STATE DEPARTMENT OF EDUCATION
AUGUST 26, 2020

SUBJECT

Developments in K-12 Education

BACKGROUND/DISCUSSION

Sherri Ybarra, Superintendent of Public Instruction, will share developments in K-12 Education with the Board, including:

- Grant Update
- Personal Protective Equipment Update
- Pandemic Electronic Benefit Transfer (P-EBT) Program
- National Pandemic Calls
- Additional Federal Stimulus (HEALS) Status
- New Superintendent Orientation

BOARD ACTION

This item is for informational purposes only.

SUBJECT

Hardship Status, Albion Elementary School

REFERENCE

June 2017	The Board received an update regarding Albion Elementary School and its continued need for hardship status.
June 2018	The Board received an update regarding Albion Elementary School and its continued need for hardship status.
June 2019	The Board received an update regarding Albion Elementary School and its continued need for hardship status.

APPLICABLE STATUTE, RULE, OR POLICY

Section 33-1003(2)(b), Idaho Code

BACKGROUND/DISCUSSION

At the October 1999 Board meeting, the State Board of Education (Board) approved the request by Cassia County School District #151 for Albion Elementary School to be designated as a hardship elementary school for one year and required an annual report thereafter. In 2000 the Legislature amended Section 33-1003(2)(b), Idaho Code, by adding, "An elementary school operating as a previously approved hardship elementary school shall continue to be considered as a separate attendance unit, unless the hardship status of the elementary school is rescinded by the state board of education." Therefore, no action is required unless the Board chooses to rescind the hardship status. Conditions supporting the October 1999 decision to approve the Albion Elementary School as a hardship elementary school have not changed.

IMPACT

Cassia County School District #151 would have received approximately $171,000 less in FY 2020 if Albion Elementary School was not considered a separate attendance unit for funding purposes.

ATTACHMENTS

Attachment 1 – Letter from Superintendent James Shank to Superintendent Ybarra dated June 16, 2020

STAFF COMMENTS AND RECOMMENDATIONS

Pursuant to Section 33-1003, Idaho Code, the State Board of Education is authorized to grant an elementary school(s) status as a separate attendance unit, for the purposes of calculating average daily attendance, when "special conditions exist warranting the retention of the school as a separate attendance unit and the retention results in a substantial increase in cost per pupil in average daily

attendance above the average cost per pupil in average daily attendance of the remainder of the district's elementary grade school pupils."

Average daily attendance (ADA) calculations are used to determine the number of support units a school district has, which then in turn affects the amount of funds the school district receives from the state for salary and benefit apportionment and discretionary funds. The ADA calculation is variable based on the number of students a school district has in a specific grade range. As an example, a school district with an elementary school with 170 students in ADA has an attendance divisor of 20, resulting in 8.5 support units and a hardship school with 18 students in ADA, has an attendance divisor of 12 resulting in 1.5 support units. The school district would then receive 10 support units for its elementary school students. Using this same example for a school district that does not have a hardship school, the district would have 188 students in ADA, with a divisor of 20 resulting in 9.4 support units for the school district's elementary students. At $28,090 (FY20 estimated statewide average distribution factor) per support unit, the school district in the first example would receive $238,765 while the school district in the second example would receive $42,135. These numbers are used for the purposes of providing an example and are not the numbers for any specific school district.

BOARD ACTION

This item is for informational purposes only.

CASSIA SCHOOL DISTRICT NO. 151

3650 OVERLAND AVE. • BURLEY, ID 83318-2444 • (208) 878-6600 • FAX (208) 878-4231

June 16, 2020

Ms. Sheri Ybarra
State Superintendent of Public Instruction
PO BOX 83720
Boise, ID 83720-0027

Dear Superintendent Ybarra,

In the October 1999 meeting of the State Board of Education it was noted that Albion Elementary School was granted a *hardship* status by the Board. As noted in the minutes of the State Board of Education this status was granted one year at a time. It was also identified that the State Superintendent be the person responsible to present this request annually to the Board through the SBOE agenda.

Please accept this letter from Cassia Joint School District #151 as a request for hardship status for Albion Elementary (School Number 111) for the 2020-2021 school year. The approval conditions granted by the State Board of Education at the time of the initial granting have not changed.

Thank you, and the State Board of Education, for your support of the children of Cassia County and Idaho. Please contact me if you need further information...

Please contact me if you need further information.

Sincerely,

James Shank, Ph.D.
Superintendent

PC: Tim Hill

STATE DEPARTMENT OF EDUCATION

SUBJECT
Minimum Instructional Hours Waiver

APPLICABLE STATUTE, RULE, OR POLICY
Section 33-512, Idaho Code
Idaho Administrative Code, IDAPA 08.02.01.250.

BACKGROUND/DISCUSSION
The COVID-19 pandemic resulted in the majority of Idaho school districts and charter schools not being able to meet the minimum instructional hours as required by section 33-512(1)(a), Idaho Code. Per section 33-512(1)(h), Idaho Code, *"The state board of education may grant a waiver of the minimum number of instructional hours for a school district when districtwide school closures are necessary as a result of natural occurrences creating unsafe conditions for students. A county or state disaster declaration must have been issued for one (1) or more of the counties in which the school district is located. A waiver request to the state board of education must describe the efforts by the school district to make up lost instructional hours, the range of grades impacted, and the number of hours the school district is requesting be waived."*

IMPACT
A waiver granted by the State Board of Education for minimum instructional hours will allow affected school districts and charter schools to be in compliance with state law.

ATTACHMENTS
Attachment 1 – Instructional Hours Waiver Spreadsheet

STAFF COMMENTS AND RECOMMENDATIONS
Pursuant to Section 33-512, Idaho Code, each school district shall annually adopt and implement a school calendar which provides its students at each grade level with the following minimum number of instructional hours:

Grades	Hours
9-12	990
4-8	900
1-3	810
K	450
Alternative Schools (any grades)	900

The minimum instructional hours requirement does not require the instructional hours be accomplished through in-person instruction. Like the existing virtual school programs, school districts and charter schools could meet the instructional

hours requirements through providing instruction remotely. Additionally, the requirement is specific to the hours of instruction provided by the school, not the attendance of any individual students. In a face-to-face instructional environment this is easily measured by the amount of class time scheduled. When working in a remote or virtual environment it is more difficult to measure the amount of instructional time is made available to students.

When school districts set their annual calendar each year, it is common for them to schedule more instructional hours than are needed to meet the minimum hours required in Section 33-512, Idaho Code. This allows them to be able to absorb unexpected school closures without having to extend the school year into the summer or extend school days. In response to the Coronavirus Pandemic, many school districts and charter schools closed schools for additional days around the spring break and closure of the physical building in order to help curb the spread of the virus. During this time period many school districts and charters schools used the extended building closures to plan and train for providing instruction remotely. When calculating the number of hours a school may need to make up, school districts have the option of counting the virtual or blended instruction they provided students during the soft closure. This allowed many school district to either make up the hours or limit the number of hours for which they needed to request a waiver. Additionally, the number of minimum hours required varies depending on the range of grades, ranging from 450 hours for half day kindergarten to 990 hours for high school grades. Due to the variation in the minimal instructional hours, a school district or charter school serving students across the grade range groups could provide an inconsistent number of instructional hours across the grades resulting in a variation in the number of hours needed per grade range or requiring waivers in some grade ranges and not others.

In all, 88 school districts and charter schools requested a waiver of a portion of the minimum required instructional hours. In reviewing the requests there is not consistency in which grades needed the fewest or most grade instructional hours waived. Requests range from 2 hours in grades 4 through grade 8 and secondary grades in the Coeur d' Alene Charter School to 321 hours for grade 9 through 12 in the Post Falls School District.

BOARD ACTION

I move to grant minimum instructional hours waivers pursuant to Section 33-512(1)(h), Idaho Code, to those school districts and charter schools and number of hours identified in Attachment 1.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

