates adequately instruct the students about health-enhancing behaviors, recognize the importance of modeling health-enhancing behaviors, and create learning environments that respect and are sensitive to controversial health issues.

#### Areas of Improvement: None

Standard 5: Classroom Motivation and Management Skills - The teacher understands individual and group motivation and behavior and creates a learning environment that encourages positive social interaction, active engagement in learning, and selfmotivation.

Element	Unacceptable	Acceptable	Target
5.1 Understanding of Classroom Motivation and Management Skills		Х	
5.2 Creating, Managing, and Modifying for Safe and Positive Learning Environments		Х	

**5.1** Candidate and university supervisor interviews, work samples, and syllabi, and dispositions analysis provides evidence that teacher candidates demonstrate adequate understanding of the principles of and strategies for motivating students to participate in physical activity and other health-enhancing behaviors, and classroom management for safe physical activity and health-enhancing behaviors.

**5.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicate the program provides adequate evidence that teacher candidates demonstrate an adequate ability to introduce, manage, and promote, health-enhancing behaviors related to personal and social choices.

#### Areas of Improvement: None

**<u>Recommendations</u>**: Providing students with a wider range of research based applicable classroom management strategies will help to better prepare candidates for what they will face in an authentic classroom environment.

Standard 6: Communication Skills - The teacher uses a variety of communication techniques to foster inquiry, collaboration, and supportive interaction in and beyond the classroom.

Element	Unacceptable	Acceptable	Target
6.1 Communication Skills		Х	
6.2 Application of Thinking and Communication Skills		Х	

**6.1** Candidate and university supervisor interviews, work samples, and syllabi, and dispositions analysis indicates the program provides evidence that teacher candidates demonstrate an adequate understanding of how to model and use communication skills appropriate to the target audience and the terminology and slang associated with the atrisk behaviors

**6.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicate the program provides evidence that teacher candidates demonstrate an adequate ability to create safe and sensitive learning experiences that promote student input, communication, and listening skills which facilitate responsible decision making and alternatives to high-risk behavior.

#### Areas of Improvement: None

Standard 7: Instructional Planning Skills - The teacher plans and prepares instruction based on knowledge of subject matter, students, the community, and curriculum goals.

Element	Unacceptable	Acceptable	Target
7.1 Instructional Planning Skills in Connection with Knowledge of Subject Matter and Curriculum Goals		Х	
7.2 Instructional Planning Skills in Connection with Students' Needs and Community Contexts		Х	

7.1 Candidate and university supervisor interviews, work samples, and syllabi, and dispositions analysis indicate the program provides evidence that teacher candidates

demonstrate an adequate understanding of how to plan and prepare instruction based on knowledge of health education, students, the community, and curriculum goals.

**7.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicate the program provides evidence that teacher candidates demonstrate an adequate ability to plan and implement instruction reflective of current health research, trends, and local health policies compatible with community values and acceptable practices.

#### Areas of Improvement: None

Standard 9: Professional Commitment and Responsibility - The teacher is a reflective practitioner who demonstrates a commitment to professional standards and is continuously engaged in purposeful mastery of the art and science of teaching.

Element	Unacceptable	Acceptable	Target
9.1 Professional Commitment and Responsibility as Reflective Practitioners		Х	
9.2 Developing in the Art and Science of Teaching		Х	

**9.1** Candidate and university supervisor interviews, work samples, and syllabi, and dispositions analysis indicate the program provides evidence that teacher candidates demonstrate an adequate understanding of laws and codes specific to health education and health services to minors.

**9.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicate the program provides evidence that teacher candidates demonstrate an adequate ability to engage in appropriate intervention following the identification or disclosure of information of a sensitive nature and/or student involvement in a high-risk behavior.

#### Areas of Improvement: None

#### **Recommended Action on All Health Education Standards:**

X Approved Approved Conditionally Not Approved

## C. IDAHO STANDARS FOR TEACHERS OF PHYSICAL EDUCATION

Standard 1: Knowledge of Subject Matter - The teacher understands the central concepts, tools of inquiry, and structures of the discipline taught and creates learning experiences that make these aspects of subject matter meaningful for students.