STATE DEPARTMENT OF EDUCATION
AUGUST 26, 2020

ATTACHMENT 1

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
2	58	Aberdeen School District	All teachers are required to be at school for calls and individual/virtual instruction from 8-12:00. Students can arrange times to meet (in class or on-line) with the teachers individually every day after noon. Curriculum is provided in packets every Monday for students/parents to pick up and returned the following Monday as they pick up for the upcoming week. The district adopted curriculum is being taught each day through Zoom, packets and Google classroom. Google classroom/hangouts is also being used to provide instruction and receive homework. Kindergarten teachers are in school to virtually work with students for 4 hours every day. It is difficult to identify how many hours of instruction teachers are providing. Some teachers are reporting being called in the evening to assist students with assignments.	PK-12	I am unsure. I believe students are receiving all instruction they would receive if they were in the classroom, however teachers are only REQUIRED to actually teach 4 hours per day. So with that in mind.. Kindergarten--all hours met Grades 1-3: 1.9 hours Grades 4-5: 2.13 hours Grades 6-12: 2.43 hours	1-3: 1.900 4-8: 2.310 9-11: 2.430 12: 2.430	Yes
3	491	Coeur d'Alene Charter School	The Coeur d'Alene Charter Academy transitioned directly to online education on March 16th due to the COVID-19 pandemic. We did not miss any instructional hours when all local schools went through at least a two week closure. The Transition was smooth and we are continuing online to the end of the semester. Our version of online is rigorous and graded just like our traditional in-person version. Due to the stress and rigor of this process our Board of Directors was concerned about burnout. They voted at our April meeting to end the school year on May 22nd.	6-12	By our calculations the 6th and 12th grade classes have the required instructional hours. However, it appears that our 7th-11th grade classes are just a little over 1 hour short. We are requesting that 2 hours be waived for those grades. In addition, we are requesting that 2 hours be waived for those grades. In addition, we are requesting that if our calculations are incorrect that the additional hours are waived.	4-8 (7th/8th grade): 2.000 9-11: 2.000	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
4	215	Fremont County Joint School District	Although the Fremont County Joint School District #215 has not been able to implement strategies to make up lost hours, we have minimized the loss of time and instruction through distance learning education. Our schools are providing students with a minimum of 4 hours of instruction each day, and we are committed to continuing to provide our students with educational opportunities throughout the soft closure. Even with these efforts, we will still fall short in the grade levels, identified in the spreadsheet.	Pre-K-12	ASHTON #105 HRS PER DAY YEAR TOTAL MIN HRS HRS OVER DAYS MISSED HRS MISSED HRS LEFT DAYS LEFT M-W-FRI KINDER 6.083 490.562 450.000 40.562 7.000 42.581 -2.019 -0.332 T-THUR-F KINDER 6.083 499.311 450.000 49.311 4.000 24.332 24.979 4.106 1ST-3RD 6.083 1006.372 810.000 196.372 9.000 54.747 141.625 23.282 4TH-5TH 6.083 1006.372 900.000 106.372 9.000 54.747 51.625 8.487 HFE 106 EVERY DAY KINDER 6 984.750 450.000 534.750 6.000 36.000 498.750 83.125 1ST-3RD 6 995.750 810.000 185.750 6.000 36.000 149.750 24.958 4TH 6 995.750 900.000 95.750 6.000 36.000 59.750 9.958 5th 6.167 1017.961 900.000 117.961 6.000 37.002 80.959 13.128 NFHS #501 6TH-8TH 6.5 1072.129 900.000 172.129 9.000 58.500 113.629 17.481 9TH-11TH 6.5 1072.129 990.000 82.129 9.000 58.500 23.629 3.635 12TH 6.5 1047.612 979.000 68.612 9.000 58.500 10.112 1.556 PARKER #103 EVERY DAY KINDER 4 667.000 450.000 217.000 6.000 24.000 193.000 48.250 1ST-3RD 5.583 927.968 810.000 117.968 6.000 33.498 84.470 15.130 4TH-5TH 5.583 927.968 900.000 27.968 6.000 33.498 -5.530 -0.991	4-8 (4-5): 5.530	Yes
7	414	Kimberly School District	Although the KSD #414 has not been able to implement strategies to make up lost hours, we have minimized the loss of time through distance education. Our schools are providing students with a minimum of 4 hours of instruction each day, and are committed to continuing to provide our students with educational opportunities throughout the soft closure. Even with these efforts, we will still fall short in the grade level identified.	Kindergarten	Kindergarten: 6.68 hours short	K: 6.680	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
8	41	St. Maries Joint School District	Adjusted Instructional Calendar days to the extent possible to make up days missed due to the COVID19 and Emergency Closures for Inclement Weather. All Grades except for Grade 12 in Building 0029 met the State Minimum Hours. In addition to adjusting the instructional calendar days to minimize the impact of loss of instructional hours, the District also provide learning packets to students as well as teachers were available to provide assistance to students remotely.	12	6.817 hours	12th: 6.817	Yes
10	494	Pocatello Community Charter School	PCCS had an unexpected loss of four days prior to spring break due to COVID. PCCS began online schooling and packets immediately after spring break.	Kindergarten	7	K: 7.000	Yes
12	182	Mackay Joint School District	Although the Mackay School District #182 has not been able to implement strategies to make up lost hours, we have minimized the loss of time through distance education. Our schools are providing students with a minimum of 4 hours of instruction each day, and are committed to continuing to provide our students with educational opportunities throughout the soft closure. Even with these efforts, we will still fall short in the grade levels identified above.	Kindergarten	Kindergarten: 9.5 hours	K: 9.500	Yes
13	243	Salmon River Joint School District	We were not able to make up the lost hours due to being in a "Soft Closure" due to Covid-19. In an effort to reduce the impact of the missed hours our teachers either provided online instruction or packets were sent home to students. The teachers were also available to the students and their parents by phone, email, or remotely by zoom or google connect.	12th	8.95 hours.	12th: 8.950	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
14	92	Swan Valley Elementary School District	Swan Valley School Districts feel they have done everything they can to implement strategies to ensure students experienced minimal loss of instruction time, however, the fact of the matter is that we cannot replace the classroom environment. We are very fortunate to have an iPad for every student. We took off four days from Tuesday March 17th to Friday March 20th to plan accordingly. Our spring break took place March 23rd to the 27th. We handed out iPads on Sunday March 29th and Monday March 30th and began online instruction on Monday March 30th which we have continued to do up to now. Our teachers meet with their students daily via Google Meet to ensure instruction takes place and communicate with all of our students and parents by phone, email, and/or text messages to ensure all students are doing well. We continue to take daily attendance for our students, and we continue to ensure our students progress in each respective curriculum which includes Math, ELA, Social Studies, Art, Science, Music, etc. Despite being committed to continuing to provide our students with educational opportunities throughout the soft closure, we feel we will still fall short and would like to submit this waiver on behalf of our district. During the soft closure, we began providing distance learning for all of our students starting Monday, March 30th. Our teachers began providing a full day of instruction t the best of their abilities from March 30th until now. If we continue with this through May 15th, we will be providing distance education, or "school-at-home", for 35 school days or 7 weeks.	4	As explained above, we are primarily worried about our 4th grade students having enough hours. We are requesting about 10 hours be waived for our 4th grade students.	4th: 10.000	
16	421	McCall-Donnelly School District	The McCall-Donnelly School District operates five (five) schools. After considering closure days and a daily reduction of one hour of instruction per grade level throughout the district, only one school fell below the state minimum requirements. All schools operated remote instruction with options for students to work within our Learning Management System (LMS), Schoology, or a more traditional "paper-pencil"/textbook approach. Extensive efforts were made by teachers to connect with students by phone, e-mail, home visits with social distancing, the lMS and the Microsoft Teams platform.	9-12	We request 13 hours to be waived for Heartland High School.	9-11: 13.000 12: 13.00	Yes
17	148	Grace Joint School District	We are continuing to offer all coursework either online or through instructional packets. We have maintained our original calendar throughout the soft closure beginning March 17th.	Pre-K-12	14 hours	K: 14.000 1-3: 14.000 4-8: 14.000 9-11: 14.000 12: 14.000	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
18	351	Oneida County School District	Due to the COVID 19, we were not able to reschedule lost hours. Grades k - 8 met and exceeded the minimum instructional hours for the school year. At our high school over half of our teachers were able to begin online instruction within three days - these classes met (and exceed) the minimum state requirements for our high school. There were some courses which required more preparation time to go online (and additional instructional three days). These courses failed to meet the minimum.	9-12	18 hours	9-11: 18.000 12: 18.000	Yes
23	559	Thomas Jefferson Charter School	•Teachers met with students two to three hours per week from the end of March until the third week of May. In those hours time was spent in Google Classroom either taking asynchronous notes, having online synchronous discussions or having one on one meetings via a personalize zoom link (these typically were grade checks, missing work checks and "overall how are the students doing" checks.) •Teachers used Google Classroom and Google Meets and were online during normal class times. •Teachers emailed each class by writing to each student individually and attached instructions and assignments therewith. •Attendance logs were compiled and maintained using participation in Google Classroom, Google Meets, Zoom and email communications. •Weekly discussion questions, editorials, assignments, quizzes, tests were posted to Google Classroom. Updates were posted, daily email communications and links to necessary materials where provided. •Teachers continued with regular class times meeting with kids via Zoom and Google Classroom. They met during regular class times throughout the remainder of the school year. Students completed all assignments and tests including AP exams in AP classes.	12	18	12th: 18.000	Yes
24	451	Victory Charter School	Students received homework packets on Monday and returned them Friday. Our teacher also prepared instructional videos for students to watch during distance learning and was available through email and by phone for student/parent support. Our kindergarten class was able to complete the entire year's curriculum through distance learning.	Kindergarten	2.45 hours for 7 days for a total of 19.25 hours.	K: 19.250	Yes
25	458	Liberty Charter School	To make up for the 17.15 hours the Liberty Charter School kindergarten students weren't in class because of COVID-19, all concepts and work missed was made up by packets and videos once students were participating in distance learning. The entire year's curriculum was taught to kindergarten students. The kindergarten teacher handed out packets on Monday, collected them on Friday and provided instructional videos and email and phone support to students and parents.	Kindergarten	2.75 hours for seven days for a total of 19.25 hours	K: 19.250	Yes
26	478	Legacy Charter School	Students received homework packets on Monday and returned them Friday. Our teacher also prepared instructional videos for students to watch during distance learning and was available through email and by phone for student/parent support. Our kindergarten class was able to complete the entire year's curriculum through distance learning.	Kindergarten	2.45 hours for 7 days for a total of 19.25 hours.	K: 19.250	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
27	21	Marsh Valley Joint School District	Our district took 10 non-instructional days during the soft closure period. All grades except 4-6 were able to achieve the minimum state hour requirement. Grades 4-6 received 873.5 hours but they are required to have 900 hours. April 14 instruction hours returned to normal hours. The efforts taken to minimize the loss of instructional hours, the teachers used the non-instructional hours to set up Google Classroom for on-line class time as well as re-create learning plans and prepare packets for their students to utilize once instructional time was re-established.	4-6	26.5 hours	4-8: 26.500	Yes
28	382	Rockland School District	We have shifted to online learning. Students were issued school laptops and received a few days training to ensure that they could use them effectively and to continue learning. The younger grades (K-5) also prepared materials to be sent home with grab and go lunches twice a week.	K-12	(K)=32 (1-3)=64 (4-8)=64 (9-11)=64 (12)=64	K: 32.000 1-3: 32.000 4-8: 32.000 9-11: 32.000 12: 32.000	Yes
30	454	Rolling Hills Charter School	We are continuing to do 4 hours of online instruction and learning activities in our Alternative Education Plan. We have teachers available to students and parents to support the learning. We have made home visits (with social distancing), personal phone contact, email contact, and texting with parents to try to get students to engage in the learning and overcome obstacles to access. Communication plan is to meet with each child daily online, email, or phone calls. Students and teachers meet and we are documenting engagement. Students are given feedback by the teachers regarding completed assignments. We have issued Chromebooks to all students so they have access. Zoom meetings with Special Education, Title I intervention, and ELL students for support with teachers and educational assistants. We Zoom with parents every two weeks as a school with administrators in "Tiger Talk" meetings. Parents utilize the school website www.rhpcs.org and teacher's Alternative Education Plan to meet the instructional needs of their child. We also have links to Oregon Public Television, padlets from I station, textbooks, and worksheet packets for families with no internet or don't want online access.	4-8	34.457 hours (grades 4-8)	4-8: 34.457	Yes
32	202	West Side Joint School District	First off, I tried to go back, the health department told me no. 33-512 needs to be modified… We integrated online learning into the school district in grades K-12. The district already had a 1:1 initiative, so it made the transition easy. Teachers were asked to produce lessons using various online platforms.	K-12	35	K: 35.000 1-3: 35.000 4-8: 35.000 9-11: 35.000 12: 35.000	Yes
33	135	Notus School District	Due to COVID-19, we were closed 3/18, 3/19, 3/30, 3/31, 4/1 and 4/2. On 4/6, we implemented remote learning classes for all grade levels. Again due to COVID-19, we were unable to return to a traditional educational setting.	12	41.500 hours	12th: 41.500	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
34	364	Pleasant Valley Elementary School Dist	Pleasant Valley Elementary School District #364 has provided distance learning packets for all students enrolled in Pleasant Valley School in grades K, 2, 3, 4, and 6 from March 30, 2020 through May 14, 2020. The instructional staff (teacher and aide) have been available, via telephone, for students and parents each school day during distance learning. The distance learning packets included an assignment sheet with four hours and fifteen minutes of assignments listed for the core subjects for each day of the school week. When all assignments had been completed, the parents were required to sign the assignment sheet and return it to the teacher with the completed work each Thursday and pick up new packets. Pleasant Valley School has been in session each day of the 2019-2020 school year per our SDE approved calendar. The students were physically present in school each day through March 19, 2020. March 23-26, 2020 Spring Break was observed. When the SBE closed schools due to the COVID-19 pandemic on March 23, 2020, Pleasant Valley School notified parents that distance learning would begin March 30, 2020 until further notice which has been until the end of the school year, May 14, 2020. 100% of the students have completed all assignments to date and we anticipate that will continue through the end of the week.	4, 6	Pleasant Valley Elementary School District #364 requests that the Idaho State Department of Education waive 41 hours of instructional minutes for Pleasant Valley School grades 4 and 6 for the 2019-2020 school year.	4-8: 41.000	Yes
36	532	Treasure Valley Classical Academy, Inc	TVCA established a structured plan for remote learning during the fourth quarter COVID-19 pandemic closure. This included 4 hours structured academic time per day for all grades K-6, consisting of: (1) synchronous "live" classroom time of 45-90 min depending on grade level, (2) two daily a synchronous lessons focused on literacy and numeracy per day, and (3) structured homework and reading time. More detailed information regarding TVCA's distributed learning plan can be found here: https://www.tvcacademy.org/wp-content/uploads/2020/05/TVCA-Distributed-Learning-Plan-3.25.20.pdf	K-6	We provide 909 hrs of instruction per school year for each grade level K-6. Our school year is 176 days long—we logged 130 normal days (5.2 hours of academic time per day) and 47 days (4.0 hours of academic time per day) using our distributed learning model during the 4th quarter pandemic closure. The total number of hours delivered to each grade level last year was 859, Thus, we have exceeded the hours required for K-3, but require a waiver for grades 4-6 for 41 hours per grade.	4-6: 41.000	Yes
37	480	STEM Charter	Remote learning. Take home and downloadable packets for K-4 students as well as 5-12th graders with no internet. Google classroom assignments for 5-12th grade students. Pre-recorded lessons on websites and google classroom, and live tutoring via Zoom for ALL students K-12.	K-12	42	K: 42.000 1-3: 42.000 4-8: 42.000 9-11: 42.000 12: 42.000	Yes
41	234	Bliss Joint School District	While we had no way to continue with actual instructional hours, each of our teachers sent homework packets each Monday for the week. Students returned packets at the end of each week and they were graded and added to averages already in the gradebook for the semester.	K-12	263.9 hours	K: 263.900 1-3: 263.900 4-8: 263.900 9-11: 263.900 12: 263.900	Yes
43	242	Cottonwood Joint School District	Class meetings, individual meet times, online work, and packets sent home each week. Packets are also picked up as well.	9-11, 12	Grades 9-11: Requesting 50.50 hours to be waived Grade 12: Requesting 50.99 hours to be waived	9-11: 50.500 12: 50.99	Yes
44	492	Anser Charter School	Anser closed for one week prior to spring break and began providing remote instruction immediately upon return after Spring Break.	1-8	Anser provided 846.33 hours of instruction. We are requesting that 53.67 hours be waived.	1-3: 53.67 4-8: 53.67	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
46	499	Future Public School, Inc.	During our period of March 30-May 22, 2020, we went into soft-closure mode due to COVID-19. During this time, classes met remotely for group lessons, engaged in online learning platforms like I-Station and Zearn, worked on physical learning paper packets, and met one-on-one with teachers via video conferencing software.	K-4	57	K: 57.000 1-3: 57.000 4: 57.000	Yes
49	283	Kendrick Joint School District	We are providing instruction remotely using online methods as well as hard copies when necessary. Each student has a Chromebook in which to complete school work.	9-12	70	9-11: 70.000 12: 70.000	Yes
50	287	Troy School District	Remote instruction - district utilized online learning, packets, and teachers were available to students remotely.	9-12	76	9-11: 76.000 12: 76.000	Yes
51	488	Syringa Mountain School Charter	We connected with all the students online after taking one day off. We made sure the students had access to printed materials. We have pick up times (7:30-8:30am & 5:30 - 6:30 pm) where parents can pick up printed materials for the week on Mondays. We have gotten musical instruments and art supplies out to families so students can observe both live and recorded lessons. We have made sure all students have access to computerized learning sites (IXL, RAZ Kids, MANO, etc.) and online learning. The staff have regular teaching hours on Zoom as well as office hours where both parents and children can connect via Zoom to discuss school related issues. We are in contact with all families and we have enrolled 2 new students during this period. While some parents report their children have more than enough material to keep them occupied and producing work, some report too much, and some parents report too little. We believe we may have enough hours to potentially meet the yearly instructional requirements, but we have no way of an accurately assessing, as each family is following the broad plan but adapting it to their own living situation.	K-8	When the Board submitted the calendar for the 2019-20 school year we had 980 instructional hours. We would like to waiver 80 of those hours just to be on the safe side. The Board agreed to submitting this waiver form at our Board meeting on 4//15/20 and I can send the minutes of that meeting if required. I did try calling the number listed above to discuss if I needed more details but received no answer. I figured you were busy, also. I'd be happy to drill down or provide other information.	K: 80.000 1-3: 80.000 4-8: 80.000	Yes
52	304	Kamiah Joint School District	We are doing remote learning, which includes packet of learning for grades K-5 and online learning for grades 6-12. Teachers are using Google Classroom, Google Meets, and other sources of online materials to deliver instruction. Elementary teachers are meeting with their students through Google meets to help provide instruction for the packets that are sent home weekly. Each teacher is required to meet with their students twice a week and keep a log of their contacts. Teachers are grading and keeping track of assignments turned in.	9-12	82.278	9-11: 82.278 12: 82.278	Yes
55	432	Cambridge Joint School District	We were not able to make up the loss of instructional time. We did have assignments that students worked on outside of our daily zoom class meetings, but I am unsure if that falls under the umbrella of "instructional hours." Our teachers ran 30 minute classes each day via Zoom to provide instruction.	9-12	88.5 hours	9-11: 88.500 12: 88.500	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
56	341	Lapwai School District	Lapwai Elementary and Middle-High School are both providing a combination of electronic and paper packet instructional delivery. Each student is provided differentiated materials based on their individual needs. Technology has also been provided when appropriate. We have made individual learning accommodations for students who lack internet access with paper learning packets. For those students already enrolled in some form of online learning, we provided laptops for those without technology. Teachers are providing materials and engaging students in hands-on experiential learning with paper packets, social media, YouTube Videos, and other creative approaches. We have teachers reading stories over Facebook live, guiding students through science experiments using YouTube, sharing work using Google Classroom, providing paper packets for students who need it, etc.	4-12	89.945 hours	4-8: 89.945 9-11: 89.945 12: 89.945	Does 89.450 represent the total number hours missed for each grade?
57	231	Gooding Joint School District	The school district is conducting remote learning virtually via Zoom, Google Meets, Google Classroom and packets are being sent home weekly for children with no internet capabilities. Teachers have office hours 4 hours per day and are contacting children individually.	K-12	101 hours. Dating April 1st - May 29th.	K: 101.000 1-3: 101.000 4-8: 101.000 9-11: 101.000 12: 101.000	Yes
58	292	South Lemhi School District	Beginning March 23, 2020, the South Lemhi District made the difficult decision to transition to online/packet learning for grades 7-12 and K-6 respectively. This decision to transition was made primarily because of the COVID-19 pandemic and as a result of the statewide stay at home order made by Governor Little. As a smaller district, the transition from classroom to home was easier than it would have been as a larger district but we were not without our problems. One specific problem was the reduction of educational hours from seven to four. We are sure that an enormous amount of time was spent by students to complete assignments which by default usually accompanies online learning but we felt that completing the "seven" hours of workload would have stressed not only the students but their parents so a choice was made to assign four hours.	K-12	102	1-3: 102.000 4-8: 102.000 9-11: 102.000 12: 102.000	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
60	253	West Jefferson School District	The district's teachers established remote learning criteria to be able to instruct students remotely during the soft-closure due to the coronavirus. Students were provided with both virtual assignments and learning packets. Systems of delivery were established for parents to pick up and drop off learning packets. For parents who were unable to pick packets up, the administration delivered the packets directly to the home of the student. Teachers would utilize online formats such as PowerSchool Unified Classroom, Google Classroom, and Zoom. Teachers would also make phone calls home to check in with students. The original calendar had one day over the period of the closure that was initially set up for in-service. This day was changed to provide remote learning for students. The district recognizes that remote learning cannot take the place of direct teaching and tracking instructional hours remotely can be difficult. The learning assignments given during remote learning were intended to equal 4 hours of instruction each day.	K-12	117.515	K: 117.515 1-3: 117.515 4-6: 117.515	Yes
61	111	Butte County School District	On March 16, 2020, the Butte County School District went to a soft closure. Online instruction and take-home packets were provided to students. Work equivalent to 4 hours a day was provided for the last 36 days of the school year.	K-12	The Butte County School District went to a soft closure on March 16, 2020. Teachers provided packets and online instruction for 36 four-hour days. We are requesting that the 144 instructional hours that were lost be waived. We are also requesting that all graduation and attendance requirements that were granted by the Idaho state Legislature be waived. Thank you.	K: 144.000 1-3: 144.000 4-8: 144.000 9-11: 144.000 12: 144.000	Yes
64	422	Cascade School District	The district is a K-12, 1:1 Chromebook supported school. We canceled school on march 23rd and began remote learning on March 25th. We used Google suite as our main learning platform including Google Classroom, Google meets, Google Calendar, Google Docs, Google Slides, etc. Students were required to check in remotely with their teachers every regularly scheduled school day and show engagement in the lessons by completing given work according to the standards-aligned curriculum - We averaged 91% attendance K-5 and 90% attendance 6-12. We continued to provide meals - breakfast and lunch. Those who were able to stop by the school picked up meals to go. Those who were too remote the school delivered via school bus. After going back through our file notes and recalculating the days out (and some 1st time confusion), I believe we calculated a normal school day to be 6.43 hours, took off 48 minutes for passing periods and lunch and came to the decision that each day out was equal to 6.43 hours. we took that time and multiplied it times 42 days = 270. After reviewing with you the intent being actual engagement time I believe the correct waiver hours should reflect 4 hours/day for 40 days = 160 hours K-12. Please make that adjustment for Cascade Schools K-12 Waiver.	K-12	160	K: 160.000 1-3: 160.000 4-8: 160.000 9-11: 160.000 12: 160.000	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
65	411	Twin Falls School District	Although the TFSD #411 has not been able to implement strategies to make up lost hours, we have minimized the loss of time through distance education. Our schools are providing students with a minimum of 4 hours of instruction each day, and are committed to continuing to provide our students with educational opportunities throughout the soft closure. Even with these efforts, we will still fall short in the grade levels identified above.	K, 4-5, Alt 6-8, 9-12, Alt 9-12	K AM/PM: -11.328 1-3: 73.749 4-5: -16.251 6-8: 42.254 Alt 6-8: -51.626 9-12: -51.052 12: -60.052 Alt 9-12: 2.499	K: 11.328 4-8 (Grades 4/5): -16.251 9-11: 51.052 12: 60.052	Yes
66	134	Middleton School District	The district provided online learning. Distributing/providing technology devices, as well as paper packet options for students to accomplish this. We calculated four hours of instruction for elementary and secondary students.	1-2, 6-8, 9-12 (regular high school, not alternative)	Grades 1-2 = 10.803 hours Grades 6-8 = 35.247 hours Grades 9-12 = 76.405 hours	1-3 (1-2): 10.803 4-8 (6-8): 35.247 9-11: 76.405 12: 76.405	Yes
69	413	Filer School District	Due to Covid19 we let out early March 17-20 for Spring break. We did not return and instead provided online instruction for the rest of the year. Previous to closing we had one snow day (January 14th). On May 18th we started providing online support, but no additional assignments so we counted those days as being closed. Due to Covid19 and community spread in Twin Falls County we are not able to make up the missed hours. Online instruction already produced reduction in hours per day. We were able to get through the instruction at the high school level and the majority of the middle school. However, at the elementary level we were not able to provide the same instruction as face to face. We are not able to make up these hours due to Covid19 without risking the health of the students and their families. Twin Falls County having the highest infection rate in the state. Below are the total hours we are short of meeting the requirement and we are asking to have these hours waived.	K-12	Hollister Elementary 1st – 3rd (6.7) hours 4th – 5th (96.7) hours Filer Elementary K - (53.7) hours 1st – 3rd (8.4) hours Filer Intermediate 4th – 5th (85.9) hours 6th (64.4) hours Filer Middle School 7th- 8th (85.9) hours Filer High School 9th – 11th (30.0) hours 12th (30.0)	K: 53.700 1-3: 7.550 4-8: 83.225 9-11: 30.000 12: 30.000	Yes
70	244	Mountain View School District	Due to COVID 19 our district school buildings were closed to students from March 18, 2020 through the end of the year. We indicated Emergency Closures on our ISEE calendars for March 18, 19, 20 and March 23-27, 2020. March 30-April 3, 2020 was our Spring Break. Starting April 6, 2020 online education began with all of our students district wide. We were able to take attendance for that entire time period and have submitted that attendance to the State Department of Education.	4-12th	Building 401 grades 9-11 please waive 40.970 hours of instruction, and grade 12 33.969 hours. Building 403 grades 9-11 please waive 7.695 hours of instruction, and grade 12 1.258 hours of instruction. Building 603 grades 4-8 please waive 3.312 hours of instruction. Thank you.	4-8: 3.312 9-11: 24.333 12: 17.614	Yes
71	25	Pocatello School District	Due to the timing of Covid illnesses spiking so close to the end of the school year, the district was unable to make up the lost instructional time, however, it took swift and effective action to begin providing distance learning options through a combination of paper packets and online instruction. As a result, the district was able to minimize the loss of instructional hours.	Kindergarten, 4-5	Kindergarten: 6.5 through 9 hours 4th Grade: 20 through 35 hours 5th Grade: 20 through 35 hours Detailed hours by grade and school are provided on the submitted form.	K: 7.750 4-8: 27.500	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
72	221	Emmett Joint School District	Went to a distance learning platform.	K-12	#105 AM KNDR -13 hrs,PM KNDR -13 hrs, Grades 1-4 -27.25 hrs #401 Grade 12 -15.9 hrs, Grade 9-11 -9.733 hrs #603 Grades 1-6 -13.617 hrs #492 Grades 3-12 -10.5 #106 Full Day KNDR B -5.25 hrs, Full Day KNDR A -10 hrs, Grades 1-5 -27.75	K: 13.000 1-3: 27.250 4-8: 17.923 9-11: 10.500 12: 10.500	Yes
75	71	Garden Valley School District	It was difficult with the distance learning to make up the hours during the calendar year, but we did offer students opportunities to improve their 4th quarter/distance learning grade by taking some additional coursework through PLATO and IDLA. I believe that the coursework/curriculum that our staff offered during distance was as vigorous or more so than regular brick and mortar instruction. We offered additional tutors, counseling, and individually assigned paras who checked in frequently with students to offer assistance if they were struggling with the distance learning. We only took 3 days off at the end of the year so that our staff would have an opportunity to all work together to have a plan in place for the start of school in August. We started distance learning the day we came back from spring break - our teachers prepared during spring break to offer immediate instruction rather than waiting a week or two to start our distance learning.	PK-5, 9-12	Garden Valley Elementary was still over the instructional requirement. Garden Valley Middle School was still over the instructional requirement. Garden Valley High School was short 11.2 hours. Lowman Elementary was short 20 hours. (There are only 8 students and one teacher. She doesn't have a prep so the school day is shorter. The students don't have specials to go to for the teacher to prep	K: 20.000 1-3: 20.000 9-12: 11.200	Yes
77	468	Idaho Science & Technology Charter School	ISTCS offered students a hybrid of online instruction and instructional materials sent home in packets that included reading materials, manipulatives, and worksheets. The school established a webpage (https://www.idahoscience.com/District/Portal/student-learning-at-home) to coordinate all online learning activities including google classrooms. Students were able to pick up learning packets at the school during regularly established lobby hours. Many students checked out chromebooks to access online learning materials. Teachers held regular Zoom meetings, established YouTube channels, used already established google classrooms, and regularly emailed students.	K-8	Kindergarten, 117 hours 1st-3rd grade, 211 hours 4th-8th grade, 238 hours	K: 117.000 1-3: 211.000 4-8: 238.000	Yes
82	401	Teton County School District	Due to COVID-19, online was implemented to continue instructional hours. Instructional hours have been reduced to 4 hrs/day and March 16-19, plus May 26-June 4 have been removed as instructional days.	K-12	Kinder - 3rd grade: 119 hours each grade 4th - 5th grade: 127 hours each grade 6th - 8th grade: 135 hours each grade Basin alternative school 9-12: 127 hours 9th -12th grade: 148 hours each grade	K: 119.000 1-3: 119.000 4-8: 131.000 9-11: 148.000 12: 148.000 Alternative: 127.000	Yes
83	55	Blackfoot School District	Educational materials were delivered to students through our "Bronco Bus Bites" program. We had buses delivering lunches and educational material on all routes to all grade levels through the end of the school year. We also had packets of educational materials available for pick-up by parents and students. Teachers delivered online instruction via video conferencing, emails, and web-based programs. Some educational materials were also sent through the US Postal Service to those who were not able to pick it up in person.	K-12	On the dates March 17 through June 4, the hours varied by school and grade level as reported on our SDE 2019-20 calendar. We request to waive all of the hours over those 49 school days. The minimum number of hours we are requesting to be waived for our kindergarten students is 135 hours, for grades 1-3 it is 208.5 hours, for grades 4-8 261.6 hours, and for grade 9-12 294.25. *Exact numbers of hours by building and grade level can be calculated as needed.	K: 135.000 1-3: 208.500 4-8:261.600 9-11: 294.250 12: 294.250	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
86	365	Bruneau-Grand View Joint School District	4.5 hours of on-line and packets worth of instruction each day.	6-12	6th -8Th Rimrock Jr. Sr. High School- 16.5 hours waive. 9th -11th Rimrock Jr. Sr. High School- 95.5 hours waive. 12th grade Rimrock Jr. Sr. High School-102.5 waive.	4-8: 16.500 9-11: 95.500 12: 102.500	Yes
88	473	Village Charter School	TVCS Staff worked to transition quickly to create as much continuity of learning for students when transitioning to distance learning. Staff took as little time as ossible to create the structures for delivering materials, communicating with families, and transitioning content to a new LMS. Staff worked with families to make adjustments to instructional materials to create a manageable workload for students. Teachers also made themselves available regularly to support learning and provide adjustments as families struggled to adapt to the sudden switch to distance learning.	K,4-8	16.7 hours for each our AM and PM Kindergarten 27.37 hours for grades 4 - 8	K: 16.700 4-8: 23.370	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
90	121	Camas County School District	Camas County School District began remote learning for grades K-12 on April 2, 2020 and continued until the last day of school on May 15, 2020. Our school district was able to deliver enough laptops and provide jet packs making sure all students were able to receive online instruction. Staff members keep track of attendance at Zoom meetings and logged hours in Google classroom and other computer programs.	4-5, 9-11, 12	12th Grade: Requesting waiver for 52.61 hours Required hours 979, Instructional Calendar hours approve - 1030.61 - 104.22 = (52.61) 8 emergency days= 50.66, 22 short days= 51.26, 4 short day = 2.32 TOTAL = 104.22 hours missed 9-11 Grades: Requesting waiver for 49.05 hours Required hours 990, Instructional Calendar hours approved - 1060.522 8 emergency days = 50.66, 27 short days = 62.91, short days = 6 TOTAL = 119.57 6-8 Grades: Requesting waiver for - (no waiver needed) Required hours 900, Instructional Calendar hours approve - 1060.522 8 emergency days = 50.66, 27 short days = 62.91, short days = 6 TOTAL = 119.57 4-5 Grades: Requesting waiver for 16.905 hours Required hours 900, Instructional Calendar hours approved - 992.791 8 emergency days = 48.80, 27 short days - 56.70, short days = 4.196 TOTAL = 109.696 1-3 Grades: Requested waiver for (no waiver needed) Required hours 810, Instructional Calendar hours approved - 992.791 8 emergency days = 48.80, 27 short days - 56.70, 4 short days - 4.196 TOTAL = 109.70 Kindergarten: Requested Waiver for (no waiver needed)	4-8 (4-5): 16.905 9-11: 49.050 12: 56.210	Yes
91	271	Coeur d'Alene School District	Emergency learning was a challenge to implement in a uniform fashion. It was because hours of instruction per individual classroom would vary, we opted to consider our district closed for reporting purposes. In reality, emergency remote learning was implemented. All students in need were given access to a Chromebook and hotspot internet access was provided to students in need. Teachers were conducting zoom meetings, checking in with students, and providing instruction to the best of their and their students' abilities.	K-12	AM Half Day K 140 PM Half Day K 134.75 Full Day K - 3rd 256.5 4-5 269 6-8 279 9-12 CHS 296 9-12 LCHS 300.08 9-12 Alternative 287	K: 177.083 4-8: 275.00 9-11: 298.040 12: 298.040 Alternative: 287	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
94	273	Post Falls School District	The Post Falls School district grades K-12 prepared packet pick ups of instructional materials for students to complete. In addition to subject packet pick up, the Post Falls School District made available online learning opportunities to all students. For those students who did not have chrome books or a PC in the home, the PFSD made available chrome books for pick up. Teachers were available online and or accessible via phone for questions. For the before and after school program, provided a venue for kids to complete their homework either via the packet and or use of chrome books and online. Special Education staff and program services reached out to parents and children in an effort to provide SPED related activities to assist children and families. For families who didn't have the ability to pick up materials, the PFSD delivered the materials to their homes. The PFSD worked with SPECTRUM services to provide for low income families free internet connectivity. Special outreach was done via YouTube to read to children, and to stay connected. Teachers would reach directly to their students and check in on their progress, and answer any questions the child had with their assignment. The PFSD required teachers to identify contact with their students, and determine progress each week. Link to materials online materials were posted on the PFSD website.	K-12	March 16 - End of School Full day K-3 = 258.30 K AM = 149.32 K PM = 137.5 4-5 = 284.28 6-8 = 285.21 9-12 = 321.19 Alt School = 312.51	K: 181.707 4-8: 284.745 9-11: 321.19 12th: 321.19 Alternative: 312.51	Yes
97	483	Chief Tahgee Elementary Academy	Chief Tahgee Elementary Academy sent 2 hours of homework packets per day from March 18, 2020 through April 30, 2020. At that time, all students were provided 2.5 hours of online virtual instruction and 1.5 hours of homework packets. 792 total hours were offered to all students K-7.	1-3, 4-7	Grades 1-3 were short 18 hours. Grades 4-7 were short 108 hours. CTEA is requesting these hours to be waived, for the grades listed.	1-3: 18.000 4-8 (Grades 4-7): 108.000	Yes
100	418	Murtaugh School District	The District has coordinated efforts to provide 4 hours of digital instruction a day to approximately 95% of students by providing devices and internet access to students with direct contact to teachers daily. Remaining students are given packets to complete.	4-5, 9-12	The district is requesting 2.5 hours waived for 4-5 grade. The district is requesting 50.5 hours for 9-11 grade. The district is requesting 63.5 hours for 12 grade.	4-8 (Grades 4/5): 2.500 9-11: 50.500 12: 63.500	Yes
103	252	Ririe Joint School District	On March 18, the Ririe School district closed all schools as a result of the COVID-19 pandemic. The following week, March 23-27, was our scheduled spring break. Our schools remained closed on March 30, 31, and April 1 for teachers to prepare for an online education delivery system. Beginning on April 2, classes resumed online and through packets. Teachers presented material through Google Meets, email, and phone calls. Take home packets were available for students without internet access. Office personnel and paraprofessionals made phone calls checking on students, resolving concerns, and providing support for the remainder of the school year. Teachers were encouraged to provide enough instruction and work to keep students busy for four and a half hours a day. We continued online education throughout the remainder of the trimester. At the end of the trimester, students were issued letter grades, but remediation will be available in the 2020-2021 school year.	4-8, 9-12	The following numbers are based on the fact that our students were engaged in educational activities for 4 1/2 hours per day. Grades 9-12 - 87.5 hours Grades 7-8 - 25.74 hours Grades 4-6 - 16.86 hours	4-8: 20.412 9-11: 87.500 12: 87.500	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
104	3	Kuna Joint School District	We went online with all grades after the closure.	1-12	K - none 1-3 - 21 hours 4-6 - 23.5 hours 7-12 - 23.5 hours	1-3: 21.000 4-8: 23.500 9-11: 23.500 12: 23.500	Yes
106	477	Blackfoot Charter Community Learning Center	March 17, 18, and 19 students were not able to attend classes due to the Covid-19 Pandemic. Teachers used this time to create paper packets and online lessons for the students. Students were then given packets and instructions for online learning on March 30, after the regularly scheduled spring break. All students have been participating in online and paper packet instruction since March 30. The school had previously scheduled a field trip/make up day in May, but have been unable to complete that day as the parks are closed and the stay at home order has been effect.	K-8	BCCLC is requesting that 21 hours be waived for all grades except grade 4. We are requesting that 28 hours be waived for fourth grade.	K: 21.000 1-3: 21.000 4: 28.000 5-8: 21.000	Yes
107	322	Sugar-Salem Joint School District	We had some students exposed in two of our buildings during the week of March 9-13. We received this word on March 16. On March 18, we began delivering our instruction online. We feel like we have made every effort to be responsive to this situation. The other side of the coin is that our parents have been increasingly burdened since that day. We just took our regularly scheduled spring break off this past week. It was a blessing for them. We have decided to conclude our online delivery system on May 22. This will give us nearly 9 weeks of school-at-home. We have two more weeks scheduled in our regular calendar, however. We feel that we need this time to meet with students individually, face to face, to fill holes and gaps that this situation has created for us. So some students will actually have very little instructional time lost, but will certainly have lost out on the full educational opportunity. We will conclude online delivery on May 22, which will be 9 days of instruction short of our scheduled calendar. In reality, I expect that teachers will have a great deal of contact with their students in those 9 days. We will apply for a waiver of that time, however, I am still convinced that an argument could be made that it is unnecessary, as we will be having educational contact with each student during that time.	K-12	Kindergarten: 21.5 hours Grade 1-3: 39.98 Grade 4-6: 43.56 Grade 7-12: 48.19	K: 21.500 1-3: 39.980 4-8: 45.875 9-11: 48.190 12: 48.190	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
111	475	Sage International Charter School	The Board of Directors voted to close Sage International's (Sage) campus on March 15, 2020 due to COVID-19. Sage began providing distance learning for all students K-12th on March 16, 2020. Sage will continue with distance learning through the end of Sage's school year on June 11, 2020, resulting in 46 days of distance learning. Sage's distance learning program applies to all grades K-12. For K-5th grades, the distance learning program includes the use of electronic and/or paper lesson packets (available for pickup), regular email communication, scheduled Zoom time and conferences, and IStation. 5th grade also utilizes google classroom. 6th-10th grades utilize our student coursework management system - 'Managbac', Flipgrid, zoom classes and conferences, google classroom, and email communication. 11th and 12th distance learning utilizes grades Managbac, Flipgrid, zoom classes and conferences, GoToMeeting and email/telephone communication. Student workload during distance learning (asynchronous and synchronous) is designed to provide daily instruction as follows: K = 3 hrs/day. 1st-5th = 4 hrs/day. 6th-8th = 4 hrs/day. 9th-10th = 5 hrs/day. 11th-12th = 6 hrs/day.	K-12	Based on the above, Sage is requesting the following: 4th-5th: A waiver of 74 instructional hours. 6th-8th: A waiver of 13 instructional hours. 9th-10th: A waiver of 58 instructional hours. 11th: A waiver of 12 hours. 12th: A waiver of 96 hours.	4-8: 21.750 9-11: 35.000 12: 96.000	Yes
112	2	West Ada School District	Began remote learning for traditional and modified schools on April 13, 2020. Changed April 10 from a no school day for modified schools to a remote learning day, April 14 from a no school day for grades 9-10/grade 11 SAT/grade 12 senior project day to a remote learning day, April 27, 2020, from a no school collaboration day to a remote learning day, June 1/June2/June 12 from early release days to remote learning days.	K-12	TRADITIONAL KINDER AM/KINDER PM 28.114 TRADITIONAL 1-5 69.040 CHRISTINE DONNELL ARTS 1-6 69.040 MIDDLE SCHOOL 6-8 72.918 GALILEO 6-8 65.984 HIGH SCHOOL 9-10 100.791 HIGH SCHOOL 11 100.791 HIGH SCHOOL 12 117.792 RENAISSANCE HIGH SCHOOL 9-11 134.179 RENAISSANCE HIGH SCHOOL 12 135.178 ALTERNATIVE HIGH SCHOOL 9-10 42.150 ALTERNATIVE HIGH SCHOOL 11 42.150 ALTERNATIVE HIGH SCHOOL 12 70.150 IDAHO FINE ARTS ACADEMY 6-8 10.500 IDAHO FINE ARTS ACADEMY 9-10 100.500 IDAHO FINE ARTS ACADEMY 11 100.500 IDAHO FINE ARTS ACADEMY 12 117.500 CROSSROADS 6-8 58.900 PATHWAYS 6-8 92.716 MODIFIED KINDER AM/KINDER PM 16.213 MODIFIED 1-5 53.789	K: 22.164 1-3: 61.415 4-8: 175.144 9-11: 143.619 12: 94.991 Alternative: 51.483	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
113	132	Caldwell School District	The Districted provided grade appropriate instructional materials to parents/students for learning opportunities throughout the closure. The District provided grade appropriate instructional materials in the form of Emergency Learning Packets to students at all grade levels. Teachers provided weekly support through contacting students and parents during virtual classroom hours. There were learning opportunities through Google meet sessions. Emergency Learning Packets were distributed bi-weekly through the months of March, April and May. In addition, CTE teachers met with small groups of students allowing them to complete projects.	K-12	K=239.5/1-3=239.5/4-5=239.5/6-8=257.85/9-11=260.05/12=236.68 Alternative 6-12=274.21	K: 239.500 1-3: 239.500 4-8: 250.510 9-11: 260.050 12: 236.680 Alternative: 274.210	Yes
115	52	Snake River School District	We met the instructional hours required through delivery of online instruction and of instructional packets beginning March 18 through the end of the school year, but had no method of tracking participation. Return of homework assignments was required to receive a grade. Grades 7-12 participated in Google Classroom. Grades K-6 had bi-weekly homework packets.	1-12	Instructional Hours to be waived due to non-attendance: Grade 1: 231.784 Grades 2-3: 224 Grade 4: 259.198 Grades 5-6: 260.703 Grades 7-8: 206 Grades 9-11: 274 Grade 12: 285	1-3: 227.892 4-8: 241.967 9-11: 274.000 12: 285.000	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
125	456	Falcon Ridge Charter School	This writing is to serve as request of waiver relating to required instructional hours per Idaho Code 33-512a. Threat of the Novel Coronavirus, moved Falcon Ridge to institute school closure from 3/17/2020-3/20/2020. On 3/23/2020, the Idaho State Board of Education directed Idaho school districts and charters to observe "soft closure" status through 4/202020. On 3/25/2020, Governor Little issued statewide stay-at-home order and declaration of extreme emergency. On 4/6/2020, the Idaho State Board of Education directed that all Idaho school districts and charters observe "soft closure" for the remainder of the 2019/2020 school year. The above actions have significantly hindered the ability of the Falcon Ridge Public Charter School from fulfilling the required instructional hours as set forth in Idaho code. The Falcon Ridge Public Charter School commenced the emergency delivery of online instruction on 3/30/2020. To date, the average daily attendance during the delivery of emergency online instruction is 99.53%. Falcon Ridge is scheduled to continue this mode of instruction for the remainder of the calendar school year (5/22/2020). The emergency delivery of online instruction is serving both to continue the educational process for our students and as a significant effort toward fulfilling the statutory obligation for instructional hours. The chart below indicates the calculation of instructional hours that will be achieved by the end of our calendar school year and the total hours being requested for the waiver.	K-8	Hours Required # Hours Completed #Hours for Waiver 6th-8th grades 900 840 (93%) 60 (-7%) 4th-5th grades 900 846 (94%) 54 (-6%) 1st-3rd grades 810 786 (97%) 24 (-3%) Kindergarten 450 425 (94%) 25 (-6%)	K: 25 1-3: 24 4-8: 60	

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
128	321	Madison School District	On March 18, 2020 Madison School District closed all schools as a result of the COVID-19 pandemic. From March 18th through March 24th our teachers immediately began to prepare for remote instruction in case we were not able to resume class in person. Teachers prepared packets which would be available for students to pick up to work on at home, and prepared online delivery to students through Unified Classroom, Google Meets, Zoom, email, and phone calls with parents. Teachers prepared instruction and work to keep students busy for at least four hours a day. Spring Break was expanded by four days from the schedule break of April 3rd & 6th to a break of March 30th thru April 6th. Unfortunately, due to COVID-19 our students were not able to return to school and were required to receive instruction at home from April 7th for the rest of the school year through May 22nd which was the last day of school on our original calendar. Under the direction of our administrators, our teachers, paras and staff diligently contacted students and helped and encouraged them in their studies and home. Google Meets and Zoom were used often to meet with students online to provide instruction. For older students Unified Classroom was used to provide assignments and provide regular communication. Our Special Ed teachers provided the opportunity for parents to bring in their special needs students so that they could receive individual instruction from their teachers. Every effort was made to meet the needs of our special needs students.	Kindergarten, 5-12, Alternative 10-12,	Grade alternative 10-12 – 70.042 hours Grade 10-12 – 106.39 hours Grade 9 – 92.522 hours Grade 7-8 – 2.522 hours Grade 6 – 81.057 hours Grade 5 – 86.735 hours Grade Kindergarten – 27.893 hours	K: 27.893 4-8: 56.771 9-11: 101.767 12: 101.767 Alternative: 70.042	Yes
129	282	Genesee Joint School District	1) We moved to online/virtual instruction beginning April 6th. We will continue this through the end of our calendar year. (Planning on average of 4 hours instruction daily). 2) Eliminated remaining Professional Development days in calendar - moved to instructional days, so instruction will be continued to be provided on those additional days (April 17, May 8, and May 15).	1-12	We are requesting the waiving of 28 hours for grades 1-6; 81 hours for grades 7-11, and 70 hours for our seniors.	1-3: 28.00 4-8: 49.200 9-11: 81.000 12: 70.000	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
130	61	Blaine County School District	The District has been able to deploy Chromebooks to students in grades K to 12 for the purposes of receiving instruction and learning opportunities from their teachers at a distance. However, 180 students (140 families) of our approximately 3,400 students are known to not have Internet connectivity at their homes. We are still working to connect with the last of our students and anticipate the number of students without connectivity will grow. We are working relentlessly with area providers in an attempt to connect them via: 1) using school buses outfitted with cradle points to broadcast WiFi in key locations where we have clusters of students without connectivity, 2) providing Verizon hotspots (we are currently only able to obtain a limited number.) to students with priority being students enrolled in Dual Credit classes, 3) connecting students through the Cox2Compete program from Cox Communications (Cox services are not available district wide, and 4) seeking funds from a private foundation to connect students with additional hotspots or via satellite connections. In addition, we have had a local landlord provide broadband access for up to 100 students living in his complex at no cost to the families or the District for the rest of the school year.	4-12	Alturas/Bellevue/Hailey/Hemingway (1-3): +17 hours Alturas/Bellevue/Hailey/Hemingway (4 and 5): -73 hours Carey (1-3): +18.6 hours Carey (4): -40.7 hours Carey (5 and 6): -10 hours Hemingway (6-8): -29.75 hours WRMS: -18.6 hours Carey (7 and 8): +14 hours WRHS (9-12): -113.7 hours Carey (9-11): -75.83 hours Carey (12): -43.33 hours SCHS: -62.25 hours	4-8: 28.140 9-11: 83.927 12: 73.093	Yes
132	136	Melba Joint School District	School was cancelled for students on March 18-19 in order to provide teachers the instruction and time to prepare to move to an online/remote teaching platform. March 23-26 was our regularly scheduled Spring Break. Beginning on March 30 all students were provided 4 hours of instruction via online or packet instruction. While this instruction is not of the same quality as actual face to face instruction within the classroom, teachers maintained contact with students throughout the final quarter of the school year. Assignments were collected and graded.	K-12	The Melba Joint School District is asking for the following instructional hours to be waived: K = 0 hours 1-3 = 0 hours 4 - 6 = 31 hours 7-8 = 0 hours 9-12 = 64 hours	4-8 (4-6): 31.000 9-11: 64.000 12: 64.000	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
135	455	COMPASS Charter School	During the COVID-19 school closure, March 17-20 and April 6-May 29 (scheduled spring break was March 23-April 3), 44 instructional days, we made every effort to hold students accountable to a 4 hour day minimum of home learning. During the COVID-19 school closure, March 17-2- and April 6-May 29 9scheduled spring break was March 23-April 3), 44 instructional days, we made every effort to hold students accountable to a 4 hour day minimum (2 hours for 1/2 day Kindergarten) of home learning. This was a difficult task for K-8 students as we do not have a true online learning platform. Our Board of Directors voted to end the school year early, May 15, for grades K-8. This allowed us to have a modified/limited re-opening for students who were not successfully completing home learning expectations. We used the two week period from May 18-May 29 to provide intervention for those students.	K-8/9-12	According to our 9-12 Instructional Calendar our daily hours of instruction prior to closing = 6.167. These hours were reduced to 4 hours of daily instruction for 44 days. This is a difference of 95.348 hours. Therefore, we are requesting that 95.348 hours be waived from our 9-12 Instructional Calendar for 2019-2020. The original 6-8 Instructional Calendar hours were 6.0 x 44 day = 264. Reduced to 4.0 x 34 = 136. This is a difference of 128 hours to be waived. The original 1-5 Instructional Calendar hours were 5.833 x 44 days = 256.65. Reduced to 4.0 x 34 = 136. This is a difference of 120.65 hours to be waived. The original K Instructional Calendar hours were 2.75 x 44 days = 121. Reduced to 2.0 x 34 = 68. This is a difference of 53 hours to be waived.	K: 53.000 1-3: 120.650 4-8: 124.325 9-11: 95.348 12: 95.348	Yes
138	528	Forge International	The Board of Directors voted to close Forge International's (Forge) campus effective March 15, 2020 due to COVID-19. Forge began providing distance learning for all students on March 30, 2020. Distance learning will continue through the end or our school year on June 11, 2020, resulting in 42 days of distance learning. Forge's distance learning program for all grades K-5 encompasses the use of Zoom for: daily whole-school announcements/pledge/assembly, daily classroom community meetings, weekly 1:1 meetings w/ students, and small group intervention/work. The distance learning plan also encompasses the use of: Moby ax; Khan Academy; Seesaw; Google Classroom; paper packets; and inquiry research projects. Forge's distance learning program is designed to provide the following amount of daily instruction: (1) Kindergarten - 3 hours - 1.5 hours of direct instruction/contact; 1.5 hours of independent learning; (2) 1st-3rd Grades - 4 hours - 2 hours of direct instruction/contact; 2 hours of independent learning; and (3) 4th - 5th Grades - 5 hours - 2.5 hours of direct instruction/contact; 2.5 hours of independent learning.	K-5	Based on the above, Forge is requesting the following: 1st - 3rd: A waiver of 32 instructional hours. 4th-5th: A waiver of 56 instructional hours.	1-3: 32.000 4-8 (4th/5th): 56.000	Yes
140	465	North Valley Academy	We changed any days off in April and May and continued to have instructional time. We required students a minimum of 4 hours, but teachers were working and teaching from 8 to 4 and most students logged 6 to 8 hours. We are airing on the side of caution submitting only the 4 hours per day. Therefore our grades 7 through 12 do not meet enough hours I believe.	7-11, 12	Grades 7-11 are short 41 hours Grade 12 is short 34 hours	9-11: 41.000 12: 34.000	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
144	93	Bonneville Joint School District	On March 23, 2020, the State Board of Education directed all school districts to implement a soft closure of schools until April 20, 2020. On April 6, 2020, the State Board of Education extended the soft closure of schools to the end of the school year. These actions resulted in a loss of between 132.3 instructional hours in kindergarten and 304.633 instructional hours in 9th – 12th grade for Bonneville School District. To make up some of that lost instructional time, our Board adopted a resolution to implement competency-based learning pursuant to Idaho Code 33-1632 which states that “mastery-based education where students progress as they demonstrate mastery of a subject or grade level is in the best interest of students.” To that end, our teachers focused on essential outcomes for each course and subject and worked to ensure that all students were able to demonstrate proficiency on those outcomes. Teachers worked to provide students with 2 to 4 hours of instruction every day online using Google Classroom and Google Meet as well as other online learning resources including Lexia, Imagine Math, and other digital curricular resources. These efforts resulted in making up between 100 and 200 hours of the lost instructional time depending on students’ grade level, subject area, and teacher expectations.	K-12	K AM: 61.200 K PM: 63.200 1st - 3rd: 40.700 4th-6th: 117.300 7th-8th: 67.000 9th: 159.300 10th: 159.300 11th: 159.300 12th: 170.100 Alternative: 78.300	K: 62.200 1-3: 40.700 4-8: 97.180 9-11: 159.300 12: 170.100 Alternative: 78.300	Yes
146	139	Vallivue School District	The district provided optional online learning. Distributing/providing technology devices, as well as paper packet options for students accomplished this. We calculated four hours of instruction for elementary and three hours for secondary.	K-12	K-5 39.575 hours 6-8 77.15 hours 9-11 78.65 hours 12-VHS 76.46 hours 12-RHS 77.19 hours 9-11 Alt 78.65 hours 12 Alt 77.92 hours	K: 39.575 1-3: 39.575 4-8: 62.120 9-11: 78.650 12: 76.825 Alternative: 69.855	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
148	285	Potlatch School District	The Potlatch School District #285 went into "soft closure" on Friday, March 20, 2020. The Potlatch Board of Trustees voted to end the "soft closure" on Monday, April 6 (the first day back from our scheduled Spring Break). Administration and instructional staff were required to be at school the week of March 23rd through March 27th, in order to design lesson plans and curriculum for both direct classroom instruction or on-line/virtual classroom instruction for our students, if and when they returned to school or if the "soft closure" continued. Our district did move to a 4-hour instructional day (the exception being Kindergarten which was a 1.5 hour instructional day per class - A.M./P.M.)	K-12	Kindergarten A.M.: Loss of Instructional Hrs.: 136 Total Hrs. of Planned Instructional Hrs.: 509.858 Minimum Required Hrs.: 450 (509.858 - 136.0 = 373.858) TOTAL HRS. To Be Waived: 76.142 Kindergarten P.M.: Loss of Instructional Hrs: 120 Total Hrs. of Planned Instructional Hrs.: 493.454 Minimum Required Hrs.: 450 (493.454 - 120.0 = 373.454) TOTAL HRS. To Be Waived: 76.546 Grades 1 - 6: Loss of Instructional Hrs: 89 Total Hrs. of Planned Instructional Hrs.: 947.354 Minimum Required Hrs.: 900 (947.354 - 89.0 = 858.354) TOTAL HRS. To Be Waived: 41.646 Grades 7 - 12: Loss of Instructional Hrs: 127 Total Hrs. of Planned Instructional Hrs.: 1058.0 Minimum Required Hrs.: 990 (1058.0 - 127.0 = 931.0) TOTAL HRS. To Be Waived: 59 ACCUMULATED TOTAL INSTRUCTIONAL HOURS TO BE WAIVED: 253.334	K: 76.344 1-3: 41.646 4-8: 50.323 9-11: 59.000 12: 59.000	Yes
149	192	Glenns Ferry Joint School District	GFSD 192 closed school at the end of the day Tuesday, March 17th. We had spring break the week of March 23-27 so did not provide instruction during that week. From that point on, Glenns Ferry School District provided meals and work packets to students on a grab and go basis. Along with this, instruction was delivered using online platforms as well. These educational efforts were conducted through the end of our scheduled school year on June 4th.	K-12	K: 41.85 hours 1-3: 78.5 hours 4-5: 81.75 hours 6-8: 85 hours 9-11: 85 hours 12: 76.3 hours	K: 41.850 1-3: 78.500 4-8: 83.375 9-11: 85.000 12: 76.300	Yes
151	372	New Plymouth School District	During the soft closure, we began providing distance learning for all of our students starting Monday, March 30th. Our teachers began providing 4 hours of instruction per week day from that date to now. If we continue with this through May 15th, we will be providing distance education or "School-at-Home," for 35 school days or 7 weeks.	9-12	Grades 9-11: 53.15 hours Grade 12: 42.15 hours	9-11: 53.150 12: 42.150	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
152	181	Challis Joint School District	Due to Covid-19, online learning was implemented to continue the instructional hours.	K-12	Kindergarten: 48 hours First through Third Grade: 69.20 hours Fourth through Sixth grade: 69.20 hours Seventh through Twelfth grade: 85.35 hours March 30, 2020-May 21, 2020 K-3.5 hours per day Grd 1-3- 6.65 hours per day Grd 4-6-6.65 hours per day Grd 7-12-7.167 hours per day	K: 48.000 1-3: 69.200 4-8: 75.660 9-11: 85.350 12: 85.350	Yes
154	91	Idaho Falls School District	REMOTE LEARNING PLAN: *OUR FOCUS: Learning will be structured to cover the key grade-level and content standards students need to learn between now and the end of the school year. All our schools will reach out to families in the next few days with details on what learning will look like. *Lessons may be different between schools and content areas. *Some lessons will include online instruction. Others will involve learning activities or packets. *GRADING: In general, we do not plan to give grades for work in the third trimester. Students in grades 9-12 will receive a Pass or Incomplete. *The Pass/Incomplete will be awarded based on the student's performance on an end-of-course assessment or ECA, which will gauge whether a student has learned the key content. *The Pass/Incomplete will not impact a student's GPA. *Middle school students taking classes for high school credit will also receive a Pass/Incomplete. *Teachers will work with students who earn an Incomplete. They will identify the key standards students haven't mastered, re-teach the material, and then reassess students so they can earn the credit. *The only classes in which students will receive grades are the college-level dual enrollment classes we teach through colleges and universities. *instead of graded assignments, students will receive feedback from teachers. *SCHOOL WORK: In general, students will receive assignments on Monday. Assignments will have a set due date and students will have a number of days to complete them. *Assignments: Assignments will include a learning objective and the specific task/learning activity. *Expectations for Grades K-6: 45 minutes a day for reading, 45 minutes a day for math, and 30 minutes a day of writing. *Expectations for Grades 7-8: About 20 minutes of work a day per class, but that may vary depending on assignments. Expectations for Grades 9-12: About 20 minutes of work a day per class, but that may vary depending on assignments. *Seniors: One of our priorities is to ensure seniors complete the requirements they need to graduate. High school staff will reach out to	K-12	District Wide (Except Bldg. 422) All Day Kindergarten: 76.25 hours District Wide (Except Bldg 422) Half Day Kindergarten: 35.55 hours School 422 Kindergarten: 44.55 School 422 Grades 1-6: 87.99 District Wide Grades (Except Bldg 422): 78.99 District Wide Grades 7-8: 90.00 District Wide Grade 9: 90.00 District Wide Grades 10-11: 90.00 District Wide Grades 12: 81.00 Alternative School: 25.90	K: 52.117 1-3: 87.999 4-8: 88.799 9-11: 90.000 12: 81.000	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
158	462	Xavier	The day that the SAT was scheduled to be administered was originally a non-school day for grades K-10. Due to the pandemic and the soft closure we held regular remote learning classes on that day to try and recover as many hours as possible.	K-12	Throughout our soft closure we provided four hours of instruction/schoolwork per day for each student in grades 1-12 and two hours for Kindergarten. We are requesting the remaining hours that we would have been in school be waived due to the soft closure caused by Covid-19. Those totals are: Kindergarten = 42.5 hours Grades 1-12 = 90.61 hours We also had an emergency closure March 16-19 due to Covid-19 we are requesting those hours be waived as well for Kindergarten that is 10.5 hours and for grades 1-12 that is 21.29 hours.	K: 53.000 1-3: 111.900 4-8: 111.900 9-11: 111.900 12: 111.900	Yes
160	101	Boundary County School District	Boundary County School District made all efforts in reaching all students during or time of remote learning. One to one devices were distributed to students and families so education could continue to take place. Small groups of students were allowed to meet to make up credit after the social distancing requirements were lifted. Teachers called weekly and zoomed students to ensure learning was taking place.	K-12	MT Hall (101)- 56.25 hours Naples (102)- 59.22 hours Valley View (103)- 59.56 hours Boundary County Middle School (202)- 63.00 hours Bonners Ferry High School (401)-69.01 hours	K: 57.736 1-3: 57.736 4-8: 63.000 9-11: 69.010 12: 69.010	Yes
161	495	Alturas International Academy	Alturas transitioned to distance learning on March 18th and rolled out a strong online learning plan that started on March 30th. Half-day kindergarten students have material and curriculum that requires roughly 2 hours of daily work. 1st-8th grade students participate in daily live Zoom lessons for English and Math, with other subjects being taught via Loom recordings. Daily work for 1st-5th grades requires roughly 4-6 hours of dedicated learning time and grades 6th-8th require roughly 5-7 hours. All teachers are available from 8:30-3:30 for students to receive individualized instruction when necessary, if a more in depth look at their instruction is needed. Alturas has worked diligently to maintain a sense of normalcy and dedication to learning throughout this ordeal, students will continue to be assessed on assignments and graded accordingly.	K-8	Kindergarten - 79.135 1st-3rd grade - 60.385 hours 4th-5th grade - 99.615 hours 6th - 8th grade - 91.635 hours	K: 1-3: 4-8: 9-11: 12: Alternative:	
163	481	Heritage Community Charter School	Due to Covid-19, online learning was implemented to continue the instructional hours including: -During soft closure we connected with parents via Bloomz to coordinate instruction. -We provided hardware and wireless access to students who lacked it to complete assignments. -The school provided packets of instruction to those who lacked wireless access.	K-8	Kindergarten: No waiver needed First through Third Grade: 78 hours Fourth through Eighth grade: 79.287 hours	1-3: 78.000 4-8: 79.287	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
164	161	Clark County School District	The Clark County School District has worked diligently to provide students with exceptional instruction during this unprecedented time. Our district has changed the grading system to mastery, students have been contacted daily by teachers, teachers have provided zoom meetings, packets have been delivered to students' homes, and teachers have contacted each student to make sure they have adequate technology for any and all online instruction.	K-12	April hours for grades K-12 = 48 (Grade K=48; 1-3= 48 each;4-8= 48 each; 9-11 =48; 12= 48 May hours for grades K-11 = 36 (Grade k=36; 1-3=36; 1-3= 36 each; 4-8= 36 each; 9-11 =36) May hours for grade - 12 = 30 Total Hours Requested for Instructional Waiver - Grades K 11 = 84 hours Total Hours Requested for Instructional Waiver - Grade 12 = 78 hours	K: 84.000 1-3: 84.000 4-8: 84.000 9-11: 84.000 12: 78.000	Yes
168	60	Shelley Joint School District	We provided online instruction for approximately half of the hours in a regular school day.	K-12	K - 79.877 1st - 144.883 2nd - 149.102 3rd & 4th - 160.068 5th - 154.286 6th - 158.649 7th & 8th - 163.108 9th thru 11th - 169.658 12th - 154.442	K: 79.877 1-3: 151.351 4-8: 159.844 9-11: 169.658 12: 154.442	Yes
173	1	Boise Independent School District	The Boise School District transitioned to a remote learning model starting on March 30th and will continue with delivering instruction through our remote learning model until the school year ends.	K-12	Kindergarten: 111.376 hours Grades 1-3: 116 hours Grades 4-6: 206 hours Grades 7-8: 128.858 hours Grade 9: 218.858 hours Grade 10-11: 105.999 hours Grade 12: 94.991 hours Grades 9-11 Alternative School: 104.539 hours Grade 12 Alternative School: 104.542 hours	K:111.376 1-3: 116 4-8: 167.49 9-11: 162.426 12: 94.991 Alternative: 104.541	Yes

	A	B	E	F	G	H	I
1	#	District Name	Efforts by the LEA to make up lost instructional hours	Range of Grades Impacted	Number of hours the LEA is requesting to be waived	Grade Range - Hours Requested	Does the request meet statutory requirements?
175	272	Lakeland School District	The District has continued instruction remotely. Each teacher is holding synchronous classes at least once per week with asynchronous requirements held throughout the week. Each grade level or department has identified the most essential standards to be mastered during fourth quarter. Formative assessment data is being gathered each week with a final summative assessment related to the standards taught in this online environment given the week of May 25th. Using the data collected, teachers are planning what instruction needs to look like in the fall to fill in any gaps in learning from this spring while ensuring that the new grade level standards are being taught and mastered. To ensure access for all, we have distributed computers and hot spots to those who need them. We have purchased a unit that can be connected to a bus and parked in areas of our district where hot spots don't work well due to poor cell signal from he cell company. For families who cannot access digital, online learning, we are providing packets for students to complete and turn in. Additionally, we have connected with EVERY family to ensure we know to what extent they are able to participate in this online learning environment. Accommodations directed by IEPs and 504s are being provided and SWD teachers are meeting with their students virtually to provide specially designed instruction.	K-12	The expected hours of online instruction are outlined in our Learning Continuum which I will also email Julie Oberle and Pam Brewer. The dates of this waiver are March 16, 2020 - June 5, 2020. The waiver is for the following hours: Grades K-2: 237.351 Grades 3-6: 184.351 Grades 7-8: 141.951 Grades 9-12: 122.500 Alternative: 99.551	K: 237.351 1-3: 219.737 4-8: 167.486 9-11: 122.500 12: 122.500 Alternative: 99.551	Yes
182	392	Mullan School District	Adjusted teaching styles so that we were operaional the rest of the year.	K-12	9 days 5.5 hours per day 49.50 total hours	K: 1-3: 4-8: 9-11: 12: Alternative:	Need clarification of efforts taken to minimize loss of instructional hours as well as clarification on if the 49.500 hours missed applies to all grades K-12.

SUBJECT

Employment Referrals and Prevention of Sexual Abuse – Policy Proposal

REFERENCE

June 2003	Board approved a definition of persistently dangerous school used for determining persistently dangerous public elementary school or secondary school as requires by the Elementary Secondary Education Act.
August 2017	Board approved Idaho's Consolidated Plan and its submission to the US Department of Education.
February 2018	Board approved revisions to Idaho's Every Student Succeeds Act Consolidated and authorized the Department of Education to submit the plan to the U.S. Department of Education.
February 2020	Board approved Persistently Dangerous School definition pursuant to the requirements of the Elementary and Secondary Education and 20 USC 7912.

APPLICABLE STATUTE, RULE, OR POLICY

Sections 33-1208, 33-1208A, and 33-1210, Idaho Code
IDAPA 08.02.02.076
20 U.S. Code § 7926

BACKGROUND/DISCUSSION

The Elementary and Secondary Education Act of 1965 (ESEA), as amended by the Every Student Succeeds Act, includes provisions to help protect students from sexual abuse. Section 8546 of the ESEA (20 U.S.C. § 7926), requiring policies to be in place to prohibit the aiding and abetting of sexual abuse, imposes an important requirement on states, state educational agencies (SEAs), and local educational agencies (LEAs) that receive ESEA funds.

Under section 8546, every State, SEA, or LEA that receives ESEA funds must have in place laws, regulations, or policies that prohibit the SEA, an LEA, or school, as well as any school employee, contractor, or agent, from providing a recommendation of employment for an employee, contractor, or agent that the SEA, LEA, or school, or the individual acting on behalf of the SEA, LEA, or school, knows, or has probable cause to believe, has engaged in sexual misconduct with a student or minor in violation of the law. The SEA, LEA, school, or individual acting on behalf of one of those entities would not be prohibited from following routine procedures regarding the transmission of administrative or personnel files but would be prohibited from doing more than that to help the employee obtain new employment.

When Idaho applied for funds under ESEA, our agency provided an assurance that all applicable legal requirements, including section 8546, would be complied with; additionally, LEAs provided similar assurances.

IMPACT

Adoption of the new policy will ensure compliance with federal law.

ATTACHMENTS

Attachment 1 – Policy – Employment Referrals and Prevention of Sexual Abuse
Attachment 2 – ESEA Section 8546

STAFF COMMENTS AND RECOMMENDATIONS

Pursuant to IDAPA 08.02.02.076, Code of Ethics for Idaho Professional Educators, subsection 05. Principle IV – Professional Integrity, unethical conduct includes, but not limited to, falsifying, deliberately misrepresenting, or deliberately omitting information in the course of an official inquiry or on an official evaluation of colleagues. Additionally, Section 33-1210, Idaho Code, requires a hiring district to request from the office of the Superintendent of Public Instruction verification of certification status and any past or pending violations of the professional code of ethics, including, but limited to sexual misconduct. Section 33-512, Idaho Code requires all certificated and non-certificated staff to complete a criminal history check, and Section 33-1208, Idaho Code, requires the revocation of any certificate for a number of felony offenses including offences that would fall under the category of sexual misconduct. While all of these state policies are designed to help keep students safe, none of them specifically state school employees may not recommend employment for an employee that they have probable cause to believe has engaged in sexual misconduct with a student or minor in violation of law. The closest state law to meeting this requirement is the implication in the Code of Ethics for Idaho Professional Educators regarding omitting information in the course of an inquiry or evaluation of a colleague and this requirements is only applied to certificated staff, not the full range of employees and contractors identified in 20 U.S. Code § 7926.

The Board's governance and oversight of the Idaho's public school system is established through a combination of constitutional authority, Idaho statute, Administrative Code, and Governing Policies and Procedures. Pursuant to Section 33-1612, Idaho Code, the Board shall adopt rules, pursuant to the provisions of chapter 52, title 67, Idaho Code, and Section 33-105(3), Idaho Code to establish a throughout system of public school with uniformity as required by the constitution. The provisions in Section 33-105(3), Idaho Code, grant the authority for the Board to establish Governing Policies and Procedures and minimum requirements for this process. Prior to 2000 the Board established requirements for the public schools through the *State Board of Education Rules and Regulations for Public Schools K-12* policy manual, with only those requirements that were specifically identified as needing to be established in Administrative Code being promulgated through the rulemaking process. Starting in 2000 many of these Board policies

were moved into Administrative Code as they were updated in an effort to establish those requirements governing the K-12 public school system in a single location. The Governor's Office, through the Red Tape Reduction Act, over the past year, has engaged agencies in an effort to reduce those requirements established in Administrative Code. In light of this effort, Board staff is exploring the options for establishing this federal requirement through the Board's Governing Policies and Procedures. The Board currently implements the process for establishing Governing Policies and Procedures through the Board's standing committees.

The proposed policy outlined in Attachment 1 would establish a policy that meets the federal requirements. Staff recommends approval.