Element	Unacceptable	Acceptable	Target
1.1 Subject Matter and Structure of the Discipline		Х	
1.2 Making Subject Matter Meaningful		Х	

**1.1** Candidate and university supervisor interviews, work samples, teacher candidate observations and syllabi, and dispositions analysis indicate the program provides evidence that teacher candidates demonstrate an adequate understanding of the components of physical fitness and their relationship to a healthy lifestyle; human anatomy and physiology (structure and function), exercise physiology appropriate rules, etiquette, instructional cues, and skills for physical education activities; adaptive physical education and how to work with special and diverse student needs; the sequencing of motor skills (K-12); opportunities for enjoyment, challenge, self-expression, and social interaction, and technology operations and concepts pertinent to physical activity.

**1.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicates the program provides evidence that teacher candidates demonstrate an adequate ability to create learning experiences that make physical education meaningful to students.

#### Areas of Improvement: None

Standard 2: Knowledge of Human Development and Learning - The teacher understands how students learn and develop, and provides opportunities that support their intellectual, social, and personal development.

Element	Unacceptable	Acceptable	Target
2.2 Provide Opportunities for Development		Х	

**2.2** Candidate and university supervisor interviews, classroom observations work samples, syllabi, and additional coursework and practicum analysis indicate the program provides evidence that teacher candidates demonstrate an adequate ability to assess the individual physical activity, movement, and fitness levels of students, make developmentally appropriate adaptations to instruction, and promote physical activities that contribute to good health.

### Areas of Improvement: None

Standard 3: Modifying instruction for Individual Needs - The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to students with diverse needs and experiences.

Element	Unacceptable	Acceptable	Target
3.2 Accommodating Individual		Х	
Learning Needs			

**3.2** Observing Physical education teacher candidates, analyzing teacher lesson plans, and interviewing university supervisors, and cooperating teachers indicate the program provides evidence that teacher candidates demonstrate an adequate ability to create opportunities that incorporate individual variations to movement and to help students gain physical competence and positive self-esteem.

### Areas of Improvement: None

Standard 5: Classroom Motivation and Management Skills - The teacher understands individual and group motivation and behavior and creates a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

Element	Unacceptable	Acceptable	Target
5.1 Understanding of Classroom Motivation and Management Skills		Х	
5.2 Creating, Managing, and Modifying for Safe and Positive Learning Environments		Х	

**5.1** Candidate and university supervisor interviews, work samples, teacher candidate observations and syllabi, and dispositions analysis indicate The program provides evidence that teacher candidates demonstrate an adequate understanding of how to help students cultivate responsible personal and social behaviors.

**5.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicate the program provides evidence that teacher candidates demonstrate an adequate ability to effectively manage physical activity in indoor and outdoor settings and promote positive peer relationships and appropriate motivational strategies for participation in physical activity.

## Areas of Improvement: None

Standard 7: Instructional Planning Skills - The teacher plans and prepares instruction based on knowledge of subject matter, students, the community, and curriculum goals.

Element	Unacceptable	Acceptable	Target
7.1 Instructional Planning Skills in Connection with Knowledge of Subject Matter and Curriculum Goals		Х	
7.2 Instructional Planning Skills in Connection with Students' Needs and Community Contexts		Х	

**7.1** Candidate and university supervisor interviews, work samples, teacher candidate observations and syllabi, and dispositions analysis indicate the program provides evidence that teacher candidates demonstrate an adequate understanding of strategies to maximize physical education activity time and student success in physical education and how to expand the curriculum through the use of community resources.

**7.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicate the program provides evidence that teacher candidates demonstrate an adequate ability to plan and prepare instruction to maximize physical education activity time and student success and to utilize community resources to expand the curriculum.

#### Areas of Improvement: None

Standard 8: Assessment of Student Learning - The teacher understands, uses, and interprets formal and informal assessment strategies to evaluate and advance student performance and to determine program effectiveness.

Element	Unacceptable	Acceptable	Target
8.1 Assessment of Student Learning		Х	
8.2 Using and Interpreting Program and Student Assessment Strategies		Х	

**8.1** Candidate and university supervisor interviews, work samples, teacher candidate observations and syllabi, and dispositions analysis indicate the program provides evidence that teacher candidates demonstrate an adequate understanding of how to select and use a variety of developmentally appropriate assessment techniques (e.g., authentic,

alternative, and traditional) congruent with physical education activity, movement, and fitness goals.

**8.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicate the program provides evidence that teacher candidates demonstrate an adequate ability to use a variety of developmentally appropriate assessment techniques (e.g., authentic, alternative, and traditional) congruent with physical education activity, movement, and fitness goals to evaluate student performance and determine program effectiveness.