BOARD ACTION

I move to approve the policy proposal for employment referrals and prevention of sexual abuse, as submitted in Attachment 1 and to direct Board staff to bring back the policy through the Board's committee review process for inclusion in the Board's Governing Policies and Procedures.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

Employment Referrals and Prevention of Sexual Abuse

All employees, contractors, and agents of Idaho school districts and public charter schools are prohibited from providing any recommendation for employment or otherwise helping an employee, contractor, or agent of the school district or public charter school in obtaining a job if they know or have probable cause to believe the individual has engaged in sexual misconduct with a student or minor in violation of the law.

This prohibition does not include following routine procedures regarding the transmission of administrative or personnel files.

These prohibitions shall not apply to cases in which the alleged misconduct was properly reported to law enforcement and any other authorities required by federal, state, or local law; and

1. The matter was officially closed;

2. The prosecutor or police with jurisdiction over the case investigated the allegations and notified school district or public charter school officials that there is insufficient information to establish probable cause that the individual engaged in sexual misconduct with a minor or student in violation of the law;

3. The individual alleged to have engaged in sexual misconduct with a student or minor has been charged with and acquitted or otherwise exonerated of the sexual misconduct; or

4. The case or investigation has remained open and no indictment or other charges have been brought within four years of the date on which the information was provided to law enforcement.

Legal Reference: 20 U.S.C. § 7926 Prohibition on Aiding and Abetting Sexual Abuse

ESEA Section 8546 (20 U.S.C. § 7926):
Prohibition on Aiding and Abetting Sexual Abuse

(a) IN GENERAL. — A State, State educational agency, or local educational agency in the case of a local educational agency that receives Federal funds under this Act shall have laws, regulations, or policies that prohibit any individual who is a school employee, contractor, or agent, or any State educational agency or local educational agency, from assisting a school employee, contractor, or agent in obtaining a new job, apart from the routine transmission of administrative and personnel files, if the individual or agency knows, or has probable cause to believe, that such school employee, contractor, or agent engaged in sexual misconduct regarding a minor or student in violation of the law.

(b) EXCEPTION. — The requirements of subsection (a) shall not apply if the information giving rise to probable cause —

> (1)(A) has been properly reported to a law enforcement agency with jurisdiction over the alleged misconduct; and
> (B) has been properly reported to any other authorities as required by Federal, State, or local law, including title IX of the Education Amendments of 1972 (20 U.S.C. 1681 et seq.) and the regulations implementing such title under part 106 of title 34, Code of Federal Regulations, or any succeeding regulations; and
>
> (2)(A) the matter has been officially closed or the prosecutor or police with jurisdiction over the alleged misconduct has investigated the allegations and notified school officials that there is insufficient information to establish probable cause that the school employee, contractor, or agent engaged in sexual misconduct regarding a minor or student in violation of the law;
> (B) the school employee, contractor, or agent has been charged with, and acquitted or otherwise exonerated of the alleged misconduct; or
> (C) the case or investigation remains open and there have been no charges filed against, or indictment of, the school employee, contractor, or agent within 4 years of the date on which the information was reported to a law enforcement agency.

(c) PROHIBITION. — The Secretary shall not have the authority to mandate, direct, or control the specific measures adopted by a State, State educational agency, or local educational agency under this section.

(d) CONSTRUCTION. — Nothing in this section shall be construed to prevent a State from adopting, or to override a State law, regulation, or policy that provides, greater or additional protections to prohibit any individual who is a school employee, contractor, or agent, or any State educational agency or local educational agency, from assisting a school employee who engaged in sexual misconduct regarding a minor or student in violation of the law in obtaining a new job.

SUBJECT

ESSER 10% SEA Reserve Funds – Social and Emotional Learning -- $1 million

REFERENCE

March – April 2020	The Board has received weekly updates on the federal response to the coronavirus (COVID-19) pandemic and the availability of funding through the CARES Act.
April 27, 2020	The Board received an update on the allowable uses and amount of funds available to Idaho through the Elementary and Secondary School Emergency Relief Fund and Governor's Emergency Education Relief Fund.
May 4, 2020	The Board directed staff to move forward with data analysis for the discussed proposals and to identify sources of funds for those proposals.
June 10, 2020	The Board approved the use of the ESSER 10% SEA reserve funds for grants to local education agencies and for funding for professional development to provide social emotional and behavioral health supports remotely.

BACKGROUND/DISCUSSION

The CARES Act allowed the State Education Agency (SEA) to reserve up to 10 percent of the Elementary and Secondary School Emergency Relief (ESSER) Fund funding to be used for grants to local education agencies (LEAs) to be used for emergency needs as determined by the SEA to address issues responding to COVID-19. These funds must be awarded by May 18, 2021, and expended by September 30, 2022. At the June 10 Regular Board meeting, the Board approved the funding distributions shown in attachment 1, which includes $1 million to be used for Professional Development for Providing Social and Emotional/ Behavioral Supports Remotely. The Department has conducted a brief survey on the student behavioral health services within Idaho's public-school districts and charters. A synopsis of the results and options for use of the $1 million has been provided in Attachment 2.

IMPACT

Board action would provide direction to the Department on the use of the $1 million the Board approved be used for Professional Development to Provide Social and Emotional Learning.

ATTACHMENTS

Attachment 1 – CARES Act Funding Diagram Handout
Attachment 2 – $1M SEL Set Aside Options
Attachment 3 – Option 1 Preliminary Funding Distribution Breakdown

STAFF COMMENTS AND RECOMMENDATIONS

The CARES Act establishes multiple funds dedicated to addressing impacts to education due to the 2019 Novel Coronavirus (COVID-19) pandemic, two of these funds provide allocations at the state level, while a third fund, the Higher Education Relief Act is disrupted directly to the postsecondary institutions. The Elementary and Secondary School Emergency Relief (ESSER) Fund allocates funds to the state education agencies based on the same proportion as states receive funds under Part A of Title I of the Elementary and Secondary Education Act in fiscal year 2019. Idaho's share of this fund is $47,854,695. From this amount a minimum of $43,069,226 (90%) must be distributed to the local education agencies (LEA) based on the LEA's proportional share of the state's Part A, Title I funds. These funds are distributed based on each LEA's propositional share of Part A, Title I funds received in 2019. Not all LEA's receive Part A, Title I funds. Part A, Title I funds are distributed based on an LEA's share of eligible Title I students. Up to 10 percent (10%) of these funds, $4,785,470, may be reserved by the SEA "to be used for emergency needs as determined by the SEA to address issues responding to COVID-19."

Pursuant to the federal ESSER Fund Notice, SEA reserve funds may be used to award sub grants or enter into contract for emergency needs that address issues related to COVID-19. An SEA must ensure that an "LEA that receives an ESSER Fund sub-grant provides equitable services to students and teachers in non-public schools located within the LEA in the same manner as provided under section 1117 (Providing Equitable Services to Eligible Private School Children, Teachers, and Families) of the Elementary Secondary Education Act (ESEA), as determined through timely and meaningful consultation with representatives of non-public schools. In providing services or assistance to students and teachers in non-public schools, the LEA or another public agency must maintain control of the funds, and title to materials, equipment, and property purchased with such funds must be in a public agency." States have one year from date of the federal award to award the funds. ESSER Funds may only be used for elementary and secondary education relief.

At the Idaho Association of School Administrators annual summer conference, additional feedback was received from school administrators expressing the need for resources for providing social emotional/behavior health supports to their students during these unprecedented times.

The current funding methodology for the distribution of approximately $4M appropriated for Safe and Drug Free Schools results in a base amount of $2,000 for each local education agency and a prorated amount based on the prior year's reported average daily attendance. Using this methodology and November 2018 enrollment data, Option 1 would result in each LEA receiving a base amount of $2,000 and a per pupil amount of $2.025. Without additional information on limits to the amount an LEA could apply for under the competitive grant option (Option 2) it is difficult to complete a full review on the number of LEAs that could potentially

take advantage of the competitive grant process. Based on the information available, Board staff recommends funding be distributed using Option 1.

BOARD ACTION

I move to approve the distribution of the $1 million ESSER SEA Reserve funds for Social and Emotional Learning as described in Option _____.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

CARES ACT FUNDING DIAGRAM (Provided to the Board June 10, 2020)

The diagram below outlines three areas of CARES Act funding for Board consideration and action:

- Funding distribution for the ESSER SEA Reserve funds;
- Request to the Governor's Coronavirus Financial Advisory Council (CFAC); and
- Additional recommendation for use of GEER funding, in light of work being done by the Board and Department.

Utilization of ESSER SEA Reserve ($4.8M)

Statewide Blended Learning Model - K-12 Technology Grants to LEAs to support LEA Blended Learning Strategies to assure equity in instruction – **$3.8M**

- Devices – students
- Connectivity – students
- Infrastructure – staff
- Adaptive Technology (SPED)
- LMS
- PD remote instruction/LMS use

Statewide Blended Learning Model - Professional Develop for Providing Social Emotional/ Behavioral Health Supports Remotely - **$1M**

CFAC Funding Request

Statewide Blended Learning Model - Address Digital Divide (tied to ESSER Grants to support blended learning strategies to assure equity in instruction) - **$30M**

- Devices – students
- Connectivity – students
- Infrastructure – staff
- Adaptive Technology (SPED)
- LMS
- PD remote instruction/LMS use

Higher Ed – Digital Campus - **$4M**

Statewide Blended Learning Model - Last Mile Connectivity - **$100M** request from Broadband Subcommittee

Funding for non-Title I schools (SDE request - distributed as minimum to LEAs $34,367) - **$1M**

GEER Funding Recommendation ($15.6M)

Statewide Blended Learning Model - Statewide Strategic Technology Priorities K-12

SBOE GEER Recommendation
(Board Action June 1, 2020)

- Higher Ed
- **Statewide Blended Learning Model -** IPTV/IDLA Partnership
- **Statewide Blended Learning Model -** Career Technical Education

KEY:

- Blue boxes indicate Board decision points
- Orange boxes indicated approved funding requests
- Gray box indicated previous Board action
- Purple border indicates response to LEA need for devices and connectivity

Options for Use of $1 million ESSER 10% SEA Reserve fund for Professional Development for Social/Emotional and Behavioral Health Supports

In July 2020 the SDE's Office of Student Engagement and Safety Coordination completed a brief survey on the Student Behavioral Health services within Idaho's public-school districts and charters. Of the 93 responding local education agencies (LEA), 69% reported that they are currently providing program(s) that support the behavioral health of their students and 31% are not.

Of those providing such services, 56% responded that their services are determined and managed at the building/school level while only 29% reported that these services were common throughout the district. When asked whether the LEA had confidence that their current services would be able to meet the LEA's behavioral health needs, of those providing services 75% reported being very to somewhat confident in supporting the needs of their students and 65% reported being very to somewhat confident in meeting the needs of their employees.

Finally, LEAs were asked to rate their interest level in several state behavioral health support options, including: joining a statewide cohort to implement state selected programming, technical assistance to support the local selection of best-practice programs, technical assistance to support local implementation, technical assistance to integrate services online, and grant funding to implement/support/expand local efforts. Of these five options presented, only one had a majority of interest from the responding LEAs. Grant funding to support local efforts received interest from 82% of the respondents. All other options presented only ranged between 26% to 36% interest.

Based on the information above the SDE is bringing forward several options that would support the Behavioral Health of Idaho students.

Option 1 - Grants to local education agencies and minimum amounts to each LEA – Although not presented as an option in the SDE July survey described above, based upon the high percentage of districts interested in receiving funding to support these efforts, the first option listed below is a direct payment to all LEA's based upon a funding model similar to that currently used to distribute Idaho's Safe and Drug Free Schools funds. This model of distribution includes a base allocation that ensures all districts receive a minimum level of funding to support the behavioral health efforts of all Idaho LEAs.

Option 2 - Competitive Grants Open to LEAs – This option received the most interest from districts in our July survey, with 82% of respondents expressing interest. This option would be offered to districts in the form of competitive grants. Advantages to this option include sufficient funding to support behavioral health services as developed and requested by the LEA, and through the selection process a level of assurance that only high-impact, evidence-based services are supported. As with any competitive funding opportunity, this option would mean that a percentage of Idaho's LEAs would not receive any funding if not selected.

Option 3 - Statewide Program – The third option is to fund an opt-in, statewide cohort to implement a state selected program. This option may also be limited based upon the number of districts that apply to participate. In the SDE July survey this option had the second highest level of interest at 36% of LEA's being very to somewhat interested.

ATTACHMENT 3

ESSERF State Set-Aside Reserve Social & Emotional Learning (SEL) $1,000,000

These ESSER State Set-Aside Reserve Funds can be used for the development, expansion, or continuation of Social and Emotional Learning/Behavioral Health and Wellness services that support student success.

Methodology calculation:

Each entity listed will receive a base of $2,000.00 and a per pupil amount of $2.025 based on November 2019 enrollment data.

PROPOSED SEL ALLOCATION

LEA #	LEA Name	Total Allocation
1	Boise Independent	$53,588
2	Meridian Joint	$83,662
3	Kuna Joint	$13,363
11	Meadows Valley	$2,324
13	Council	$2,547
21	Marsh Valley Joint	$4,590
25	Pocatello	$27,312
33	Bear Lake County	$4,379
41	St. Maries Joint	$3,970
44	Plummer / Worley Joint	$2,769
52	Snake River	$5,683
55	Blackfoot	$9,721
58	Aberdeen	$3,440
59	Firth	$3,707
60	Shelley Joint	$6,712
61	Blaine County	$8,866
71	Garden Valley	$2,563

ATTACHMENT 3

LEA #	LEA Name	Total Allocation
72	Basin	$2,666
73	Horseshoe Bend	$2,492
83	West Bonner County	$4,108
84	Lake Pend Oreille	$9,706
91	Idaho Falls	$22,801
92	Swan Valley Elementary	$2,121
93	Bonneville Joint	$28,985
101	Boundary County	$4,956
111	Butte County	$2,818
121	Camas County	$2,358
131	Nampa	$30,450
132	Caldwell	$14,396
133	Wilder	$3,045
134	Middleton	$10,233
135	Notus	$2,828
136	Melba Joint	$3,770
137	Parma	$4,122
139	Vallivue	$21,321
148	Grace Joint	$3,112
149	North Gem	$2,336
150	Soda Springs Joint	$3,920
151	Cassia County Joint	$13,110
161	Clark County Joint	$2,245
171	Orofino Joint	$4,298
181	Challis Joint	$2,656
182	Mackay Joint	$2,454
191	Prairie Elementary	$2,006
192	Glenns Ferry Joint	$2,854

ATTACHMENT 3

LEA #	LEA Name	Total Allocation
193	Mountain Home	$9,935
201	Preston Joint	$6,764
202	West Side Joint	$3,511
215	Fremont County Joint	$6,455
221	Emmett Independent	$6,997
231	Gooding Joint	$4,776
232	Wendell	$4,314
233	Hagerman Joint	$2,618
234	Bliss Joint	$2,257
242	Cottonwood Joint	$2,792
243	Salmon River Joint	$2,271
244	Mountain View	$4,551
251	Jefferson County Joint	$14,799
252	Ririe Joint	$3,513
253	West Jefferson	$3,191
261	Jerome Joint	$10,387
262	Valley	$3,207
271	Coeur d' Alene	$24,429
272	Lakeland	$11,286
273	Post Falls	$14,503
274	Kootenai Joint	$2,290
281	Moscow	$6,655
282	Genesee Joint	$2,646
283	Kendrick Joint	$2,502
285	Potlatch	$2,968
287	Troy	$2,583
288	Whitepine Joint	$2,478
291	Salmon	$3,575

ATTACHMENT 3

LEA #	LEA Name	Total Allocation
292	South Lemhi	$2,209
302	Nezperce Joint	$2,322
304	Kamiah Joint	$2,824
305	Highland Joint	$2,346
312	Shoshone Joint	$2,990
314	Dietrich	$2,409
316	Richfield	$2,425
321	Madison	$12,964
322	Sugar-Salem Joint	$5,234
331	Minidoka County Joint	$10,737
340	Lewiston Independent	$11,695
341	Lapwai	$3,051
342	Culdesac Joint	$2,213
351	Oneida County	$8,734
363	Marsing Joint	$3,715
364	Pleasant Valley Elementary	$2,014
365	Bruneau-Grand View Joint	$2,632
370	Homedale Joint	$4,478
371	Payette Joint	$4,823
372	New Plymouth	$3,966
373	Fruitland	$5,373
381	American Falls Joint	$5,147
382	Rockland	$2,348
383	Arbon Elementary	$2,030
391	Kellogg	$4,201
392	Mullan	$2,205
393	Wallace	$3,000
394	Avery	$2,049

ATTACHMENT 3

LEA #	LEA Name	Total Allocation
401	Teton County	$5,843
411	Twin Falls	$21,483
412	Buhl Joint	$4,594
413	Filer	$5,337
414	Kimberly	$6,248
415	Hansen	$2,674
416	Three Creek Joint Elementary	$2,012
417	Castleford Joint	$2,668
418	Murtaugh Joint	$2,733
421	McCall-Donnelly Joint	$4,687
422	Cascade	$2,413
431	Weiser	$5,175
432	Cambridge Joint	$2,261
433	Midvale	$2,239
451	Victory Charter School	$2,800
452	Idaho Virtual Academy	$5,515
453	Idaho Virtual HS Richard McKenna	$3,020
454	Rolling Hills Charter School	$2,498
455	Compass Charter School	$4,359
456	Falcon Ridge Charter School	$2,547
457	Inspire Virtual Charter School	$4,122
458	Liberty Charter School	$2,832
460	The Academy	$3,089
461	Taylor's Crossing Charter School	$2,747
462	Xavier Charter School	$3,419
463	Vision Charter School	$3,458
464	Whitepine Charter School	$3,215
465	North Valley Academy	$2,490

ATTACHMENT 3

LEA #	LEA Name	Total Allocation
466	iSucceed Charter High	$3,322
468	Idaho Science & Technology	$2,686
469	Idaho Virtual Education Partners ICONN	$2,490
470	Kootenai Bridge Academy	$2,579
472	Palouse Prairie School	$2,379
473	The Village Charter School	$2,664
474	Monticello Montessori Charter School	$2,551
475	Sage International School of Boise	$3,984
476	Another Choice Virtual Charter District	$2,988
477	Blackfoot Community Learning Center	$3,104
478	Legacy Charter School	$2,593
479	Heritage Academy	$2,255
480	North Idaho STEM Charter	$3,114
481	Heritage Community Charter School	$2,974
482	American Heritage Charter School	$2,802
483	Chief Tahgee Elementary Academy Charter	$2,182
485	Idaho STEM Academy District	$2,237
486	Upper Carmen Charter School	$2,111
487	Sandpoint Charter Forrest Bird	$2,638
488	Syringa Mountain Charter	$2,213
489	Idaho College & Career Readiness Charter	$2,322
491	Coeur d' Alene Charter Academy	$3,359
492	ANSER Charter School	$2,753
493	North Star Charter School	$4,021
494	Pocatello Community Charter School	$2,688
495	Forrester Academy - Alturas	$3,124
496	Gem Prep - Pocatello	$2,644
497	Pathways in Education	$2,603

ATTACHMENT 3

LEA #	LEA Name	Total Allocation
498	Gem Prep - Meridian	$2,767
499	Future Public School	$2,601
508	Hayden Canyon	$2,616
511	Peace Valley Charter School	$2,579
513	Project Impact STEM Academy	$2,425
518	ARTEC Industrial Charter School	$2,427
523	Elevate Academy Inc	$2,636
528	Forge International, LLC	$2,522
531	Fern-Waters Public Charter	$2,115
532	Treasure Valley Classical	$2,614
534	Gem Prep - Online LLC (490)	$2,652
540	Island Park Elementary	$2,030
544	Mosaics	$2,607
550	Doral Academy	$2,397
553	Pinecrest Academy	$2,397
555	COSSA	$2,271
559	Thomas Jefferson Charter School	$2,775
596	Idaho Bureau of Educational Services for the Deaf and the Blind	$2,190
751	SEI Tech	$2,417
768	Meridian Technical Charter High School	$2,403
785	Meridian Medical Arts Charter School	$2,387
790	ARTEC Charter School	$2,417
794	Payette River Technical	$2,395
795	Idaho Arts Charter School	$4,493
796	Gem Prep - Nampa	$2,885
813	Moscow Charter School	$2,373
	Total	**$999,997**

SUBJECT

Idaho Science Standards – Technical Correction

REFERENCE

April 2009	Board approved updated Content Standards in Science.
April 2010	Board adopted revised Content Standards in Information and Communication Technology.
August 2015	Board approved updated Science standards (rejected by legislature).
December 2016	Board approved updated Science Content Standards (partially rejected by legislature)
August 2017	Board approved updated Science Content Standards and proposed rule updating Idaho's Science Content Standards.
November 2017	Board approved pending rule docket number 08- 0203-1705, incorporating by reference the updated Idaho Science Content Standards.
June 2020	Board approved a technical correction to the Idaho Science Content Standards moving the supporting content sections to a separate document.

APPLICABLE STATUTE, RULE, OR POLICY

Idaho State Board of Education Governing Policies & Procedures, Section IV.B.9
Section 33-118 and 33-1612, Idaho Code
IDAPA 08.02.03.004.01, Rules Governing Thoroughness – The Idaho Content Standards

BACKGROUND/DISCUSSION

When the Board approved new science standards in 2017, the incorporated by reference document included the science standards and additional supporting content. The incorporated by reference document is adopted as part of the rule making process. After the Board approved a technical correction to remove the supporting content at the June 10, 2020 regular Board meeting, concerns were raised that the change should have been made through the rulemaking process. Based on a review of this matter by the Attorney General's office, the Board may wish to reconsider the action to remove the supporting content and allow for the science standards review committee, which began its review in late June 2020, to address this as part of their work and the formal rulemaking process, anticipated to conclude in January 2022.

IMPACT

Reconsideration of the Board's June 10, 2020 action would leave the Idaho Science Content Standards incorporated by reference into IDAPA 08.02.03.004 as approved in 2017.

ATTACHMENTS

Attachment 1 - Idaho Science Content Standards as Incorporated by Reference

STAFF COMMENTS AND RECOMMENDATIONS

The Administrative Procedures Act requires all documents incorporated by reference to be date and edition specific in order to be valid incorporations by reference. Formal rulemaking procedures must be followed when incorporating documents by reference. Once incorporated by reference, a document has the force and effect of law. Materials that are incorporated by reference must be maintained in their original incorporated state, the one exception to this is technical corrections and document formatting. The technical correction to the Idaho Science Content Standards incorporated by reference into IDAPA 08.02.03.004 were more extensive than what normally would be considered as a technical correction. Following the Board's action on June 10, 2020 the Board office fielded a number of questions regarding the scope of the change and whether or not it should qualify as a technical correction. Given the concerns raised and the fact that the Idaho Science Content Standards are currently being reviewed, Board staff recommends the previous action be rescinded and the science standards incorporated by reference document, as approved in 2017, be moved through the normal review process. Any amendments to the documents would then be considered by the Board through the normal 2021-2022 rulemaking process.

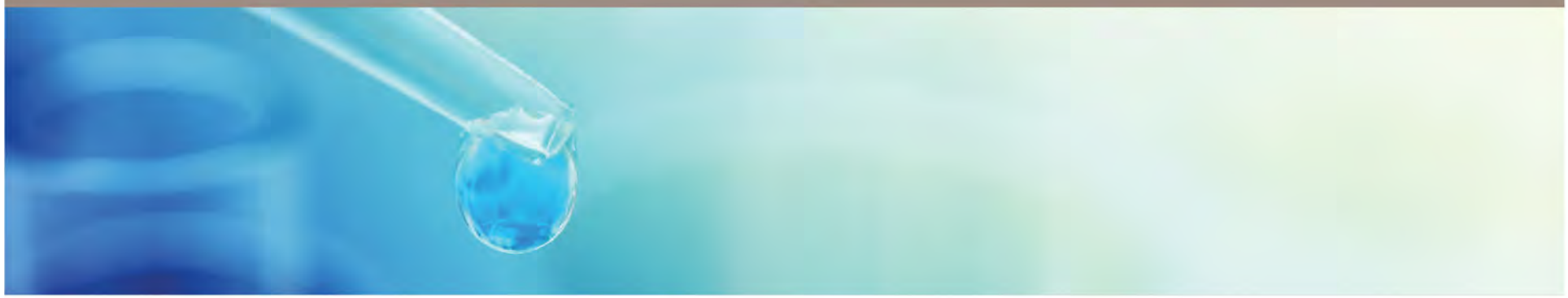
BOARD ACTION

I move to rescind the vote taken at the June 10, 2020 Board meeting to approve the technical correction to the Idaho Science Content Standards.

Moved by _____ Seconded by _____ Carried Yes _____ No _____

IDAHO CONTENT STANDARDS

SCIENCE



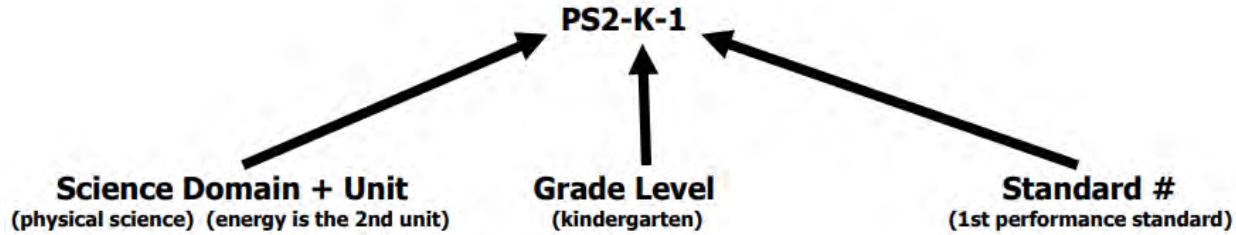
STATE SUPERINTENDENT OF PUBLIC INSTRUCTION
SHERRI YBARRA
STATE DEPARTMENT OF EDUCATION
PO BOX 83720
BOISE, ID 83720-0027

TABLE OF CONTENTS

INTRODUCTION

The Idaho State Science Standards are essential for developing the science literacy of Idaho students, as it is vital that our students understand the fundamental laws and practices within scientific disciplines. This document provides stakeholders with a set of rigorous and relevant science performance standards that prepare students to be informed, contributing citizens of the 21st century world. The unifying goal is for Idaho students to practice and perform science and use their working knowledge of science to successfully function in a complex world.

USING THIS DOCUMENT



Category Headings

PS – Performance Standards
SC – Supporting Content

Other Abbreviations

ETS – Engineering and Technology Standard
K – Kindergarten
MS – Middle School
HS – High School

Science Domains

LS – Life Science
PS – Physical Science
PSC – Physical Science Chemistry
PSP – Physical Science Physics
ESS – Earth and Space Science

ELEMENTARY SCHOOL (KINDERGARTEN)

PS: Physical Sciences

PS1-K Motion and Stability: Forces and Interactions

Performance Standards

Students who demonstrate understanding can:

PS1-K-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.

- Further Explanation: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.
- Content Limit: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.

PS1-K-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

- Further Explanation: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.
- Content Limit: Assessment does not include friction as a mechanism for change in speed.

Supporting Content

PS2.A: Forces and Motion

- Pushes and pulls can have different strengths and directions. (PS1-K-1, PS1-K-2)
- Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (PS1-K-1, PS1-K-2)

PS2.B: Types of Interactions

- When objects touch or collide, they push on one another and can change motion. (PS1-K-1)

PS3.C: Relationship Between Energy and Forces

- A bigger push or pull makes things speed up or slow down more quickly. (PS1-K-1)

ETS1.A: Defining Engineering Problems

- A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. (PS1-K-2)

PS2-K Energy

Performance Standards

Students who demonstrate understanding can:

PS2-K-1. Make observations to determine the effect of sunlight on Earth's surface.

- Further Explanation: Examples of Earth's surface could include sand, soil, rocks, and water.
- Content Limit: Assessment of temperature is limited to relative measures such as warmer/cooler.

PS2-K-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.

- Further Explanation: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.

Supporting Content

PS3.B: Conservation of Energy and Energy Transfer

- Sunlight warms Earth's surface. (PS2-K-1, PS2-K-2)

LS: Life Sciences

LS1-K Molecules to Organisms: Structure and Processes

Performance Standards

Students who demonstrate understanding can:

LS1-K-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

- Further Explanation: Examples of patterns could include that animals need to take in food but plants produce their own; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.

LS1-K-2. Use classification supported by evidence to differentiate between living and non-living items.

- Further Explanation: Use chart or Venn diagram to sort objects or pictures into living and not-living items.

Supporting Content

LS1.C: Organization for Matter and Energy Flow in Organisms

- All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (LS1-K-1)
- Living and non-living things have distinct characteristics. (LS1-K-2)

ESS: Earth and Space Sciences

ESS1-K Earth's Systems

Performance Standards

Students who demonstrate understanding can:

ESS1-K-1. Use and share observations of local weather conditions to describe patterns over time, which includes the 4 seasons.

- Further Explanation: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.
- Content Limit: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.

ESS1-K-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

- Further Explanation: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.

Supporting Content

ESS2.D: Weather and Climate

- Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. (ESS1-K-1)
- The four seasons occur in a specific order due to their weather patterns. (ESS1-K-1)

ESS2.E: Biogeology

- Plants and animals can change their environment. (ESS1-K-2)

ESS3.C: Human Impacts on Earth Systems

- Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (ESS1-K-2)

ESS2-K Earth and Human Activity

Performance Standards

Students who demonstrate understanding can:

ESS2-K-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live.

- Further Explanation: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.

ESS2-K-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

- Further Explanation: Emphasis is on local forms of severe weather.

ESS2-K-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

- Further Explanation: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.

Supporting Content

ESS3.A: Natural Resources

- Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (ESS2-K-1)

ESS3.B: Natural Hazards

- Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (ESS2-K-2)

ESS3.C: Human Impacts on Earth Systems

- Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (ESS2-K-3)

ETS1.A: Defining and Delimiting an Engineering Problem

- Asking questions, making observations, and gathering information are helpful in thinking about problems. (ESS2-K-2)

ETS1.B: Developing Possible Solutions

- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (ESS2-K-3)

ELEMENTARY SCHOOL (1ST GRADE)

PS: Physical Sciences

PS1-1 Waves

Performance Standards

Students who demonstrate understanding can:

PS1-1-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.

- Further Explanation: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.

PS1-1-2. Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated.

- Further Explanation: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.

PS1-1-3. Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light.

- Further Explanation: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).
- Content Limit: Assessment does not include the speed of light.

PS1-1-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.

- Further Explanation: Examples of devices could include a light source to send signals, paper cup and string "telephones," and a pattern of drum beats.
- Content Limit: Assessment does not include technological details for how communication devices work.

Supporting Content

PS4.A: Wave Properties

- Sound can make matter vibrate, and vibrating matter can make sound. (PS1-1-1)

PS4.B: Electromagnetic Radiation (light)

- Objects can be seen if light is available to illuminate them or if they give off their own light. (PS1-1-2)
- Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. (Boundary: The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to discuss the speed of light.) (PS1-1-3)

PS4.C: Information Technologies and Instrumentation

- People also use a variety of devices to communicate (send and receive information) over long distances. (PS1-1-4)

LS: Life Sciences

LS1-1 Molecules to Organisms: Structure and Processes

Performance Standards

Students who demonstrate understanding can:

LS1-1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.

- Further Explanation: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.

LS1-1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.

- Further Explanation: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).

LS1-1-3. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

- Further Explanation: Changes organisms go through during their life form a pattern.
- Content Limit: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.

Supporting Content

LS1.A: Structure and Function

- All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (LS1-1-1)

LS1.B: Growth and Development of Organisms

- Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (LS1-1-2)
- Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (LS1-1-3)

LS1.D: Information Processing

- Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (LS1-1-1)

LS2-1 Heredity: Inheritance and Variation of Traits

Performance Standards

Students who demonstrate understanding can:

LS2-1-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

- Further Explanation: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and, a particular breed of dog looks like its parents but is not exactly the same.
- Content Limit: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.

Supporting Content

LS3.A: Inheritance of Traits

- Young animals are very much, but not exactly like, their parents. Plants also are very much, but not exactly, like their parents. (LS2-1-1)

LS3.B: Variation of Traits

- Individuals of the same kind of plant or animal are recognizable as similar but can also vary in many ways. (LS2-1-1)

ESS: Earth and Space Sciences

ESS1-1 Earth's Place in the Universe

Performance Standards

Students who demonstrate understanding can:

ESS1-1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted.

- Further Explanation: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.
- Content Limit: Assessment of star patterns is limited to stars being seen at night and not during the day.

ESS1-1-2. Make observations at different times of year to relate the amount of daylight to the time of year.

- Further Explanation: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.
- Content Limit: Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.

Supporting Content

ESS1.A: The Universe and its Stars

- Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. (ESS1-1-1)

ESS1.B: Earth and the Solar System

- Seasonal patterns of sunrise and sunset can be observed, described, and predicted. (ESS1-1-2)
- Seasons are created by weather patterns for a particular region and time. Local patterns create 4 distinct seasons. (ESS1-1-2)

ELEMENTARY SCHOOL (2ND GRADE)

PS: Physical Sciences

PS1-2 Matter and Its Interactions

Performance Standards

Students who demonstrate understanding can:

PS1-2-1. Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

- Further Explanation: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.

PS1-2-2. Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

- Further Explanation: Examples of properties could include, strength, flexibility, hardness, texture, and absorbency.
- Content Limit: Assessment of quantitative measurements is limited to length.

PS1-2-3. Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.

- Further Explanation: Examples of pieces could include blocks, building bricks, or other assorted small objects.

PS1-2-4. Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

- Further Explanation: Examples of reversible changes could include materials such as water and butter at different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.

Supporting Content

PS1.A: Structure and Properties of Matter

- Different kinds of matter exist and many of them can be solid, liquid, or gas depending on temperature. Matter can be described and classified by its observable properties. (PS1-2-1)
- Different properties are suited to different purposes. (PS1-2-2),(PS1-2-3)
- A great variety of objects can be built up from a small set of pieces. (PS1-2-3)

PS1.B: Chemical Reactions

- Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not. (PS1-2-4)

LS: Life Sciences

LS1-2 Ecosystems: Interactions, Energy, and Dynamics

Performance Standards

Students who demonstrate understanding can:

LS1-2-1. Plan and conduct an investigation to determine if plants need sunlight and water to grow.

- Content Limit: Assessment is limited to testing one variable at a time.

LS1-2-2. Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

Supporting Content

LS2.A: Interdependent Relationships in Ecosystems

- Plants depend on water and light to grow. (LS1-2-1)
- Plants depend on animals for pollination or to move their seeds around. (LS1-2-2)

ETS1.B: Developing Possible Solutions

- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.(LS1-2-2)

LS2-2 Biological Adaptation: Unity and Diversity

Performance Standards

Students who demonstrate understanding can:

LS2-2-1. Make observations of plants and animals to compare the diversity of life in different habitats.

- Further Explanation: Emphasis is on the diversity of living things in each of a variety of different habitats.
- Content Limit: Assessment does not include specific animal and plant names in specific habitats.

Supporting Content

LS4.D: Biodiversity and Humans

- There are many different kinds of living things in any area, and they exist in different places on land and in water. (LS2-2-1)

ESS: Earth and Space Sciences

ESS1-2 Earth's Place in the Universe

Performance Standards

Students who demonstrate understanding can:

ESS1-2-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.

- Further Explanation: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and erosion of rocks, which occurs slowly.
- Content Limit: Assessment does not include quantitative measurements of timescales.

Supporting Content

ESS1.C: The History of Planet Earth

- Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. (ESS1-2-1)

ESS2-2 Earth's Systems

Performance Standards

Students who demonstrate understanding can:

ESS2-2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

- Further Explanation: Examples of solutions could include different designs of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.

ESS2-2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.

- Content Limit: Assessment does not include quantitative scaling in models.

ESS2-2-3. Obtain information to identify where water is found on Earth and that it can be solid, liquid or gas.

Supporting Content

ESS2.A: Earth Materials and Systems

- Wind and water can change the shape of the land. (ESS2-2-1)

ESS2.B: Plate Tectonics and Large-Scale System Interactions

- Maps show where things are located. One can map the shapes and kinds of land and water in any area. (ESS2-2-2)

ESS2.C: The Roles of Water in Earth's Surface Processes

- Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (ESS2-2-3)

ETS1.C: Optimizing the Design Solution

- Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (ESS2-2-1)

ELEMENTARY SCHOOL (3RD GRADE)

PS: Physical Sciences

PS1-3 Motion and Stability: Forces and Interactions

Performance Standards

Students who demonstrate understanding can:

PS1-3-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

- Further Explanation: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.
- Content Limit: Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.

PS1-3-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.

- Further Explanation: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.
- Content Limit: Assessment does not include technical terms such as period and frequency.

PS1-3-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.

- Further Explanation: Examples of an electric force could include the force on hair from an electrically charged balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between an electromagnet and steel paperclips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.
- Content Limit: Assessment is limited to forces produced by objects that can be manipulated by students, and electrical interactions are limited to static electricity.

PS1-3-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.

- Further Explanation: Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.

Supporting Content

PS2.A: Forces and Motion

- Each force acts on one particular object and has both strength and a direction. An object at rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. (Boundary: Qualitative and conceptual, but not quantitative additions of forces are used at this level.) (PS1-3-1)
- Force applied to an object can alter the position and motion of that object: revolve, rotate, float, sink, fall and at rest.(PS1-3-2)
- The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it. (Boundary: Technical terms, such as magnitude, velocity, momentum, and vector quantity, are not introduced at this level, but the concept that some quantities need both size and direction to be described is developed.) (PS1-3-2)

PS2.B: Types of Interactions

- Objects in contact exert forces on each other. (PS1-3-1)
- Electric and magnetic forces between a pair of objects do not require that the objects be in contact. The sizes of the forces in each situation depend on the properties of the objects and their distances apart and, for forces between two magnets, on their orientation relative to each other. (PS1-3-3, PS1-3-4)

LS: Life Sciences

LS1-3 Ecosystems: Interactions, Energy, and Dynamics

Performance Standards

Students who demonstrate understanding can:

LS1-3-1. Construct an argument that some animals form groups that help members survive

Supporting Content

LS2.D: Social Interactions and Group Behavior

- Being part of a group helps animals obtain food, defend themselves, and cope with changes. Groups may serve different functions and vary dramatically in size. (LS1-3-1)

LS2-3 Heredity: Inheritance and Variation of Traits

Performance Standards

Students who demonstrate understanding can:

LS2-3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

- Further Explanation: Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans.
- Content Limit: Assessment does not include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.

LS2-3-2. Use evidence to support the explanation that traits can be influenced by the environment.

- Further Explanation: Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may become overweight.

Supporting Content

LS3.A: Inheritance of Traits

- Many characteristics of organisms are inherited from their parents.(LS2-3-1)
- Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (LS2-3-2)

LS3.B: Variation of Traits

- Different organisms vary in how they look and function because they have different inherited information. (LS2-3-1)
- The environment also affects the traits that an organism develops. (LS2-3-2)

ESS: Earth and Space Sciences

ESS1-3 Earth's Systems

Performance Standards

Students who demonstrate understanding can:

ESS1-3-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

- Further Explanation: Examples of data could include average temperature, precipitation, and wind direction.
- Content Limit: Assessment of graphical displays is limited to pictographs and bar graphs. Assessment does not include climate change.

ESS1-3-2. Obtain and combine information to describe climates in different regions of the world.

Supporting Content

ESS2.D: Weather and Climate

- Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (ESS1-3-1)
- Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (ESS1-3-2)

ESS2-3 Earth and Human Activity

Performance Standards

Students who demonstrate understanding can:

ESS2-3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

- Further Explanation: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods.

Supporting Content

ESS3.B: Natural Hazards

- A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (ESS2-3-1)

ELEMENTARY SCHOOL (4TH GRADE)

PS: Physical Sciences

PS1-4 Energy

Performance Standards

Students who demonstrate understanding can:

PS1-4-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object.

- Content Limit: Assessment does not include quantitative measures of changes in the speed of an object or on any precise or quantitative definition of energy.

PS1-4-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

- Content Limit: Assessment does not include quantitative measurements of energy.

PS1-4-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide.

- Further Explanation: Emphasis is on the change in the energy due to the change in speed, not on the forces, as objects interact.
- Content Limit: Assessment does not include quantitative measurements of energy.

PS1-4-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

- Further Explanation: Examples of devices could include electric circuits that convert electrical energy into motion energy of a vehicle, light, or sound; and, a passive solar heater that converts light into heat. Examples of constraints could include the materials, cost, or time to design the device.
- Content Limit: Devices should be limited to those that convert motion energy to electric energy or use stored energy to cause motion or produce light or sound.

Supporting Content

PS3.A: Definitions of Energy

- The faster a given object is moving, the more energy it possesses. (PS1-4-1)
- Energy can be moved from place to place by moving objects or through sound, light, or electric currents. (PS1-4-2, PS1-4-3)

PS3.B: Conservation of Energy and Energy Transfer

- Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one object to another, thereby changing their motion. In such collisions, some energy is typically also transferred to the surrounding air; as a result, the air gets heated and sound is produced. (PS1-4-2, PS1-4-3)
- Light also transfers energy from place to place. (PS1-4-2)
- Energy can also be transferred from place to place by electric currents, which can then be used locally to produce motion, sound, heat, or light. The currents may have been produced to begin with by transforming the energy of motion into electrical energy. (PS1-4-2, PS1-4-4)

PS3.C: Relationship Between Energy and Forces

- When objects collide, the contact forces transfer energy so as to change the objects' motions. (PS1-4-3)

PS3.D: Energy in Chemical Processes and Everyday Life

- The expression "produce energy" typically refers to the conversion of stored energy into a desired form for practical use. (PS1-4-4)

ETS1.A: Defining Engineering Problems

- Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account.(PS1-4-4)

PS2-4 Waves

Performance Standards

Students who demonstrate understanding can:

PS2-4-1. Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.

- Further Explanation: Examples of models could include diagrams, analogies, and physical models using wire to illustrate wavelength and amplitude of waves.
- Content Limit: Assessment does not include interference effects, electromagnetic waves, non-periodic waves, or quantitative models of amplitude and wavelength.

PS2-4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.

- Content Limit: Assessment does not include knowledge of specific colors reflected and seen, the cellular mechanisms of vision, or how the retina works.

PS2-4-3. Generate and compare multiple solutions that use patterns to transfer information.

- Further Explanation: Examples of solutions could include drums sending coded information through sound waves, using a grid of 1's and 0's representing black and white to send information about a picture, and using Morse code to send text.

Supporting Content

PS4.A: Wave Properties

- Waves, which are regular patterns of motion, can be made in water by disturbing the surface. When waves move across the surface of deep water, the water goes up and down in place; there is no net motion in the direction of the wave except when the water meets a beach. (PS2-4-1)
- Waves of the same type can differ in amplitude (height of the wave) and wavelength (spacing between wave peaks). (PS2-4-1)

PS4.B: Electromagnetic Radiation

- An object can be seen when light reflected from its surface enters the eyes. (PS2-4-2)

PS4.C: Information Technologies and Instrumentation

- Digitized information can be transmitted over long distances without significant degradation. High-tech devices, such as computers or cell phones, can receive and decode information—convert it from digitized form to voice—and vice versa. (PS2-4-3)

ETS1.C: Optimizing the Design Solution

- Different solutions need to be tested in order to determine which of them best solves the problem, given the criteria and the constraints. (PS2-4-3)

LS: Life Sciences

LS1-4 Molecules to Organisms: Structure and Processes

Performance Standards

Students who demonstrate understanding can:

LS1-4-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

- Further Explanation: Examples of structures could include thorns, stems, roots, colored petals, heart, stomach, lung, brain, and skin.
- Content Limit: Assessment is limited to macroscopic structures within plant and animal systems.

LS1-4-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

- Further Explanation: Emphasis is on systems of information transfer.
- Content Limit: Assessment does not include the mechanisms by which the brain stores and recalls information or the mechanisms of how sensory receptors function.

Supporting Content

LS1.A: Structure and Function

- Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction. (LS1-4-1)
- Animals have various body systems with specific functions for sustaining life: skeletal, circulatory. respiratory, muscular, digestive, etc. (LS1-4-1).

LS1.D: Information Processing

- Different sense receptors are specialized for particular kinds of information, which may be then processed by the animal's brain. Animals are able to use their perceptions and memories to guide their actions. (LS1-4-2)

LS2-4 Ecosystems: Interactions, Energy, and Dynamics

Performance Standards

Students who demonstrate understanding can:

LS2-4-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

- Further Explanation: Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food. Examples of systems could include organisms, ecosystems, and the Earth.
- Content Limit: Assessment does not include molecular explanations.

Supporting Content

LS2.A: Interdependent Relationships in Ecosystems

- The food of almost any kind of animal can be traced back to plants. Organisms are related in food webs in which some animals eat plants for food and other animals eat the animals that eat plants. Some organisms, such as fungi and bacteria, break down dead organisms (both plants or plants parts and animals) and therefore operate as “decomposers.” Decomposition eventually restores (recycles) some materials back to the soil. Organisms can survive only in environments in which their particular needs are met. A healthy ecosystem is one in which multiple species of different types are each able to meet their needs in a relatively stable web of life. Newly introduced species can damage the balance of an ecosystem. (LS2-4-1)

LS2.B: Cycles of Matter and Energy Transfer in Ecosystems

- Matter cycles between the air and soil and among plants, animals, and microbes as these organisms live and die. Organisms obtain gases, and water, from the environment, and release waste matter (gas, liquid, or solid) back into the environment. (LS2-4-1)

ESS: Earth and Space Sciences

ESS1-4 Earth's Place in the Universe

Performance Standards

Students who demonstrate understanding can:

ESS1-4-1. Identify evidence from patterns in rock formations and fossils in rock layers for changes in a landscape over time to support an explanation for changes in a landscape over time.

- Further Explanation: Examples of evidence from patterns could include rock layers with marine shell fossils above rock layers with plant fossils and no shells, indicating a change from land to water over time; and, a canyon with different rock layers in the walls and a river in the bottom, indicating that over time a river cut through the rock.
- Content Limit: Assessment does not include specific knowledge of the mechanism of rock formation or memorization of specific rock formations and layers. Assessment is limited to relative time.

Supporting Content

ESS1.C: The History of Planet Earth

- Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed. (ESS1-4-1)
- There are three classifications of rocks produced within the rock cycle: sedimentary, metamorphic, and igneous. (ESS1-4-1).

ESS2-4 Earth's Systems

Performance Standards

Students who demonstrate understanding can:

ESS2-4-1. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

- Further Explanation: Examples of variables to test could include angle of slope in the downhill movement of water, amount of vegetation, speed of wind, relative rate of deposition, cycles of freezing and thawing of water, cycles of heating and cooling, and volume of water flow.
- Content Limit: Assessment is limited to a single form of weathering or erosion.

ESS2-4-2. Analyze and interpret data from maps to describe patterns of Earth's features.

- Further Explanation: Maps can include topographic maps of Earth's land and ocean floor, as well as maps of the locations of mountains, continental boundaries, volcanoes, and earthquakes.

Supporting Content

ESS2.A: Earth Materials and Systems

- Rainfall helps to shape the land and affects the types of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around. (ESS2-4-1)

ESS2.B: Plate Tectonics and Large-Scale System Interactions

- The locations of mountain ranges, deep ocean trenches, ocean floor structures, earthquakes, and volcanoes occur in patterns. Most earthquakes and volcanoes occur in bands that are often along the boundaries between continents and oceans. Major mountain chains form inside continents or near their edges. Maps can help locate the different land and water features areas of Earth. (ESS2-4-2)

ESS2.E: Biogeology

- Living things affect the physical characteristics of their regions. (ESS2-4-1)

ESS3-4 Earth and Human Activity

Performance Standards

Students who demonstrate understanding can:

ESS3-4-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

- Further Explanation: Examples of renewable energy resources could include wind energy, water behind dams, and sunlight; non-renewable energy resources are fossil fuels and atomic energy. Examples of environmental effects could include negative biological impacts of wind turbines, erosion due to deforestation, loss of habitat due to dams, loss of habitat due to surface mining, and air pollution from burning of fossil fuels.

ESS3-4-2. Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

- Further Explanation: Examples of solutions could include designing an earthquake resistant building and improving monitoring of volcanic activity.
- Content Limit: Assessment is limited to earthquakes, floods, tsunamis, and volcanic eruptions.

Supporting Content

ESS3.A: Natural Resources

- Energy and fuels that humans use are derived from natural sources, and their use affects the environment in multiple ways. Some resources are renewable over time, and others are not. (ESS3-4-1)

ESS3.B: Natural Hazards

- A variety of hazards result from natural processes (e.g., earthquakes, tsunamis, volcanic eruptions). Humans cannot eliminate the hazards but can take steps to reduce their impacts. (ESS3-4-2)

ETS1.B: Designing Solutions to Engineering Problems

- Testing a solution involves investigating how well it performs under a range of likely conditions. (ESS3-4-2)

ELEMENTARY SCHOOL (5TH GRADE)

PS: Physical Sciences

PS1-5 Matter and Its Interactions

Performance Standards

Students who demonstrate understanding can:

PS1-5-1. Develop a model to describe that matter is made of particles too small to be seen.

- Further Explanation: Examples of evidence supporting a model could include adding air to expand a basketball, compressing air in a syringe, dissolving sugar in water, and evaporating salt water.
- Content Limit: Assessment does not include the atomic-scale mechanism of evaporation and condensation or defining the unseen particles.

PS1-5-2. Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.

- Further Explanation: Examples of reactions or changes could include phase changes, dissolving, and mixing that form new substances.
- Content Limit: Assessment does not include distinguishing mass and weight.

PS1-5-3. Make observations and measurements to identify materials based on their properties.

- Further Explanation: Examples of materials to be identified could include baking soda and other powders, metals, minerals, and liquids. Examples of properties could include color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, and solubility; density is not intended as an identifiable property.
- Content Limit: Assessment does not include density or distinguishing mass and weight.

PS1-5-4. Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

Supporting Content

PS1.A: Structure and Properties of Matter

- Matter of any type can be subdivided into particles that are too small to see, but even then the matter still exists and can be detected by other means. A model showing that gases are made from matter particles that are too small to see and are moving freely around in space can explain many observations, including the inflation and shape of a balloon and the effects of air on larger particles or objects. (PS1-5-1)
- The amount (weight) of matter is conserved when it changes form, even in transitions in which it seems to vanish. (PS1-5-2)
- Measurements of a variety of properties can be used to identify materials. (Boundary: At this grade level, mass and weight are not distinguished, and no attempt is made to define the unseen particles or explain the atomic-scale mechanism of evaporation and condensation.) (PS1-5-3)

PS1.B: Chemical Reactions

- When two or more different substances are mixed, a new substance with different properties may be formed. (PS1-5-4)
- No matter what reaction or change in properties occurs, the total weight of the substances does not change. (Boundary: Mass and weight are not distinguished at this grade level.) (PS1-5-2)

PS2-5 Motion and Stability: Forces and Interactions

Performance Standards

Students who demonstrate understanding can:

PS2-5-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.

- Further Explanation: "Down" is a local description of the direction that points toward the center of the spherical Earth.
- Content Limit: Assessment does not include mathematical representation of gravitational force.

Supporting Content

PS2.B: Types of Interactions

- The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (PS2-5-1)

PS3-5 Energy

Performance Standards

Students who demonstrate understanding can:

PS3-5-1. Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

- Further Explanation: Examples of models could include diagrams, and flow charts.

Supporting Content

PS3.D: Energy in Chemical Processes and Everyday Life

- The energy released from food was once energy from the sun that was captured by plants in the chemical process that forms plant matter (from air and water). (PS3-5-1)

LS1.C: Organization for Matter and Energy Flow in Organisms

- Food provides animals with the materials they need for body repair and growth and the energy they need to maintain body warmth and for motion. (PS3-5-1)

LS: Life Sciences

LS1-5 Molecules to Organisms: Structure and Processes

Performance Standards

Students who demonstrate understanding can:

LS1-5-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

- Further Explanation: Emphasis is on the idea that plant matter comes mostly from air and water, not from the soil.

Supporting Content

LS1.C: Organization for Matter and Energy Flow in Organisms

- Plants acquire their material for growth chiefly from air and water. (LS1-5-1)

LS2-5 Biological Adaptation: Unity and Diversity

Performance Standards

Students who demonstrate understanding can:

LS2-5-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

- Further Explanation: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.
- Content Limit: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.

LS2-5-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

- Further Explanation: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.

LS2-5-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

- Further Explanation: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.

LS2-5-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

- Further Explanation: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.
- Content Limit: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.

Supporting Content

LS2.C: Ecosystem Dynamics, Functioning, and Resilience

- When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die. (LS2-5-4)

LS4.A: Evidence of Common Ancestry and Diversity

- Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (LS2-5-1)
- Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (LS2-5-1)

LS4.B: Natural Selection

- Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (LS2-5-2)

LS4.C: Adaptation

- For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (LS2-5-3)

LS4.D: Biodiversity and Humans

- Populations of animals are classified by their characteristics.(LS2-5-2)
- Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (LS2-5-4)

ESS: Earth and Space Sciences

ESS1-5 Earth's Place in the Universe

Performance Standards

Students who demonstrate understanding can:

ESS1-5-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth.

- Content Limit: Assessment is limited to relative distances, not sizes, of stars. Assessment does not include other factors that affect apparent brightness (such as stellar masses, age, or stage).

ESS1-5-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.

- Further Explanation: Examples of patterns could include the position and motion of Earth with respect to the sun and selected stars that are visible only in particular months.
- Content Limit: Assessment does not include causes of seasons.