#### Areas of Improvement: None

Standard 11.	Safety _ 7	The teacher	nrovides	for a sat	fo loarnina	onvironmont
Sianaara 11.	Sujery – 1	ine leacher	provides <sub>.</sub>	jor a saj	e ieurning	environmeni.

Element	Unacceptable	Acceptable	Target
11.1 Understanding of Student and Facility Safety		Х	
<b>11.2 Creating a Safe Learning Environment</b>		Х	

**11.1** Candidate and university supervisor interviews, work samples, teacher candidate observations and syllabi, and dispositions analysis indicate The program provides evidence that teacher candidates demonstrate an adequate understanding of CPR, first aid, and factors that influence safety in physical education activity settings and the supervision and response required.

**11.2** Candidate and university supervisor interviews, work samples, syllabi, and additional coursework and practicum analysis indicate The program provides evidence that teacher candidates demonstrate an adequate ability to provide and monitor for a safe learning environment and inform students of the risks associated with physical education activities.

#### Areas of Improvement: None

#### **Recommended Action on All Physical Education Standards:**

<u>X</u> Approved Approved Conditionally Not Approved
#### D. IDAHO STANDARDS FOR TEACHERS OF VISUAL AND PERFORMING ARTS

Standard 1: Knowledge of Subject Matter - The teacher understands the central concepts, tools of inquiry, and structures of the discipline taught and creates learning experiences that make these aspects of subject matter meaningful for students.

Element	Unacceptable	Acceptable	Target
1.1 Understanding Subject Matter		Х	
1.2 Making Subject Matter Meaningful		Х	

**1.1** Evaluations from cooperating teachers, a methods course syllabus, Praxis II scores, candidate transcripts, and documented candidate teacher work sample provide evidence that the teacher candidate demonstrates adequate knowledge of visual arts. Included are also documents demonstrating a candidate's organization of unit plans and lessons involving a knowledge of historical, critical, performance and aesthetic concepts, and expressive proficiency in a particular area of visual art.

**1.2** Interviewing the art teacher candidate, analyzing candidate teacher lesson plans, reviewing course syllabus, reviewing candidate teacher work sample, and interviewing the George Fox University supervisor provide evidence that teacher candidates demonstrate an adequate ability to help students create, understand, and participate in the traditional, popular, folk and contemporary arts as relevant to the students' interests and experiences and an ability to instruct students in interpreting and judging their own artworks, as well as the works of others.

#### Areas of Improvement: None

Standard 4: Multiple Instructional Strategies - The teacher understands and uses a variety of instructional strategies to develop students' critical thinking, problem solving, and performance skills.

Element	Unacceptable	Acceptable	Target
4.1 Understanding of Classroom Motivation and Management Skills		Х	

**4.1** Interview with supervising teacher, candidate teacher files, interview with candidate teacher, pre and post lesson assessments, MAT syllabi, and student work samples provide

evidence that the teacher candidates demonstrate adequate knowledge of visual arts and the ability to integrate kinesthetic learning into arts instruction.

#### Areas of Improvement: None

Standard 5: Classroom Motivation and Management Skills - The teacher understands individual and group motivation and behavior and creates a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

Element	Unacceptable	Acceptable	Target
5.1 Understanding of Classroom Motivation and Management Skills		Х	

**5.1** Interview with candidate teacher, methods course syllabus, checking student files/ transcripts, and reviewing candidate teacher work samples provide evidence that teacher candidates demonstrate adequate knowledge of visual arts, including the knowledge of integrating whole body learning into arts instruction. Lesson plans incorporate active engagement of the students in motivating them to engage in various project activities.

#### Areas of Improvement: None

Standard 6: Communication Skills - The teacher uses a variety of communication techniques to foster inquiry, collaboration, and supportive interaction in and beyond the classroom (same as Core Rubrics).

Element	Unacceptable	Acceptable	Target
6.1 Communication Skills		Х	
6.2 Application of Thinking		Х	
and Communication Skills			

**6.1** Interview with candidate teacher, reviewing candidate student files/transcripts, and reviewing candidate teacher work samples, including letters from school to parents, provide evidence that the teacher candidates demonstrate adequate knowledge of multiple communication techniques.