Supporting Content

ESS1.A: The Universe and its Stars

- The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth. (ESS1-5-1)

ESS1.B: Earth and the Solar System

- The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year. (ESS1-5-2)

ESS2-5 Earth's Systems

Performance Standards

Students who demonstrate understanding can:

ESS2-5-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

- Further Explanation: Examples could include the influence of the ocean on ecosystems, landform shape, and climate; the influence of the atmosphere on landforms and ecosystems through weather and climate; and the influence of mountain ranges on winds and clouds in the atmosphere. The geosphere, hydrosphere, atmosphere, and biosphere are each a system.
- Content Limit: Assessment is limited to the interactions of two systems at a time.

ESS2-5-2. Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.

- Content Limit: Assessment is limited to oceans, lakes, rivers, glaciers, ground water, and polar ice caps, and does not include the atmosphere.

Supporting Content

ESS2.A: Earth Materials and Systems

- Earth's major systems are the geosphere (solid and molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (ESS2-5-1)

ESS2.C: The Roles of Water in Earth's Surface Processes

- Nearly all of Earth's available water is in the ocean. Most fresh water is in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere. (ESS2-5-2)

ESS3-5 Earth and Human Activity

Performance Standards

Students who demonstrate understanding can:

ESS3-5-1. Support, obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

Supporting Content

ESS3.C: Human Impacts on Earth Systems

- Human activities in agriculture, industry, and everyday life have effects on the land, vegetation, streams, ocean, air, and even outer space. Individuals and communities are doing things to help protect Earth's resources and environments. (ESS3-5-1)

MIDDLE SCHOOL (6-8)

PS: Physical Sciences

PS1-MS Matter and Its Interactions

Performance Standards

Students who demonstrate understanding can:

PS1-MS-1. Develop models to describe the atomic composition of simple molecules and extended structures.

- Further Explanation: Emphasis is on developing models of molecules that vary in complexity. Examples of simple molecules could include ammonia and methanol. Examples of extended structures could include sodium chloride or diamonds. Examples of molecular-level models could include drawings, 3D ball and stick structures, or computer representations showing different molecules with different types of atoms.
- Content Limit: Assessment does not include valence electrons and bonding energy, discussing the ionic nature of subunits of complex structures, or a complete depiction of all individual atoms in a complex molecule or extended structure.

PS1-MS-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.

- Further Explanation: Examples of reactions could include burning sugar or steel wool, fat reacting with sodium hydroxide, and mixing zinc with hydrogen chloride.
- Content Limit: Assessment is limited to analysis of the following properties: density, melting point, boiling point, solubility, flammability, and odor.

PS1-MS-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

- Further Explanation: Emphasis is on natural resources that undergo a chemical process to form the synthetic material. Examples of new materials could include new medicine, foods, and alternative fuels.
- Content Limit: Assessment is limited to qualitative information.

PS1-MS-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

- Further Explanation: Emphasis is on qualitative molecular-level models of solids, liquids, and gases to show that adding or removing thermal energy increases or decreases kinetic energy of the particles until a change of state occurs. Examples of models could include drawings and diagrams. Examples of particles could include molecules or inert atoms. Examples of pure substances could include water, carbon dioxide, and helium.

PS1-MS-5. Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.

- Further Explanation: Emphasis is on law of conservation of matter and on physical models or drawings, including digital forms, that represent atoms.
- Content Limit: Assessment does not include the use of atomic masses, balancing symbolic equations, or intermolecular forces.

PS1-MS-6. Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.

- Further Explanation: Emphasis is on the design, controlling the transfer of energy to the environment, and modification of a device using factors such as type and concentration of a substance. Examples of designs could involve chemical reactions such as dissolving ammonium chloride or calcium chloride.
- Content Limit: Assessment is limited to the criteria of amount, time, and temperature of substance in testing the device.

Supporting Content

PS1.A: Structure and Properties of Matter

- Substances are made from different types of atoms, which combine with one another in various ways. Atoms form molecules that range in size from two to thousands of atoms. (PS1-MS-1)
- Each pure substance has characteristic physical and chemical properties (for any bulk quantity under given conditions) that can be used to identify it. (PS1-MS-2, PS1-MS- 3)
- Gases and liquids are made of molecules or inert atoms that are moving about relative to each other. (PS1-MS-4)
- In a liquid, the molecules are constantly in contact with others; in a gas, they are widely spaced except when they happen to collide. In a solid, atoms are closely spaced and may vibrate in position but do not change relative locations. (PS1-MS- 4)
- Solids may be formed from molecules, or they may be extended structures with repeating subunits (e.q., crystals). (PS1-MS-1)
- The changes of state that occur with variations in temperature or pressure can be described and predicted using these models of matter. (PS1-MS-4)

PS1.B: Chemical Reactions

- Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants. (PS1-MS-1, PS1-MS-3, PS1-MS-5)
- The total number of each type of atom is conserved, and thus the mass does not change. (PS1-MS-5)
- Some chemical reactions release energy, others store energy. (PS1-MS-6)

PS3.A: Definitions of Energy

- The term “heat” as used in everyday language refers both to thermal energy (the motion of atoms or molecules with in a substance) and the transfer of that thermal energy from one object to another. In science, heat is used only for this second meaning; it refers to the energy transferred due to the temperature difference between two objects. (PS1-MS-4)
- The temperature of a system is proportional to the average internal kinetic energy and potential energy per atom or molecule (whichever is the appropriate building block for the system’s material). The details of that relationship depend on the type of atom or molecule and the interactions among the atoms in the material. Temperature is not a direct measure of a system’s total thermal energy. The total thermal energy (sometimes called total internal energy) of a system depends jointly on the temperature, the total number of atoms in the system, and the state of the material. (PS1-MS-6)

ETS1.B: Developing Possible Solutions

- A solution needs to be tested, and then modified on the basis of the test results in order to improve it. (PS1-MS-6)

- The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test results leads to greater refinement and ultimately to an optimal solution. (PS1-MS-6)

PS2-MS Motion and Stability: Forces and Interactions

Performance Standards

Students who demonstrate understanding can:

PS2-MS-1. Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

- Further Explanation: Examples of practical problems could include the impact of collisions between two cars, between a car and stationary objects, and between a meteor and a space vehicle.
- Content Limit: Assessment is limited to vertical or horizontal interactions in one dimension.

PS2-MS-2. Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

- Further Explanation: Emphasis is on balanced (Newton's First Law) and unbalanced forces in a system, qualitative comparisons of forces, mass and changes in motion (Newton's Second Law), frame of reference, and specification of units.
- Content Limit: Assessment is limited to forces and changes in motion in one-dimension in an inertial reference frame and to change in one variable at a time. Assessment does not include the use of trigonometry.

PS2-MS-3. Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.

- Further Explanation: Examples of devices that use electric and magnetic forces could include electromagnets, electric motors, or generators. Examples of data could include the effect of the number of turns of wire on the strength of an electromagnet, or the effect of increasing the number or strength of magnets on the speed of an electric motor.
- Content Limit: Assessment about questions that require quantitative answers is limited to proportional reasoning and algebraic thinking.

PS2-MS-4. Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

- Further Explanation: Examples of evidence for arguments could include data generated from simulations or digital tools; and charts displaying mass, strength of interaction, distance from the Sun, and orbital periods of objects within the solar system.
- Content Limit: Assessment does not include Newton's Law of Gravitation or Kepler's Laws.

PS2-MS-5. Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

- Further Explanation: Examples of this phenomenon could include the interactions of magnets, electrically-charged strips of tape, and electrically-charged pith balls. Examples of investigations could include first-hand experiences orsimulations.
- Content Limit: Assessment is limited to electric and magnetic fields, and limited to qualitative evidence for the existence of fields.

Supporting Content

PS2.A: Forces and Motion

- For any pair of interacting objects, the force exerted by the first object on the second object is equal in strength to the force that the second object exerts on the first, but in the opposite direction (Newton's third law). (PS2-MS-1)
- The motion of an object is determined by the sum of the forces acting on it; if the total force on the object is not zero, its motion will change. The greater the mass of the object, the greater the force needed to achieve the same change in motion. For any given object, a larger force causes a larger change in motion. (PS2-MS-2)
- All positions of objects and the directions of forces and motions must be described in an arbitrarily chosen reference frame and arbitrarily chosen units of size. In order to share information with other people, these choices must also be shared. (PS2-MS-2)

PS2.B: Types of Interactions

- Electric and magnetic (electromagnetic) forces can be attractive or repulsive, and their sizes depend on the magnitudes of the charges, currents, or magnetic strengths involved and on the distances between the interacting objects. (PS2-MS-3)
- Gravitational forces are always attractive. There is a gravitational force between any two masses, but it is very small except when one or both of the objects have large mass—e.g., Earth and the sun. (PS2-MS-4)
- Forces that act at a distance (electric, magnetic, and gravitational) can be explained by fields that extend through space and can be mapped by their effect on a test object (a charged object, or a ball, respectively). (PS2-MS-5)

PS3-MS Energy

Performance Standards

Students who demonstrate understanding can:

PS3-MS-1. Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

- Further Explanation: Emphasis is on descriptive relationships between kinetic energy and mass separately from kinetic energy and speed. Examples could include riding a bicycle at different speeds, rolling different sizes of rocks downhill, and getting hit by a wiffle ball versus a tennis ball.

PS3-MS-2. Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

- Further Explanation: Emphasis is on relative amounts of potential energy, not on calculations of potential energy. Examples of objects within systems interacting at varying distances could include: the Earth and either a roller coaster cart at varying positions on a hill or objects at varying heights on shelves, changing the direction/orientation of a magnet, and a balloon with static electrical charge being brought closer to a classmate's hair. Examples of models could include representations, diagrams, pictures, and written descriptions of systems.
- Content Limit: Assessment is limited to two objects and electric, magnetic, and gravitational interactions.

PS3-MS-3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.

- Further Explanation: Examples of devices could include an insulated box, a solar cooker, and a Styrofoam cup.

- Content Limit: Assessment does not include calculating the total amount of thermal energy transferred.

PS3-MS-4. Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.

- Further Explanation: Examples of experiments could include comparing final water temperatures after different masses of ice melted in the same volume of water with the same initial temperature, the temperature change of samples of different materials with the same mass as they cool or heat in the environment, or the same material with different masses when a specific amount of energy is added.
- Content Limit: Assessment does not include calculating the total amount of thermal energy transferred.

PS3-MS-5. Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

- Further Explanation: Examples of empirical evidence used in arguments could include an inventory or other representation of the energy before and after the transfer in the form of temperature changes or motion of object.
- Content Limit: Assessment does not include calculations of energy.

Supporting Content

PS3.A: Definitions of Energy

- Motion energy is properly called kinetic energy; it is proportional to the mass of the moving object and grows with the square of its speed. (PS3-MS-1)
- A system of objects may also contain stored (potential) energy, depending on their relative positions. (PS3-MS-2)
- Temperature is a measure of the average kinetic energy of particles of matter. The relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter present. (PS3-MS-3, PS3-MS-4)

PS3.B: Conservation of Energy and Energy Transfer

- When the motion energy of an object changes, there is inevitably some other change in energy at the same time. (PS3-MS-5)
- The amount of energy transfer needed to change the temperature of a matter sample by a given amount depends on the nature of the matter, the size of the sample, and the environment. (PS3-MS-4)
- Energy is spontaneously transferred out of hotter regions or objects and into colder ones. (PS3-MS-3)

PS3.C: Relationship Between Energy and Forces

- When two objects interact, each one exerts a force on the other that can cause energy to be transferred to or from the object. (PS3-MS-2)

ETS1.A: Defining and Delimiting an Engineering Problem

- The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that is likely to limit possible solutions. (PS3-MS-3)

ETS1.B: Developing Possible Solutions

- A solution needs to be tested, and then modified on the basis of the test results in order to improve it. There are systematic processes for evaluating solutions with respect to how well they meet criteria and constraints of a problem. (PS3-MS-3)

PS4-MS Waves

Performance Standards

Students who demonstrate understanding can:

PS4-MS-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

- Further Explanation: Emphasis is on describing waves with both qualitative and quantitative thinking.
- Content Limit: Assessment does not include electromagnetic waves and is limited to standard repeating waves.

PS4-MS-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

- Further Explanation: Emphasis is on both light and mechanical waves. Examples of models could include drawings, simulations, and written descriptions.
- Content Limit: Assessment is limited to qualitative applications pertaining to light and mechanical waves.

PS4-MS-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

- Further Explanation: Emphasis is on a basic understanding that waves can be used for communication purposes. Examples could include using fiber optic cable to transmit light pulses, radio wave pulses in WIFI devices, and conversion of stored binary patterns to make sound or text on a computer screen.
- Content Limit: Assessment does not include binary counting. Assessment does not include the specific mechanism of any given device.

Supporting Content

PS4.A: Wave Properties

- A simple wave has a repeating pattern with a specific wavelength, frequency, and amplitude. (PS4-MS-1)
- A sound wave needs a medium through which it is transmitted. (PS4-MS-2)

PS4.B: Electromagnetic Radiation

- When light shines on an object, it is reflected, absorbed, or transmitted through the object, depending on the object's material and the frequency (color) of the light. (PS4- MS-2)
- The path that light travels can be traced as straight lines, except at surfaces between different transparent materials (e.g., air and water, air and glass) where the light path bends. (PS4-MS-2)
- A wave model of light is useful for explaining brightness, color, and the frequency-dependent bending of light at a surface between media. (PS4-MS-2)
- However, because light can travel through space, it cannot be a matter wave, like sound or water waves. (PS4-MS-2)

PS4.C: Information Technologies and Instrumentation

- Digitized signals (sent as wave pulses) are a more reliable way to encode and transmit information. (PS4-MS-3)

LS: Life Sciences

LS1-MS Molecules to Organisms: Structure and Processes

Performance Standards

Students who demonstrate understanding can:

MS-LS1-1. Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

- Further Explanation: Emphasis is on developing evidence that living things are made of cells, distinguishing between living and non-living cells, and understanding that living things may be made of one cell or many and varied cells.

MS-LS1-2. Develop and use a model to describe the function of a cell as a whole and ways parts of cells contribute to the function.

- Further Explanation: Emphasis is on the cell functioning as a whole system and the primary role of identified parts of the cell, specifically the nucleus, chloroplasts, mitochondria, cell membrane, and cell wall. These are visible with a light microscope.
- Content Limit: Assessment of organelle structure/function relationships is limited to the cell wall and cell membrane. Assessment of the function of the other organelles is limited to their relationship to the whole cell. Assessment does not include the biochemical function of cells or cell parts.

MS-LS1-3. Use argument supported by evidence for how a living organism is a system of interacting subsystems composed of groups of cells.

- Further Explanation: Emphasis is on the conceptual understanding that cells form tissues and tissues form organs specialized for particular body functions. Examples could include the interaction of subsystems within a system and the normal functioning of those systems.
- Content Limit: Assessment does not include the mechanism of one body system independent of others. Assessment is not focused on human body systems.

MS-LS1-4. Construct a scientific argument based on evidence to defend a claim of life for a specific object or organism.

- Further Explanation: Examples should include both biotic and abiotic items, and should be defended using accepted characteristics of life.
- Content Limit: Assessment does not include viruses, or other disputedexamples.

MS-LS1-5. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

- Further Explanation: Emphasis is on tracing movement of matter and flow of energy.
- Content Limit: Assessment does not include the biochemical mechanisms of photosynthesis.

MS-LS1-6. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

- Further Explanation: Emphasis is on describing that molecules are broken apart and put back together and that in this process, energy is released. Also understanding that the elements in the products are the same as the elements in the reactants .
- Content Limit: Assessment does not include details of the chemical reactions for photosynthesis or respiration.

Supporting Content

LS1.A: Structure and Function

- All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (LS1-MS-1)
- Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell. (LS1-MS-2)
- In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions. (LS1-MS-3)

LS1.B: Characteristics of Living Things

- Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (LS1-MS-4)
- Living things share certain characteristics. (These include response to environment, reproduction, energy use, growth and development, life cycles, made of cells, etc.) (LS1-MS-4)

LS1.C: Organization for Matter and Energy Flow in Organisms

- Plants, algae (including phytoplankton), and many microorganisms use the energy from light to make sugars (food) from carbon dioxide from the atmosphere and water through the process of photosynthesis, which also releases oxygen. These sugars can be used immediately or stored for growth or later use. (LS1-MS-5)
- Within individual organisms, food moves through a series of chemical reactions (cellular respiration) in which it is broken down and rearranged to form new molecules, to support growth, or to release energy. (LS1-MS-6)

LS2-MS Ecosystems: Interactions, Energy, and Dynamics

Performance Standards

Students who demonstrate understanding can:

LS2-MS-1. Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.

- Further Explanation: Emphasis is on cause and effect relationships between resources and growth of individual organisms and the numbers of organisms in ecosystems during periods of abundant and scarce resources.

LS2-MS-2. Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

- Further Explanation: Emphasis is on predicting consistent patterns of interactions in different ecosystems in terms of the relationships among and between organisms and abiotic components of ecosystems. Examples of types of interactions could include competitive, predatory, and mutually beneficial.

LS2-MS-3. Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

- Further Explanation: Emphasis is on describing the conservation of matter and flow of energy into and out of various ecosystems, and on defining the boundaries of the system.
- Content Limit: Assessment does not include the use of chemical reactions to describe the processes.

LS2-MS-4. Develop a model to describe the flow of energy through the trophic levels of an ecosystem.

- Further Explanation: Emphasis is on describing the transfer of mass and energy beginning with producers, moving to primary and secondary consumers, and ending with decomposers.
- Content Limit: Assessment does not include the use of chemical reactions to describe the processes.

LS2-MS-5. Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

- Further Explanation: Emphasis is on recognizing patterns in data and making warranted inferences about changes in populations, and on evaluating empirical evidence supporting arguments about changes to ecosystems.

LS2-MS-6. Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

- Further Explanation: Examples of ecosystem services could include water purification, nutrient recycling, and prevention of soil erosion. Examples of design solution constraints could include scientific, economic, and socialconsiderations.

Supporting Content

LS2.A: Interdependent Relationships in Ecosystems

- Organisms, and populations of organisms, are dependent on their environmental interactions both with other living things and with nonliving factors. (LS2-MS-1)
- In any ecosystem, organisms and populations with similar requirements for food, water, oxygen, or other resources may compete with each other for limited resources, access to which consequently constrains their growth and reproduction. (LS2-MS-1)
- Growth of organisms and population increases are limited by access to resources. (LS2-MS-1)
- Similarly, predatory interactions may reduce the number of organisms or eliminate whole populations of organisms. Mutually beneficial interactions, in contrast, may become so interdependent that each organism requires the other for survival. Although the species involved in these competitive, predatory, and mutually beneficial interactions vary across ecosystems, the patterns of interactions of organisms with their environments, both living and nonliving, are shared. (LS2-MS-2)

LS2.B: Cycle of Matter and Energy Transfer in Ecosystems

- Food webs are models that demonstrate how matter and energy is transferred between producers, consumers, and decomposers as the three groups interact within an ecosystem. Transfers of matter into and out of the physical environment occur at every level. Decomposers recycle nutrients from dead plant or animal matter back to the soil in terrestrial environments or to the water in aquatic environments. The atoms that make up the organisms in an ecosystem are cycled repeatedly between the living and nonliving parts of the ecosystem. (LS2-MS-3)
- Food webs can be broken down into multiple energy pyramids. Concepts should include the 10% rule of energy and biomass transfer between trophic levels and the environment. (LS2-MS-4)

LS2.C: Ecosystem Dynamics, Functioning, and Resilience

- Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations. (LS2-MS-5)
- Biodiversity describes the variety of species found in Earth's terrestrial and oceanic ecosystems. The completeness or integrity of an ecosystem's biodiversity is often used as a measure of its health. (LS2-MS-6)

LS4.D: Biodiversity and Humans

- Changes in biodiversity can influence humans' resources, such as food, energy, and medicines, as well as ecosystem services that humans rely on—for example, water purification and recycling. (LS2-MS-6)

ETS1.B: Developing Possible Solutions

- There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. (LS2-MS-6)

LS3-MS Heredity: Inheritance and Variation of Traits

Performance Standards

Students who demonstrate understanding can:

LS3-MS-1. Develop and use a model to describe why mutations may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

- Further Explanation: Emphasis is on conceptual understanding that changes in genetic material may result in making different proteins.
- Content Limit: Assessment does not include specific changes at the molecular level, mechanisms for protein synthesis, or specific types of mutations.

LS3-MS-2. Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

- Further Explanation: Emphasis is on using models such as Punnett squares, diagrams, and simulations to describe the cause and effect relationship of gene transmission from parent(s) to offspring and resulting genetic variation.

Supporting Content

LS1.B: Growth and Development of Organisms

- Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (LS3-MS-2)

LS3.A: Inheritance of Traits

- Genes are located in the chromosomes of cells, with each chromosome pair containing two variants of each of many distinct genes. Each distinct gene chiefly controls the production of specific proteins, which in turn affects the traits of the individual. Changes (mutations) to genes can result in changes to proteins, which can affect the structures and functions of the organism and thereby change traits. (LS3-MS-1)
- Variations of inherited traits between parent and offspring arise from genetic differences that result from the subset of chromosomes (and therefore genes) inherited. (LS3-MS-2)

LS3.B: Variation of Traits

- In sexually reproducing organisms, each parent contributes half of the genes acquired (at random) by the offspring. Individuals have two of each chromosome and hence two alleles of each gene, one acquired from each parent. These versions may be identical or may differ from each other. (LS3-MS-2)

- In addition to variations that arise from sexual reproduction, genetic information can be altered because of mutations. Though rare, mutations may result in changes to the structure and function of proteins. Some changes are beneficial, others harmful, and some neutral to the organism. (LS3-MS-1)

LS4-MS Biological Adaptation: Unity and Diversity

Performance Standards

Students who demonstrate understanding can:

LS4-MS-1. Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

- Further Explanation: Emphasis is on finding patterns of changes in the level of complexity of anatomical structures in organisms and the chronological order of fossil appearance in the rock layers.
- Content Limit: Assessment does not include the names of individual species or geological eras in the fossil record.

LS4-MS-2. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer relationships.

- Further Explanation: Emphasis is on explanations of the relationships among organisms in terms of similarity or differences of the gross appearance of anatomical structures.

LS4-MS-3. Analyze displays of pictorial data to compare patterns of similarities in the anatomical structures across multiple species of similar classification levels to identify relationships.

- Further Explanation: Emphasis is on inferring general patterns of relatedness among structures of different organisms by comparing the appearance of diagrams or pictures.
- Content Limit: Assessment of comparisons is limited to gross appearance of anatomical structures within genus and species levels. No memorization of classification levels is required.

LS4-MS-4. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

- Further Explanation: Emphasis is on using concepts of natural selection like overproduction of offspring, passage of time, variation in a population, selection of favorable traits, and heritability of traits.

LS4-MS-5. Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.

- Further Explanation: Emphasis is on synthesizing information from reliable sources about the influence of humans on genetic outcomes in artificial selection (such as genetic modification, animal husbandry, gene therapy); and, on the impacts these technologies have on society as well as the technologies leading to these scientific discoveries.

LS4-MS-6. Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

- Further Explanation: Emphasis is on using mathematical models, probability statements, and proportional reasoning to support explanations of trends in changes to populations over time. Examples could include Peppered moth population changes before and after the industrial revolution.
- Content Limit: Assessment does not include Hardy Weinberg calculations.

Supporting Content

LS4.A: Classification of Organisms

- The collection of fossils and their placement in chronological order is known as the fossil record and documents the change of many life forms throughout the history of the Earth. Anatomical similarities and differences between various organisms living today and between them and organisms in the fossil record enable the classification of living things. (LS4-MS-1, LS4-MS-2)
- Scientific genus and species level names indicate a degree of relationship. (LS4-MS-3)

LS4.B: Natural Selection

- Natural selection leads to the predominance of certain traits in a population, and the suppression of others. (LS4-MS-4)
- In artificial selection, humans have the capacity to influence certain characteristics of organisms by selective breeding. One can choose desired parental traits determined by genes, which are then passed on to offspring. (LS4-MS-5)

LS4.C: Adaptation

- Adaptation by natural selection acting over generations is one important process by which species change over time in response to changes in environmental conditions. Traits that support successful survival and reproduction in the new environment become more common; those that do not become less common. Thus, the distribution of traits in a population changes. (LS4-MS-6)

ESS: Earth and Space Sciences

ESS1-MS Earth's Place in the Universe

Performance Standards

Students who demonstrate understanding can:

ESS1-MS-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

- Further Explanation: Examples of models can be physical, graphical, or conceptual.

ESS1-MS-2. Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

- Further Explanation: Emphasis for the model is on gravity as the force that holds together the solar system and Milky Way galaxy and controls orbital motions within them. Examples of models can be physical (such as the analogy of distance along a football field or computer visualizations of elliptical orbits) or conceptual (such as mathematical proportions relative to the size of familiar objects such as students' school or state).
- Content Limit: Assessment does not include Kepler's Laws of orbital motion or the apparent retrograde motion of the planets as viewed from Earth.

ESS1-MS-3. Analyze and interpret data to determine scale properties of objects in the solar system.

- Further Explanation: Emphasis is on the analysis of data from Earth-based instruments, space-based telescopes, and spacecraft to determine similarities and differences among solar system objects. Examples of scale properties include the sizes of an object's layers (such as crust and atmosphere), surface features (such as volcanoes), and orbital radius. Examples of data include statistical information, drawings and photographs, and models.
- Content Limit: Assessment does not include recalling facts about properties of the planets and other solar system bodies.

ESS1-MS-4. Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's history.

- Further Explanation: Emphasis is on how analyses of rock formations and the fossils they contain are used to establish relative ages of major events in Earth's history. Examples of Earth's major events could range from being very recent (such as the last Ice Age or the earliest fossils of homo sapiens) to very old (such as the formation of Earth or the earliest evidence of life). Examples can include the formation of mountain chains and ocean basins, the evolution or extinction of particular living organisms, or large volcanic eruptions.
- Content Limit: Assessment does not include recalling the names of specific periods or epochs and events within them.

Supporting Content

ESS1.A: The Universe and Its Stars

- Patterns of the apparent motion of the sun, the moon, and stars in the sky can be observed, described, predicted, and explained with models. (ESS1-MS-1)
- Earth and its solar system are part of the Milky Way galaxy, which is one of many galaxies in the universe. (ESS1-MS-2)

ESS1.B: Earth and the Solar System

- The solar system consists of the sun and a collection of objects, including planets, their moons, and asteroids that are held in orbit around the sun by its gravitational pull on them. (ESS1-MS-2, ESS1-MS-3)
- This model of the solar system can explain eclipses of the sun and the moon. Earth's spin axis is fixed in direction over the short-term but tilted relative to its orbit around the sun. The seasons are a result of that tilt and are caused by the differential intensity of sunlight on different areas of Earth across the year. (ESS1-MS-1)
- The solar system appears to have formed from a disk of dust and gas, drawn together by gravity. (ESS1-MS-2)

ESS1.C: The History of Planet Earth

- The geologic time scale interpreted from rock strata provides a way to organize Earth's history. Analyses of rock strata and the fossil record provide only relative dates, not an absolute scale. (ESS1-MS-4)

ESS2-MS Earth's Systems

Performance Standards

Students who demonstrate understanding can:

ESS2-MS-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

- Further Explanation: Emphasis is on the processes of melting, crystallization, weathering, deformation, and sedimentation, which act together to form minerals and rocks through the cycling of Earth's materials.
- Content Limit: Assessment does not include the identification and naming of minerals.