**6.2** Interviewing teacher candidate, analyzing teacher lesson plans, documentation in candidate teacher's work samples, course syllabus, and interview with GFU supervisor provides evidence that the teacher candidates demonstrate an adequate ability to use multiple communication strategies simultaneously in the arts classroom. These are

demonstrated in effective visual art lesson presentations, critiques/assessments, and parent communications in the candidate teacher work sample.

**Areas of Improvement:** It was noted that some teacher candidates' writing skills did not reflect graduate level ability. It is recommended that the program provide awareness at all levels regarding literacy proficiency (i.e., correspondence to parents, candidate reflections in work sample, etc.).

Standard 7: Instructional Planning Skills - The teacher plans and prepares instruction based on knowledge of subject matter, students, the community, and curriculum goals.

Element	Unacceptable	Acceptable	Target
7.1 Instructional Planning Skills in Connection with Knowledge of Subject Matter and Curriculum Goals		Х	

**7.1** Interview with George Fox University supervising teacher, Praxis II scores, checking candidate files/transcripts, and reviewing candidate teacher work samples provide evidence that teacher candidates demonstrate adequate knowledge of visual arts including the sequential, holistic, and cumulative processes using a variety of mediums/tools to communicate ideas through self expression.

#### Areas of Improvement: None

Standard 8: Assessment of Student Learning - The teacher understands, uses, and interprets formal and informal assessment strategies to evaluate and advance student performance and to determine program effectiveness.

Element	Unacceptable	Acceptable	Target
8.1 Assessment of Student Learning		Х	
8.2 Using and interpreting program and student assessment strategies		Х	

**8.1** Interview with GFU supervising teacher, checking student files/transcripts, interviewing teacher candidate, and reviewing candidate student work samples provide evidence that the teacher candidates demonstrate adequate knowledge of assessing students learning and creative processes of visual arts. These include, but are not limited to, the processes of class critiques, student rubrics, and self evaluations to monitor the success of student performance in a finished product.

**8.2** Interviewing George Fox University supervising teacher, analyzing candidate teacher lesson plans, and reviewing developed lessons from candidate teacher work samples provide evidence that the teacher candidates demonstrate an adequate ability to provide students with appropriate opportunities for displaying their artwork and assessing what they know and can do in visual art. Showcasing students' ability to produce art within curriculum goals and using effective teaching practices as shown in the candidate teacher's work sample accurately reflects visual arts content standards and strategies.

#### Areas of Improvement: None

Standard 9: Professional Commitment and Responsibility - The teacher is a reflective practitioner who demonstrates a commitment to professional standards and is continuously engaged in purposeful mastery of the art and science of teaching.

Element	Unacceptable	Acceptable	Target
9.1 Professional Commitment and Responsibility as Reflective Practitioners		Х	

**9.1** Interview with George Fox University supervising teacher, interview with teacher candidate, course syllabus, and reviewing candidate student work samples provide evidence that teacher candidates demonstrate the ability to make contributions to visual art disciplines.

#### Areas of Improvement: None

Standard 10: Partnerships - The teacher interacts in a professional, effective manner with colleagues, parents, and other members of the community to support students' learning and well-being.

Element	Unacceptable	Target	
10.1 Interacting in with Colleagues, Parents, and		Х	

**10.1** Reflections from cooperating teachers, interview with George Fox University supervisor, interview with teacher candidate, and reviewing candidate teacher work samples provide evidence that the teacher candidates demonstrate adequate knowledge of promoting the arts for the enhancement of the school and the community.

#### Areas of Improvement: None

# Standard 11: Learning Environment - The teacher creates and manages a safe, productive learning environment.

Element	Unacceptable	Acceptable	Target
11. Safe learning environment		Х	

**11.1** Interview with supervising teacher, checking student files and transcripts, reviewing course syllabus, and candidate teacher work samples provide evidence that the teacher candidate demonstrates an adequate ability to instruct students in procedures that are essential to safe arts activities, to manage the simultaneous daily activities of the arts classroom and to operate/manage performance and/or exhibit technologies safely.