ESS2-MS-2. Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

- Further Explanation: Emphasis is on how processes change Earth's surface at time and spatial scales that can be large (such as slow plate motions or the uplift of large mountain ranges) or small (such as rapid landslides or microscopic geochemical reactions), and how many geoscience processes (such as earthquakes, volcanoes, and meteor impacts) usually behave gradually but are punctuated by catastrophic events. Examples of geoscience processes include surface weathering and deposition by the movements of water, ice, and wind. Emphasis is on geoscience processes that shape local geographic features, where appropriate.

ESS2-MS-3. Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

- Further Explanation: Examples of data include similarities of rock and fossil types on different continents, the shapes of the continents (including continental shelves), and the locations of ocean structures (such as ridges, fracture zones, and trenches).
- Content Limit: Paleomagnetic anomalies in oceanic and continental crust are not assessed.

ESS2-MS-4. Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.

- Further Explanation: Emphasis is on the ways water changes its state as it moves through the multiple pathways of the hydrologic cycle. Examples of models can be conceptual or physical.
- Content Limit: A quantitative understanding of the latent heats of vaporization and fusion is not assessed.

ESS2-MS-5. Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.

- Further Explanation: Emphasis is on how air masses flow from regions of high pressure to low pressure, causing weather (defined by temperature, pressure, humidity, precipitation, and wind) at a fixed location to change over time, and how sudden changes in weather can result when different air masses collide. Emphasis is on how weather can be predicted within probabilistic ranges. Examples of data can be provided to students (such as weather maps, diagrams, and visualizations) or obtained through laboratory experiments (such as with condensation).
- Content Limit: Assessment does not include recalling the names of cloud types or weather symbols used on weather maps or the reported diagrams from weather stations.

ESS2-MS-6. Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.

- Further Explanation: Emphasis is on how patterns vary by latitude, altitude, and geographic land distribution. Emphasis of atmospheric circulation is on the sunlight- driven latitudinal banding, the Coriolis effect, and resulting prevailing winds; emphasis of ocean circulation is on the transfer of heat by the global ocean convection cycle, which is constrained by the Coriolis effect and the outlines of continents. Examples of models can be diagrams, maps and globes, or digital representations.
- Content Limit: Assessment does not include the dynamics of the Coriolis effect.

Supporting Content

ESS1.C: The History of Planet Earth

- Tectonic processes continually generate new ocean sea floor at ridges and destroy old sea floor at trenches. (ESS2-MS-3)

ESS2.A: Earth's Materials and Systems

- All Earth processes are the result of energy flowing and matter cycling within and among the planet's systems. This energy is derived from the sun and Earth's hot interior. The energy that flows and matter that cycles produce chemical and physical changes in Earth's materials and living organisms. (ESS2-MS-1)
- The planet's systems interact over scales that range from microscopic to global in size, and they operate over fractions of a second to billions of years. These interactions have shaped Earth's history and will determine its future. (ESS2-MS-2)

ESS2.B: Plate Tectonics and Large-Scale System Interactions

- Maps of ancient land and water patterns, based on investigations of rocks and fossils, make clear how Earth's plates have moved great distances, collided, and spread apart. (ESS2-MS-3)

ESS2.C: The Roles of Water in Earth's Surface Processes

- Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. (ESS2-MS-4)
- The complex patterns of the changes and the movement of water in the atmosphere, determined by winds, landforms, and ocean temperatures and currents, are major determinants of local weather patterns. (ESS2-MS-5)
- Global movements of water and its changes in form are propelled by sunlight and gravity. (ESS2-MS-4)

- Variations in density due to variations in temperature and salinity drive a global pattern of interconnected ocean currents. (ESS2-MS-6)
- Water's movements—both on the land and underground—cause weathering and erosion, which change the land's surface features and create underground formations. (ESS2-MS-2)

ESS2.D: Weather and Climate

- Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns. (ESS2-MS-6)
- Because these patterns are so complex, weather can only be predicted using probability. (ESS2-MS-5)
- The ocean exerts a major influence on weather and climate by absorbing energy from the sun, releasing it over time, and globally redistributing it through ocean currents. (ESS2-MS-6)

ESS3-MS Earth and Human Activity

Performance Standards

Students who demonstrate understanding can:

ESS3-MS-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

- Further Explanation: Emphasis is on how these resources are limited and typically non-renewable, and how their distributions are changing as a result of removal by humans. Examples of uneven distributions of resources as a result of past processes include but are not limited to petroleum (locations of the burial of organic marine sediments and subsequent geologic traps), metal ores (locations of past volcanic and hydrothermal activity associated with subduction zones), and soil (locations of active weathering and/or deposition of rock).

ESS3-MS-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

- Further Explanation: Emphasis is on how some natural hazards, such as volcanic eruptions and severe weather, are preceded by phenomena that allow for reliable predictions, but others, such as earthquakes, occur suddenly and with no notice, and thus are not yet predictable. Examples of natural hazards can be taken from interior processes (such as earthquakes and volcanic eruptions), surface processes (such as mass wasting and tsunamis), or severe weather events (such as hurricanes, tornadoes, and floods). Examples of data can include the locations, magnitudes, and frequencies of the natural hazards. Examples of technologies can be global (such as satellite systems to monitor hurricanes or forest fires) or local (such as building basements in tornado-prone regions or reservoirs to mitigate droughts).

ESS3-MS-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

- Further Explanation: Examples of the design process include examining human environmental impacts, assessing the kinds of solutions that are feasible, and designing and evaluating solutions that could reduce that impact. Examples of human impacts can include water usage (such as the withdrawal of water from streams and aquifers or the construction of dams and levees), land usage (such as urban development, agriculture, or the removal of wetlands), and pollution (such as of the air, water, or land).

ESS3-MS-4. Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

- Further Explanation: Examples of evidence include grade-appropriate databases on human populations and the rates of consumption of food and natural resources (such as freshwater, mineral, and energy). Examples of impacts can include changes to the appearance, composition, and structure of Earth's systems as well as the rates at which they change. The consequences of increases in human populations and consumption of natural resources are described by science, but science does not make the decisions for the actions society takes.

ESS3-MS-5. Ask questions to interpret evidence of the factors that cause climate variability over time.

- Further Explanation: Examples of factors include human activities (such as fossil fuel combustion and changes in land use) and natural processes (such as changes in incoming solar radiation and volcanic activity). Examples of evidence can include tables, graphs, and maps of global and regional temperatures, atmospheric levels of gases such as carbon dioxide and methane, and natural resource use.

Supporting Content

ESS3.A: Natural Resources

- Humans depend on Earth's land, ocean, atmosphere, and biosphere for many different resources. Minerals, fresh water, and biosphere resources are limited, and many are not renewable or replaceable over human lifetimes. These resources are distributed unevenly around the planet as a result of past geologic processes. (ESS3-MS-1)

ESS3.B: Natural Hazards

- Mapping the history of natural hazards in a region, combined with an understanding of related geologic forces can help forecast the locations and likelihoods of future events. (ESS3-MS-2)

ESS3.C: Human Impacts on Earth Systems

- Human activities can have consequences (positive and negative) on the biosphere, sometimes altering natural habitats and causing the extinction of other species. (ESS3-MS-3)
- Technology and engineering can potentially mitigate impacts on Earth's systems as both human populations and per-capita consumption of natural resources increase. (ESS3-MS-3, ESS3-MS-4)
- Mitigating current changes in climate depends on understanding climate science. Current scientific models indicate that human activities, such as the release of greenhouse gases from fossil fuel combustion, are the primary factors in the present-day measured rise in Earth's mean surface temperature. Natural activities, such as changes in incoming solar radiation, also contribute to changing global temperatures. (ESS3-MS-5)

HIGH SCHOOL (9-12)

LS: Life Sciences (Biology)

LS1-HS Molecules to Organisms: Structure and Processes

Performance Standards

Students who demonstrate understanding can:

LS1-HS-1. Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells.

- Further Explanation: Emphasis is on the structure of the double helix, the pairing and sequencing of the nitrogenous bases, transcription, translation, and protein synthesis.
- Content Limit: Assessment does not include identification of specific cell or tissue types, whole body systems, specific protein structures and functions, or the biochemistry of protein synthesis.

LS1-HS-2. Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.

- Further Explanation: Emphasis is on functions at the organism system level such as nutrient uptake, water delivery, and organism movement in response to neural stimuli. An example of an interacting system could be an artery depending on the proper function of elastic tissue and smooth muscle to regulate and deliver the proper amount of blood within the circulatory system.
- Content Limit: Assessment does not include interactions and functions at the molecular or chemical reaction level.

LS1-HS-3. Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.

- Further Explanation: Examples of investigations could include heart rate response to exercise, stomate response to moisture and temperature, and root development in response to water levels.
- Content Limit: Assessment does not include the cellular processes involved in the feedback mechanism.

LS1-HS-4. Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

- Content Limit: Assessment does not include specific gene control mechanisms or rote memorization of the steps of mitosis.

LS1-HS-5. Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

- Further Explanation: Emphasis is on illustrating inputs and outputs of matter and the transfer and transformation of energy in photosynthesis by plants and other photosynthesizing organisms. Examples of models could include diagrams, chemical equations, and conceptual models.
- Content Limit: Assessment does not include specific biochemical steps.

LS1-HS-6. Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

- Further Explanation: Emphasis is on using evidence from models and simulations to support explanations.
- Content Limit: Assessment does not include the details of the specific chemical reactions or identification of macromolecules.

LS1-HS-7. Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.

- Further Explanation: Emphasis is on the conceptual understanding of the inputs and outputs of the process of cellular respiration.
- Content Limit: Assessment should not include identification of the steps or specific processes involved in cellular respiration.

Supporting Content

LS1.A: Structure and Function

- Systems of specialized cells within organisms help them perform the essential functions of life. (LS1-HS-1)
- All cells contain genetic information in the form of DNA molecules. Genes are regions in the DNA that contain the instructions that code for the formation of proteins, which carry out most of the work of cells. (LS1-HS-1)
- Multicellular organisms have a hierarchical structural organization, in which any one system is made up of numerous parts and is itself a component of the next level. (LS1- HS-2)
- Feedback mechanisms maintain a living system's internal conditions within certain limits and mediate behaviors, allowing it to remain alive and functional even as external conditions change within some range. Feedback mechanisms can encourage (through positive feedback) or discourage (negative feedback) what is going on inside the living system. (LS1-HS-3)

LS1.B: Growth and Development of Organisms

- In multicellular organisms individual cells grow and then divide via a process called mitosis, thereby allowing the organism to grow. The organism begins as a single cell (fertilized egg) that divides successively to produce many cells, with each parent cell passing identical genetic material (two variants of each chromosome pair) to both daughter cells. Cellular division and differentiation produce and maintain a complex organism, composed of systems of tissues and organs that work together to meet the needs of the whole organism. (LS1-HS-4)

LS1.C: Organization for Matter and Energy Flow in Organisms

- The process of photosynthesis converts light energy to stored chemical energy by converting carbon dioxide plus water into sugars plus released oxygen. (LS1-HS-5)
- The sugar molecules thus formed contain carbon, hydrogen, and oxygen: their hydrocarbon backbones are used to make amino acids and other carbon-based molecules that can be assembled into larger molecules (such as proteins or DNA), used for example to form new cells. (LS1-HS-6)
- As matter and energy flow through different organizational levels of living systems, chemical elements are recombined in different ways to form different products. (LS1- HS-6, LS1-HS-7)
- As a result of these chemical reactions, energy is transferred from one system of interacting molecules to another. Cellular respiration is a chemical process in which the bonds of food molecules and oxygen molecules are broken and new compounds are formed that can transport energy to cells. Cellular respiration also releases the energy needed to maintain body temperature despite ongoing energy transfer to the surrounding environment. (LS1-HS-7)

LS2-HS Ecosystems: Interactions, Energy, and Dynamics

Performance Standards

Students who demonstrate understanding can:

LS2-HS-1. Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

- Further Explanation: Emphasis is on quantitative analysis and comparison of the relationships among interdependent factors including boundaries, resources, climate, and competition. Examples of mathematical comparisons could include graphs, charts, histograms, and population changes gathered from simulations or historical data sets.
- Content Limit: Assessment does not include deriving mathematical equations to make comparisons.

LS2-HS-2. Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

- Further Explanation: Examples of mathematical representations include finding the average, determining trends, and using graphical comparisons of multiple sets of data.
- Content Limit: Assessment is limited to provided data.

LS2-HS-3. Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

- Further Explanation: Emphasis is on conceptual understanding of the role of aerobic and anaerobic respiration in different environments.
- Content Limit: Assessment does not include the specific chemical processes of either aerobic or anaerobic respiration.

LS2-HS-4. Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.

- Further Explanation: Emphasis is on using a mathematical model of stored energy in biomass to describe the transfer of energy from one trophic level to another and that matter and energy are conserved as matter cycles and energy flows through ecosystems. Emphasis is on atoms and molecules such as carbon, oxygen, hydrogen and nitrogen being conserved as they move through an ecosystem.
- Content Limit: Assessment is limited to proportional reasoning to describe the cycling of matter and flow of energy.

LS2-HS-5. Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

- Further Explanation: Examples of models could include simulations and mathematical models.
- Content Limit: Assessment does not include the specific chemical steps of photosynthesis and respiration.

LS2-HS-6. Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

- Further Explanation: Examples of changes in ecosystem conditions could include modest biological or physical changes, such as a seasonal flood; and extreme changes, such as volcanic eruption or sea level rise.

LS2-HS-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

- Further Explanation: Examples of human activities can include urbanization, building dams, and dissemination of invasive species, utilization of non-renewable resources as opposed to renewable resource.

LS2-HS-8. Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce.

- Further Explanation: Emphasis is on: (1) distinguishing between group and individual behavior, (2) identifying evidence supporting the outcomes of group behavior, and (3) developing logical and reasonable arguments based on evidence. Examples of group behaviors could include flocking, schooling, herding, and cooperative behaviors such as hunting, migrating, and swarming.

Supporting Content

LS2.A: Interdependent Relationships in Ecosystems

- Ecosystems have carrying capacities, which are limits to the numbers of organisms and populations they can support. These limits result from such factors as the availability of living and nonliving resources and from such challenges such as predation, competition, and disease. Organisms would have the capacity to produce populations of great size were it not for the fact that environments and resources are finite. This fundamental tension affects the abundance (number of individuals) of species in any given ecosystem. (LS2-HS-1, LS2-HS-2)

LS2.B: Cycles of Matter and Energy Transfer in Ecosystems

- Photosynthesis and cellular respiration (including anaerobic processes) provide most of the energy for life processes. (LS2-HS-3)
- Plants or algae form the lowest level of the food web. At each link upward in a food web, only a small fraction of the matter consumed at the lower level is transferred upward, to produce growth and release energy in cellular respiration at the higher level. Given this inefficiency, there are generally fewer organisms at higher levels of a food web. Some matter reacts to release energy for life functions, some matter is stored in newly made structures, and much is discarded. The chemical elements that make up the molecules of organisms pass through food webs and into and out of the atmosphere and soil, and they are combined and recombined in different ways. At each link in an ecosystem, matter and energy are conserved. (LS2-HS-4)
- Photosynthesis and cellular respiration are important components of the carbon cycle, in which carbon is exchanged among the biosphere, atmosphere, oceans, and geosphere through chemical, physical, geological, and biological processes. (LS2-HS-5)

LS2.C: Ecosystem Dynamics, Functioning, and Resilience

- A complex set of interactions within an ecosystem can keep its numbers and types of organisms relatively constant over long periods of time under stable conditions. If a modest biological or physical disturbance to an ecosystem occurs, it may return to its more or less original status (i.e., the ecosystem is resilient), as opposed to becoming a very different ecosystem. Extreme fluctuations in conditions or the size of any population, however, can challenge the functioning of ecosystems in terms of resources and habitat availability. (LS2-HS-2, LS2-HS-6)
- Moreover, anthropogenic changes (induced by human activity) in the environment—including habitat destruction, pollution, introduction of invasive species, overexploitation, and climate change—can disrupt an ecosystem and threaten the survival of some species. (LS2-HS-7)

LS2.D: Social Interactions and Group Behavior

- Group behavior has evolved because membership can increase the chances of survival for individuals and their genetic relatives, gene pool. (LS2-HS-8)

LS4.D: Biodiversity and Humans

- Biodiversity is increased by the formation of new species (speciation) and decreased by the loss of species (extinction). (LS2-HS-7)
- Sustaining ecosystem health and biodiversity is essential to support and enhance life on Earth. Sustaining biodiversity also aids humanity by preserving landscapes of recreational, cultural, or inspirational value. Humans depend on the living world for the resources and other benefits provided by biodiversity. Impacts on biodiversity can be mitigated through actions such as habitat conservation, reclamation practices, wildlife management, and invasive species control. Understanding the effects of population growth, wildfire, pollution, and climate variability on changes in biodiversity could help maintain the integrity of biological systems. (LS2-HS-7, LS4-HS-6.)

LS3-HS Heredity: Inheritance and Variation of Traits

Performance Standards

Students who demonstrate understanding can:

LS3-HS- 1. Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

- Content Limit: Assessment does not include the phases of meiosis or the biochemical mechanism of specific steps in the process.

LS3-HS-2. Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

- Further Explanation: Emphasis is on using data to support arguments for the way variation occurs.
- Content Limit: Assessment does not include the phases of meiosis or the biochemical mechanism of specific steps in the process.

LS3-HS-3. Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

- Further Explanation: Emphasis is on the use of mathematics to describe the probability of traits (alleles) as it relates to genetic and environmental factors in the expression of traits.
- Content Limit: Assessment does not include Hardy-Weinberg calculations.

Supporting Content

LS1.A: Structure and Function

- All cells contain genetic information in the form of DNA molecules. Genes are regions in the DNA that contain the instructions that code for the formation of proteins. (LS3- HS-1, LS1-HS-1.)

LS3.A: Inheritance of Traits

- Each chromosome consists of a single very long DNA molecule, and each gene on the chromosome is a particular segment of that DNA. The instructions for forming species' characteristics are carried in DNA. All cells in an organism have the same genetic content, but the genes used (expressed) by the cell may be regulated in different ways. Not all DNA codes for a protein; some segments of DNA are involved in regulatory or structural functions, and some have no as-yet known function. (LS3-HS-1)

LS3.B: Variation of Traits

- In sexual reproduction, chromosomes can sometimes swap sections during the process of meiosis (cell division), thereby creating new genetic combinations and thus more genetic variation. Although DNA replication is tightly regulated and remarkably accurate, errors do occur and

result in mutations, which are also a source of genetic variation. Environmental factors can also cause mutations in genes, and viable mutations are inherited. (LS3-HS-2)

- Environmental factors also affect expression of traits, and hence affect the probability of occurrences of traits in a population. Thus the variation and distribution of traits observed depends on both genetic and environmental factors. (LS3-HS-2, LS3-HS-3)

LS4-HS Biological Adaptation: Unity and Diversity

Performance Standards

Students who demonstrate understanding can:

LS4-HS- 1. Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.

- Further Explanation: Emphasis is on a conceptual understanding of the role each line of evidence has relating to common ancestry and biological evolution. Examples of evidence could include similarities in DNA sequences, anatomical structures, and order of appearance of structures in embryological development.

LS4-HS-2. Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.

- Further Explanation: Emphasis is on using evidence to explain the influence each of the four factors has on number of organisms, behaviors, morphology, or physiology in terms of ability to compete for limited resources and subsequent survival of individuals and adaptation of species. Examples of evidence could include mathematical models such as simple distribution graphs and proportional reasoning.
- Content Limit: Assessment does not include other mechanisms of evolution, such as genetic drift, gene flow through migration, and co-evolution.

LS4-HS-3. Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.

- Further Explanation: Emphasis is on analyzing shifts in numerical distribution of traits and using these shifts as evidence to support explanations.
- Content Limit: Assessment is limited to basic statistical and graphical analysis. Assessment does not include allele frequency calculations.

LS4-HS-4. Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

- Further Explanation: Emphasis is on using data to provide evidence for how specific biotic and abiotic differences in ecosystems (such as ranges of seasonal temperature, long-term climate change, acidity, light, geographic barriers, or evolution of other organisms) contribute to a change in gene frequency over time, leading to adaptation of populations.

LS4-HS-5. Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

- Further Explanation: Emphasis is on determining cause and effect relationships for how changes to the environment such as deforestation, over fishing, application of fertilizers and pesticides, drought, flood, and the rate of change of the environment affect distribution or disappearance of traits in species.

LS4-HS-6. Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

- Further Explanation: Emphasis is on designing solutions for a proposed problem related to threatened or endangered species, or to genetic variation of organisms for multiple species.

Supporting Content

LS4.A: Evidence of Common Ancestry and Diversity

- Genetic information, like the fossil record, provides evidence of evolution. DNA sequences vary among species, but there are many overlaps; in fact, the ongoing branching that produces multiple lines of descent can be inferred by comparing the DNA sequences of different organisms. Such information is also derivable from the similarities and differences in amino acid sequences and from anatomical and embryological evidence. (LS4-HS-1)

LS4.B: Natural Selection

- Natural selection occurs only if there is both (1) variation in the genetic information between organisms in a population and (2) variation in the expression of that genetic information—that is, trait variation—that leads to differences in performance among individuals. (LS4-HS-2, LS4-HS-3)
- The traits that positively affect survival are more likely to be reproduced, and thus are more common in the population. (LS4-HS-3)

LS4.C: Adaptation

- Evolution is a consequence of the interaction of four factors: (1) the potential for a species to increase in number, (2) the genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for an environment's limited supply of the resources that individuals need in order to survive and reproduce, and (4) the ensuing proliferation of those organisms that are better able to survive and reproduce in that environment. (LS4-HS-2)
- Natural selection leads to adaptation, that is, to a population dominated by organisms that are anatomically, behaviorally, and physiologically well suited to survive and reproduce in a specific environment. That is, the differential survival and reproduction of organisms in a population that have an advantageous heritable trait leads to an increase in the proportion of individuals in future generations that have the trait and to a decrease in the proportion of individuals that do not. (LS4-HS-3, LS4-HS-4)
- Adaptation also means that the distribution of traits in a population can change when conditions change. (LS4-HS-3)
- Changes in the physical environment, whether naturally occurring or human induced, have thus contributed to the expansion of some species, the emergence of new distinct species as populations diverge under different conditions, and the decline–and sometimes the extinction–of some species. (LS4-HS-5, LS4-HS-6)
- Species become extinct because they can no longer survive and reproduce in their altered environment. If members cannot adjust to change that is too fast or drastic, the opportunity for the species' evolution is lost. (LS4-HS-5)

LS4.D: Biodiversity and Humans

- Sustaining ecosystem health and biodiversity is essential to support and enhance life on Earth. Sustaining biodiversity also aids humanity by preserving landscapes of recreational, cultural, or inspirational value. Humans depend on the living world for the resources and other benefits provided by biodiversity. Impacts on biodiversity can be mitigated through actions such as habitat conservation, reclamation practices, wildlife management, and invasive species control. Understanding the effects of population growth, wildfire, pollution, and climate variability on changes in biodiversity could help maintain the integrity of biological systems. (LS2-HS-7, LS4-HS-6.

ETS1.B: Developing Possible Solutions

- When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts. (LS4-HS-6)
- Both physical models and computers can be used in various ways to aid in the engineering design process. Computers are useful for a variety of purposes, such as running simulations to test different ways of solving a problem or to see which one is most efficient or economical; and in making a persuasive presentation to a client about how a given design will meet his or her needs. (LS4-HS-6)

PSC: Physical Sciences (Chemistry)

PSC1-HS Structure and Properties of Matter

Performance Standards

Students who demonstrate understanding can:

PSC1-HS-1. Develop models to describe the atomic composition of simple molecules and extended structures.

- Further Explanation: Emphasis is on reviewing how to develop models of molecules that vary in complexity. This should build on the similar middle school standard (PS1- MS-1). Examples of simple molecules could include ammonia and methanol. Examples of extended structures could include sodium chloride or diamonds. Examples of molecular-level models could include drawings, 3D ball and stick structures, or computer representations showing different molecules with different types of atoms.
- Content Limit: Students will be provided with the names of the elements, a list of common ions, a list of numerical prefixes and their meanings, and the charges of all cations and anions within the item as necessary. Confine element symbols to the representative and familiar transition metal elements.

PSC1-HS-2. Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.

- Further Explanation: Examples of properties that could be predicted from patterns could include reactivity of metals, types of bonds formed, numbers of bonds formed, and reactions with oxygen.
- Content Limit: Elements will be limited to main group elements. Properties assessed will be limited to reactivity, valence electrons, atomic radius, electronegativity, ionization energy (first), shielding effect, and the most common oxidation number.

PSC1-HS-3. Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

- Further Explanation: Emphasis is on understanding the strengths of forces between particles, not on naming specific intermolecular forces (such as dipole-dipole). Examples of particles could include ions, atoms, molecules, and networked materials (such as graphite). Examples of bulk properties of substances could include the melting point and boiling point, vapor pressure, and surface tension.
- Content Limit: Metallic, ionic, and covalent bonds may be included. Graphical representations of melting or boiling points of different substances may be used in the item (e.g., graph of boiling points vs. molar mass or simple bar graph). Structural formulas of compounds may be used to compare the melting/boiling points of compounds

PSC1-HS-4. Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and other types of radioactive decay.

- Further Explanation: Emphasis is on simple qualitative models, such as pictures or diagrams, and on the scale of energy released in nuclear processes relative to other kinds of transformations.
- Content Limit: Assessment does not include quantitative calculation of energy released. Assessment is limited to alpha, beta, and gamma radioactive decays.

PSC1-HS-5. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

- Further Explanation: Emphasis is on the attractive and repulsive forces that determine the functioning of the material. Examples could include why electrically conductive materials are often made of metal, flexible but durable materials are made up of long chained molecules, and pharmaceuticals are designed to interact with specific receptors.
- Content Limit: Assessment is limited to provided molecular structures of specific designed materials. For questions involving polar vs. nonpolar bonds, item distractors containing ionic bonds may not be used. Electronegativity differences of < 0.5 should be used for nonpolar covalent bonds. Electronegativity differences of 0.5 – 1.7 should be used for polar covalent bonds.