#### Areas of Improvement: None

#### **Recommended Action on All Visual/Performing Arts Standards:**

<u>X</u> Approved

\_\_\_\_\_Approved Conditionally

\_\_\_\_Not Approved

# IV. INTERVIEWS AND PARTICIPANTS

Interviewee	Team	Location	Candidate	Faculty	Adjunct	Admin	Coop
Lonifor Williama	Cathy Manuall	CEU	Completer		Faculty		Teacher
Jenner winnams		GFU	V		Λ		
Berit Gann	Cathy Marsell	GFU	X				
Jamie Kellett	Randy	GFU	Х				
	Schrader, Lana						
	Elliott, Cathy						
	Mansell, Katie						
	Rhodenbaugh						
Hailey Seward	Randy	GFU					Х
	Schrader, Lana						
	Elliott, Cathy						
	Mansell, Katie						
	Rhodenbaugh						
Torin	Randy	GFU	Х				
Oberlindaeher	Schrader, Lana						
	Elliott, Cathy						
	Mansell, Katie						
	Rhodenbaugh						
Gary Wheeler	Randy	GFU					Х
-	Schrader, Lana						
	Elliott, Cathy						
	Mansell, Katie						
	Rhodenbaugh						
Josh Jensen	Randy	GFU	Х				
	Schrader, Lana						
	Elliott, Cathy						
	Mansell, Katie						
	Rhodenbaugh						
Kristin Dixon	Randy	GFU		Х			
	Schrader, Lana						
	Elliott, Cathy						
	Mansell, Katie						
	Rhodenbaugh						
Linda Samek	Randy	GFU				Х	
	Schrader, Lana						
	Elliott, Cathy						
	Mansell, Katie						
	Rhodenbaugh						
Terah Moore	Randy	GFU				Х	
	Schrader, Lana					-	
	Elliott, Cathy						
	Mansell Katie						
	Rhodenbaugh						
Claire Bledsoe	Lana Elliott	High					Х
		School					-

#### SUBJECT

Request by the Idaho Department of Correction's Robert Janss School for a waiver of IDAPA 08.02.03.105.01.c.

### APPLICABLE STATUTE, RULE, OR POLICY

IDAPA 08.02.01 - Section 001, Waivers

#### **BACKGROUND/DISCUSSION**

IDAPA 08.02.01.001, allows the State Board of Education to grant a waiver of any rule not required by state or federal law to any school district upon written request. The Robert Janss School, under the Department of Corrections, has requested a waiver of IDAPA 08.02.03.105.01.c which requires students to complete six science credits, four of which must be lab based sciences. The school is specifically asking for a waiver from the required lab based science courses that are required for high school graduation. They are asking that their students be allowed to graduate with six credits of science, all of which would be non lab based sciences. The Robert Janss School is located at the various adult prisons in Idaho which do not have any science labs and/or lab equipment. This is due to the fact that offender students are not allowed to use chemicals, knives, test tubes and other normal lab equipment within the prison. Students detained in the prisons are also not allowed to use the Internet which eliminates the possibility of accessing online courses.

#### ATTACHMENTS

Attachment 1 – Written request for waiver from Robert Janss School Page 3

#### **BOARD ACTION**

A motion to approve the request by the Department of Correction's Robert Janss School to waive on an ongoing basis IDAPA 08.02.03.105.01.c which requires lab based science requirements for students graduating from the school and to allow students at the school to graduate with six science credits, all of which will be non- lab based science courses.

Moved by \_\_\_\_\_ Seconded by \_\_\_\_\_ Carried Yes \_\_\_\_\_ No \_\_\_\_

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# IDAHO DEPARTMENT OF CORRECTION

"Protecting Yun and Your Community"

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February 3, 2010

Gail Cushman, Director of Education Robert Janss School Idaho Department of Correction 1299 North Orchard, Suite 110 Boise, Idaho 83706

Attn: Dr. Mike Rush

State Board of Education Box 83720 Boise, Idaho 83720

With this letter, I am requesting that the Robert Janss School, located within the Idaho Department of Correction, be allowed an exemption from the required science laboratory credits for high school graduation.

Upper level high school science classes are usually taught as biology, chemistry and physics and have a lab portion of the class that teaches students through practical hands-on experience. The Robert Janss School is located at the various adult prisons in Idaho which have no labs and/or lab equipment. Offender-students are not allowed to use chemicals, knives, test tubes and other normal lab equipment within the prison. They also are not allowed to use the Internet, so on-line classes are prohibited by our agency.

I request that the 6-credit science requirement for students who graduate from Robert Janss School be for non-lab science classes.

Thank you for considering this request.

Sincerely

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Gail Cushman Director of Education

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