Supporting Content

PS1.A: Structure and Properties of Matter

- Substances are made from different types of atoms, which combine with one another in various ways. Atoms form molecules that range in size from two to thousands of atoms. (PSC1-HS-1)
- Each atom has a substructure consisting of a nucleus, which is made of protons and neutrons, surrounded by electrons. (PSC1-HS-2)
- The periodic table orders elements horizontally by the number of protons in the atom's nucleus and places those with similar chemical properties in columns. The repeating patterns of this table reflect patterns of outer electron states. (PSC1-HS-2)
- The structure and interactions of matter at the bulk scale are determined by electrical forces within and between atoms. (PSC1-HS-3, PSC1-HS-5)

PS1.C: Nuclear Processes

- Nuclear processes, including fusion, fission, and radioactive decays of unstable nuclei, involve release or absorption of energy. The total number of neutrons plus protons does not change in any nuclear process. (PSC1-HS-4)

PS2.B: Types of Interactions

- Attraction and repulsion between electric charges at the atomic scale explain the structure, properties (physical and chemical), and transformations of matter, as well as the contact forces between material objects. (PSC1-HS-2, PSC1-HS3, PSC1-HS-5)

PSC2-HS Chemical Reactions

Performance Standards

Students who demonstrate understanding can:

PSC2-HS-1 Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

- Further Explanation: Examples of chemical reactions could include the reaction of sodium and chlorine, of carbon and oxygen, or of carbon and hydrogen.
- Content Limit: Identify types of chemical reactions including: synthesis/formation/combination reactions, decomposition reactions, single replacement/displacement reactions, double replacement/displacement reactions, oxidation-reduction (redox) reactions (single replacement only), acid base reactions, and combustion reactions (for hydrocarbons). Predict the products of double replacement, single replacement, and combustion reactions only. For the second skill statement, do not use acid names or hydrocarbons when translating between words and formulas. Items will include a list of common ions, as needed.

PSC2-HS-2. Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

- Further Explanation: Emphasis is on the idea that a chemical reaction is a system that affects the energy change. Examples of models could include molecular-level drawings and diagrams of reactions, graphs showing the relative energies of reactants and products, and representations showing energy is conserved.
- Content Limit: Assessment does not include calculating the total bond energy changes during a chemical reaction from the bond energies of reactants and products.

PSC2-HS-3. Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

- Further Explanation: Emphasis is on student reasoning that focuses on the number and energy of collisions between molecules.
- Content Limit: Factors that influence the rate of reaction may include temperature, surface area, size of particles, concentration, and catalysts. Can also include concentration and titration relationships. Provide a graphic showing how a catalyst provides a different pathway for a chemical reaction to occur resulting in a lower activation energy. May include a titration curve.

PSC2-HS-4. Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

- Further Explanation: Emphasis is on using mathematical ideas to communicate the proportional relationships between masses of atoms in the reactants and the products, and the translation of these relationships to the macroscopic scale using the mole as the conversion from the atomic to the macroscopic scale. Emphasis is on assessing students' use of mathematical thinking and not on memorization and rote application of problem-solving techniques. Should also include calculations related to determining the concentration and/or pH of a solution.
- Content Limit: Conversion problems will be one to two steps (e.g., grams to moles to atoms/molecules). Compounds and formulas should be provided in the stem of the question. Students should be given molecular masses in problems involving gram to other unit conversions. Molar

mass calculations should not be combined with conversion problems. All volumes must be at standard temperature and pressure (STP). A balanced equation and molar masses should be included in the item. Calculations may include grams/moles/volume of reactant to grams/moles/volume of product.

PSC2-HS-5. Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

- Further Explanation: Emphasis is on the application of Le Chatelier's Principle and on refining designs of chemical reaction systems, including descriptions of the connection between changes made at the macroscopic level and what happens at the molecular level. Examples of designs could include different ways to increase product formation including adding reactants or removing products.
- Content Limit: Assessment is limited to specifying the change in only one variable at a time. Assessment does not include calculating equilibrium constants and concentrations.

Supporting Content

PS1.A: Structure and Properties of Matter

- The periodic table orders elements horizontally by the number of protons in the atom's nucleus and places those with similar physical and chemical properties in columns. The repeating patterns of this table reflect patterns of outer electron states. (PSC2-S-1)
- A stable molecule has less energy than the same set of atoms separated; one must provide at least this energy in order to take the molecule apart. (PSC2-HS-2)

PS1.B: Chemical Reactions

- Chemical processes, their rates, and whether or not energy is stored or released can be understood in terms of the collisions of molecules and the rearrangements of atoms into new molecules, with consequent changes in the sum of all bond energies in the set of molecules that are matched by changes in kinetic energy. (PSC2-HS-2, PSC2-HS-3)
- In many situations, a dynamic and condition-dependent balance between a reaction and the reverse reaction determines the numbers of all types of molecules present. (PSC2-HS-5)
- The fact that atoms are conserved, together with knowledge of the chemical properties of the elements involved, can be used to describe and predict chemical reactions. (PSC2-HS-1, PSC2-HS-4)

ETS1.C: Optimizing the Design Solution

- Criteria may need to be broken down into simpler ones that can be approached systematically, and decisions about the priority of certain criteria over others (trade-offs) may be needed. (PSC2-HS-5)

PSC3-HS Energy

Performance Standards

Students who demonstrate understanding can:

PSC3-HS-1. Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

- Further Explanation: Emphasis is on how the experimental evidence supports the claim and how a theory is generally modified in light of new evidence. Examples of a phenomenon could include interference, diffraction, and photoelectric effect.
- Content Limit: Assessment does not include using quantum theory.

PSC3-HS-2 Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

- Further Explanation: Emphasis is on explaining the meaning of mathematical expressions used in the model.
- Content Limit: Provide two temperatures (initial and final), a temperature-time graph, or an enthalpy diagram.

PSC3-HS-3. Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).

- Further Explanation: Examples of phenomena at the macroscopic scale could include the conversion of kinetic energy to thermal energy. Examples of models could include diagrams, drawings, descriptions, and computer simulations.
- Content Limit: Provide equations for the gas laws (i.e., ideal gas law, Boyle's law, Charles' law, and the combined gas laws).

PSC3-HS-4*. Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy. ---OPTIONAL

- Further Explanation: Emphasis is on both qualitative and quantitative evaluations of devices. Examples of devices could include calorimeters, heat and cold packs, solar cells, solar ovens, and electrochemical cells. Examples of constraints could include use of renewable energy forms and efficiency.
- Content Limit: Assessment for quantitative evaluations is limited to total output for a given input. Assessment is limited to devices constructed with materials provided to students.

PSC3-HS-5. Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

- Further Explanation: Emphasis is on analyzing data from student investigations and using mathematical thinking to describe the energy changes both quantitatively and conceptually (endothermic/exothermic). Examples of investigations could include mixing liquids at different initial temperatures or adding objects at different temperatures to water.
- Content Limit: For items involving specific heat, provide the equation $Q = mC_p\Delta T$ and specific heats. Include the melting and boiling points of water. Perform calculations for changes that do not involve a change of state. Perform gram to mole and mole to ΔH calculations. Use joules as a unit of measure, as opposed to calories.

Supporting Content

PS4.B: Electromagnetic Radiation

- Electromagnetic radiation (e.g., radio, microwaves, light) can be modeled as a wave of changing electric and magnetic fields or as particles called photons. The wave model is useful for explaining many features of electromagnetic radiation, and the particle model explains other features. (PSC3-HS-1)

PS3.A: Definitions of Energy

- Energy is a quantitative property of a system that depends on the motion and interactions of matter and radiation within that system. That there is a single quantity called energy is due to the fact that a system's total energy is conserved, even as, within the system, energy is continually transferred from one object to another and between its various possible forms. (PSC3-HS-2, PSC3-HS-3)
- At the macroscopic scale, energy manifests itself in multiple ways, such as in motion, sound, light, and thermal energy. (PSC3-HS-3, PSC3-HS-4)
- These relationships are better understood at the microscopic scale, at which all of the different manifestations of energy can be modeled as a combination of energy associated with the motion of particles and energy associated with the configuration (relative position of the particles). In some cases the relative position energy can be thought of as stored in fields (which mediate interactions between particles). This last concept includes radiation, a phenomenon in which energy stored in fields moves across space. (PSC3-HS-3)

PS3.B: Conservation of Energy and Energy Transfer

- Conservation of energy means that the total change of energy in any system is always equal to the total energy transferred into or out of the system. (PSC3-HS-2)
- Energy cannot be created or destroyed, but it can be transported from one place to another and transferred between systems. (PSC3-HS-2, PSC3-HS-5)
- Mathematical expressions, which quantify how the stored energy in a system depends on its configuration (e.g. relative positions of charged particles, compression of a spring) and how kinetic energy depends on mass and speed, allow the concept of conservation of energy to be used to predict and describe system behavior. (PSC3-HS-2)
- The availability of energy limits what can occur in any system. (PSC3-HS-2)
- Uncontrolled systems always evolve toward more stable states—that is, toward more uniform energy distribution (e.g., water flows downhill, objects hotter than their surrounding environment cool down). (PSC3-HS-5)

PS3.D: Energy in Chemical Processes

- Although energy cannot be destroyed, it can be converted to less useful forms—for example, to thermal energy in the surrounding environment. (PSC3-HS-4, PSC3-HS-5)

Physical Sciences (Physics)

PSP1-HS Motion and Stability: Forces and Interactions

Performance Standards

Students who demonstrate understanding can:

PSP1-HS-1. Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.

- Further Explanation: Examples of data could include tables or graphs of position or velocity as a function of time for objects subject to a net unbalanced force, such as a falling object, an object rolling down a ramp, or a moving object being pulled by a constant force.
- Content Limit: Assessment is limited to one-dimensional motion and to macroscopic objects moving at non-relativistic speeds.

PSP1-HS-2. Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system.

- Further Explanation: Emphasis is on the quantitative conservation of momentum in interactions and the qualitative meaning of this principle (Newton's first law).
- Content Limit: Assessment is limited to systems of two macroscopic bodies moving in one dimension.

PSP1-HS-3. Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

- Further Explanation: Examples of evaluation and refinement could include determining the success of the device at protecting an object from damage and modifying the design to improve it. Examples of a device could include a football helmet or a parachute.
- Content Limit: Assessment is limited to qualitative evaluations and/or algebraic manipulations.

PSP1-HS-4. Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describeand predict the gravitational and electrostatic forces between objects.

- Further Explanation: Emphasis is on both quantitative and conceptual descriptions of gravitational and electric fields.
- Content Limit: Assessment is limited to systems with two objects.

PSP1-HS-5. Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.

- Content Limit: Assessment is limited to designing and conducting investigations with provided materials and tools.

PSP1-HS-6. Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

- Further Explanation: Emphasis is on the attractive and repulsive forces that determine the functioning of the material. Examples could include why electrically conductive materials are often made of metal, flexible but durable materials are made up of long chained molecules, and pharmaceuticals are designed to interact with specific receptors.
- Content Limit: Assessment is limited to provided molecular structures of specific designed materials.

Supporting Content

PS1.A: Structure and Properties of Matter

- The structure and interactions of matter at the bulk scale are determined by electrical forces within and between atoms. (PSP1-HS-6)

PS2.A: Forces and Motion

- Newton's second law accurately predicts changes in the motion of macroscopic objects. (PSP1-HS-1)
- Momentum is defined for a particular frame of reference; it is the mass times the velocity of the object. (PSP1-HS-2)
- If a system interacts with objects outside itself, the total momentum of the system can change; however, any such change is balanced by changes in the momentum of objects outside the system. (PSP1-HS-2, PSP1-HS-3)

PS2.B: Types of Interactions

- Newton's law of universal gravitation and Coulomb's law provide the mathematical models to describe and predict the effects of gravitational and electrostatic forces between distant objects. (PSP1-HS-4)
- Forces at a distance are explained by fields (gravitational, electric, and magnetic) permeating space that can transfer energy through space. Magnets or electric currents cause magnetic fields; electric charges or changing magnetic fields cause electric fields. (PSP1-HS-4, PSP1-HS-5)
- Attraction and repulsion between electric charges at the atomic scale explain the structure, properties, and transformations of matter, as well as the contact forces between material objects. (PSP1-HS-6, PSC1-HS-1, PSC1-HS-3)

PS3.A: Definitions of Energy

- "Electrical energy" may mean energy stored in a battery or energy transmitted by electric currents. (PSP1-HS-5)

ETS1.A: Defining and Delimiting an Engineering Problem

- Criteria and constraints also include satisfying any requirements set by society, such as taking issues of risk mitigation into account, and they should be quantified to the extent possible and stated in such a way that one can tell if a given design meets them. (PSP1-HS-3)

ETS1.C: Optimizing the Design Solution

- Criteria may need to be broken down into simpler ones that can be approached systematically, and decisions about the priority of certain criteria over others (trade-offs) may be needed. PSP1-HS-3)

PSP2-HS Energy

Performance Standards

Students who demonstrate understanding can:

PSP2-HS-1. Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

- Further Explanation: Emphasis is on explaining the meaning of mathematical expressions used in the model.
- Content Limit: Assessment is limited to basic algebraic expressions or computations; to systems of two or three components; and to thermal energy, kinetic energy, and/or the energies in gravitational, magnetic, or electric fields.

PSP2-HS-2. Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motions of particles (objects) and energy associated with the relative positions of particles (objects).

- Further Explanation: Examples of phenomena at the macroscopic scale could include the conversion of kinetic energy to thermal energy, the energy stored due to position of an object above the earth, and the energy stored between two electrically-charged plates. Examples of models could include diagrams, drawings, descriptions, and computer simulations.

PSP2-HS-3. Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

- Further Explanation: Emphasis is on both qualitative and quantitative evaluations of devices. Examples of devices could include Rube Goldberg devices, wind turbines, solar cells, solar ovens, and generators. Examples of constraints could include use of renewable energy forms and efficiency.
- Content Limit: Assessment for quantitative evaluations is limited to total output for a given input. Assessment is limited to devices constructed with materials provided to students.

PSP2-HS-4. Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

- Further Explanation: Emphasis is on analyzing data from student investigations and using mathematical thinking to describe the energy changes both quantitatively and conceptually. Examples of investigations could include mixing liquids at different initial temperatures or adding objects at different temperatures to water.
- Content Limit: Assessment is limited to investigations based on materials and tools provided to students.

PSP2-HS-5. Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.

- Further Explanation: Examples of models could include drawings, diagrams, and texts, such as drawings of what happens when two charges of opposite polarity are near each other.
- Content Limit: Assessment is limited to systems containing two objects.

Supporting Content

PS3.A: Definitions of Energy

- Energy is a quantitative property of a system that depends on the motion and interactions of matter and radiation within that system. That there is a single quantity called energy is due to the fact that a system's total energy is conserved, even as, within the system, energy is continually transferred from one object to another and between its various possible forms. (PSP2-HS-1, PSP2-HS-2)
- At the macroscopic scale, energy manifests itself in multiple ways, such as in motion, sound, light, and thermal energy. (PSP2-HS-2, PSP2-HS-3)
- These relationships are better understood at the microscopic scale, at which all of the different manifestations of energy can be modeled as a combination of energy associated with the motion of particles and energy associated with the configuration (relative position of the particles). In some cases the relative position energy can be thought of as stored in fields (which mediate interactions between particles). This last concept includes radiation, a phenomenon in which energy stored in fields moves across space. (PSP2-HS-2)

PS3.B: Conservation of Energy and Energy Transfer

- Conservation of energy means that the total change of energy in any system is always equal to the total energy transferred into or out of the system. (PSP2-HS-1)
- Energy cannot be created or destroyed, but it can be transported from one place to another and transferred between systems. (PSP2-HS-1, PSP2-HS-4)
- Mathematical expressions, which quantify how the stored energy in a system depends on its configuration (e.g. relative positions of charged particles, compression of a spring) and how kinetic energy depends on mass and speed, allow the concept of conservation of energy to be used to predict and describe system behavior. (PSP2-HS-1)
- The availability of energy limits what can occur in any system. (PSP2-HS-1)
- Uncontrolled systems always evolve toward more stable states—that is, toward more uniform energy distribution (e.g., water flows downhill, objects hotter than their surrounding environment cool down). (PSP2-HS-4)

PS3.C: Relationship Between Energy and Forces

- When two objects interacting through a field change relative position, the energy stored in the field is changed. (PSP2-HS-5)

PS3.D: Energy in Chemical Processes

- Although energy cannot be destroyed, it can be converted to less useful forms—for example, to thermal energy in the surrounding environment. (PSP2-HS-3, PSP2-HS-4)

ETS1.A: Defining and Delimiting an Engineering Problem

- Criteria and constraints also include satisfying any requirements set by society, such as taking issues of risk mitigation into account, and they should be quantified to the extent possible and stated in such a way that one can tell if a given design meets them. (PSP2-HS-3)

PSP3-HS Waves

Performance Standards

Students who demonstrate understanding can:

PSP3-HS-1. Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

- Further Explanation: Examples of data could include electromagnetic radiation traveling in a vacuum and glass, sound waves traveling through air and water, and seismic waves traveling through the Earth.
- Content Limit: Assessment is limited to algebraic relationships and describing those relationships qualitatively.

PSP3-HS-2. Evaluate questions about the advantages of using digital transmission and storage of information.

- Further Explanation: Examples of advantages could include that digital information is stable because it can be stored reliably in computer memory, transferred easily, and copied and shared rapidly. Disadvantages could include issues of easy deletion, security, and theft.

PSP3-HS-3. Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

- Further Explanation: Emphasis is on how the experimental evidence supports the claim and how a theory is generally modified in light of new evidence. Examples of a phenomenon could include resonance, interference, diffraction, and photoelectric effect.
- Content Limit: Assessment does not include using quantum theory.

PSP3-HS-4. Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.

- Further Explanation: Emphasis is on the idea that photons associated with different frequencies of light have different energies, and the damage to living tissue from electromagnetic radiation depends on the energy of the radiation. Examples of published materials could include trade books, magazines, web resources, videos, and other passages that may reflect bias.
- Content Limit: Assessment is limited to qualitative descriptions.

PSP3-HS-5. Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.

- Further Explanation: Examples could include solar cells capturing light and converting it to electricity; medical imaging; and communications technology.
- Content Limit: Assessments are limited to qualitative information. Assessments do not include band theory.

Supporting Content

PS3.D: Energy in Chemical Processes

- Solar cells are human-made devices that likewise capture the sun's energy and produce electrical energy. (PSP3-HS-5)

PS4.A: Wave Properties

- The wavelength and frequency of a wave are related to one another by the speed of travel of the wave, which depends on the type of wave and the medium through which it is passing. (PSP3-HS-1)
- Information can be digitized (e.g., a picture stored as the values of an array of pixels); in this form, it can be stored reliably in computer memory and sent over long distances as a series of wave pulses. (PSP3-HS-2, PSP3-HS-5)
- [From the 3–5 grade band endpoints] Waves can add or cancel one another as they cross, depending on their relative phase (i.e., relative position of peaks and troughs of the waves), but they emerge unaffected by each other. (Boundary: The discussion at this grade level is qualitative only; it can be based on the fact that two different sounds can pass a location in different directions without getting mixed up.)(PSP3-HS-3)

PS4.B: Electromagnetic Radiation

- Electromagnetic radiation (e.g., radio, microwaves, light) can be modeled as a wave of changing electric and magnetic fields or as particles called photons. The wave model is useful for explaining many features of electromagnetic radiation, and the particle model explains other features. (PSP3-HS-3)
- When light or longer wavelength electromagnetic radiation is absorbed in matter, it is generally converted into thermal energy (heat). Shorter wavelength electromagnetic radiation (ultraviolet, X-rays, gamma rays) can ionize atoms and cause damage to living cells. (PSP3-HS-4)

- Photoelectric materials emit electrons when they absorb light of a high-enough frequency. (PSP3-HS-5)

PS4.C: Information Technologies and Instrumentation

- Multiple technologies based on the understanding of waves and their interactions with matter are part of everyday experiences in the modern world (e.g., medical imaging, communications, scanners) and in scientific research. They are essential tools for producing, transmitting, and capturing signals and for storing and interpreting the information contained in them. (PSP3-HS-5)

ESS: Earth and Space Sciences

ESS1-HS Earth's Place in the Universe

Performance Standards

Students who demonstrate understanding can:

ESS1-HS-1. Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.

- Further Explanation: Emphasis is on the energy transfer mechanisms that allow energy from nuclear fusion in the sun's core to reach Earth. Examples of evidence for the model include observations of the masses and lifetimes of other stars, as well as the ways that the sun's radiation varies due to sudden solar flares ("space weather"), the 11-year sunspot cycle, and non-cyclic variations over centuries.
- Content Limit: Assessment does not include details of the atomic and sub-atomic processes involved with the sun's nuclear fusion.

ESS1-HS-2. Construct an explanation of the current model of the origin of the universe based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.

- Further Explanation: Emphasis is on the astronomical evidence of the redshift of light from galaxies as an indication that the universe is currently expanding, the cosmic microwave background as the remnant radiation from the event, and the observed composition of ordinary matter of the universe, primarily found in stars and interstellar gases (from the spectra of electromagnetic radiation from stars), which matches that predicted by the scientific model (3/4 hydrogen and 1/4 helium).

ESS1-HS-3. Communicate scientific ideas about the way stars, over their life cycle, produce elements.

- Further Explanation: Emphasis is on the way nucleosynthesis, and therefore the different elements created, varies as a function of the mass of a star and the stage of its lifetime.
- Content Limit: Details of the many different nucleosynthesis pathways for stars of differing masses are not assessed.

ESS1-HS-4. Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

- Further Explanation: Emphasis is on Newtonian gravitational law s governing orbital motions, which apply to human-made satellites as well as planets and moons.
- Content Limit: Mathematical representations for the gravitational attraction of bodies and Kepler's Laws of orbital motions should not deal with more than two bodies, nor involve calculus.

ESS1-HS-5. Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

- Further Explanation: Emphasis is on the ability of plate tectonics to explain the ages of crustal rocks. Examples include evidence of the ages oceanic crust increasing with distance from mid-ocean ridges (a result of plate spreading) and the ages of North American continental crust increasing with distance away from a central ancient core (a result of past plate interactions).

ESS1-HS-6. Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.

- Further Explanation: Emphasis is on using available evidence within the solar system to reconstruct the early history of Earth, which formed along with the rest of the solar system. Examples of evidence include the absolute ages of ancient materials (obtained by radiometric dating of meteorites, moon rocks, and Earth's oldest minerals), the sizes and compositions of solar system objects, and the impact cratering record of planetary surfaces.

Supporting Content

ESS1.A: The Universe and Its Stars

- The star called the sun is changing and will burn out over a lifespan of approximately 10 billion years. (ESS1-HS-1)
- The study of stars' light spectra and brightness is used to identify compositional elements of stars, their movements, and their distances from Earth. (ESS1-HS-2, ESS1-HS- 3)
- The Big Bang theory is a current scientific model of the origin of the universe that is supported by evidence such as observations of distant galaxies receding from our own, of the measured composition of stars and non-stellar gases, and of the maps of spectra of the primordial radiation (cosmic microwave background) that still fills the universe. Other than the hydrogen and helium formed at the time of the event, nuclear fusion within stars produces all atomic nuclei lighter than and including iron, and the process releases electromagnetic energy. Heavier elements are produced when certain massive stars achieve a supernova stage and explode. (ESS1-HS-2, ESS1-HS-3)

ESS1.B: Earth and the Solar System

- Kepler's laws describe common features of the motions of orbiting objects, including their elliptical paths around the sun. Orbits may change due to the gravitational effects from, or collisions with, other objects in the solar system. (ESS1-HS-4)

ESS1.C: The History of Planet Earth

- Continental rocks are generally much older than the rocks of the ocean floor. (ESS1-HS-5)
- Although active geologic processes, such as plate tectonics and erosion, have destroyed or altered most of the very early rock record on Earth, other objects in the solar system, such as lunar rocks, asteroids, and meteorites, have changed little over billions of years. Studying these objects can provide information about Earth's formation and early history. (ESS1-HS-6)

ESS2.B: Plate Tectonics and Large-Scale System Interactions

- Plate tectonics is the unifying theory that explains the past and current movements of the rocks at Earth's surface and provides a framework for understanding its geologic history. (ESS1-HS-5)

PS1.C: Nuclear Processes

- Spontaneous radioactive decay follows a characteristic exponential decay law. Nuclear lifetimes allow radiometric dating to be used to determine the ages of rocks and other materials. (ESS1-HS-5, ESS1-HS-6)

PS3.D: Energy in Chemical Processes and Everyday Life

- Nuclear Fusion processes in the center of the sun release the energy that ultimately reaches Earth as radiation. (ESS1-HS-1)

PS4.B Electromagnetic Radiation

- Atoms of each element emit and absorb characteristic frequencies of light. These characteristics allow identification of the presence of an element, even in microscopic quantities. (ESS1-HS-2)

ESS2-HS Earth's Systems

Performance Standards

Students who demonstrate understanding can:

ESS2-HS-1. Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.

- Further Explanation: Emphasis is on how the appearance of land features (such as mountains, valleys, and plateaus) and sea-floor features (such as trenches, ridges, and seamounts) are a result of both constructive forces (such as volcanism, tectonic uplift, and orogeny) and destructive mechanisms (such as weathering, mass wasting, and coastal erosion).
- Content Limit: Assessment does not include memorization of the details of the formation of specific geographic features of Earth's surface.

ESS2-HS-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

- Further Explanation: Examples should include climate feedbacks, such as how an increase in greenhouse gases causes a rise in global temperatures that melts glacial ice, which reduces the amount of sunlight reflected from Earth's surface, increasing surface temperatures and further reducing the amount of ice. Examples could also be taken from other system interactions, such as how the loss of ground vegetation causes an increase in water runoff and soil erosion; how dammed rivers increase groundwater recharge, decrease sediment transport, and increase coastal erosion; or how the loss of wetlands causes a decrease in local humidity that further reduces the wetland extent.

ESS2-HS-3. Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.

- Further Explanation: Emphasis is on both a one-dimensional model of Earth, with radial layers determined by density, and a three-dimensional model, which is controlled by mantle convection and the resulting plate tectonics. Examples of evidence include maps of Earth's three-dimensional structure obtained from seismic waves, records of the rate of change of Earth's magnetic field (as constraints on convection in the outer core), and identification of the composition of Earth's layers from high-pressure laboratory experiments.

ESS2-HS-4. Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

- Further Explanation: Examples of the causes of climate change differ by timescale, over 1-10 years: large volcanic eruption, ocean circulation; 10-100s of years: changes in human activity, ocean circulation, solar output; 10-100s of thousands of years: changes to Earth's orbit and the orientation of its axis; and 10-100s of millions of years: long-term changes in atmospheric composition.
- Content Limit: Assessment of the results of changes in climate is limited to changes in surface temperatures, precipitation patterns, glacial ice volumes, sea levels, and biosphere distribution.

ESS2-HS-5. Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

- Further Explanation: Emphasis is on mechanical and chemical investigations with water and a variety of solid materials to provide the evidence for connections between the hydrologic cycle and system interactions commonly known as the rock cycle. Examples of mechanical

investigations include stream transportation and deposition using a stream table, erosion using variations in soil moisture content, or frost wedging by the expansion of water as it freezes. Examples of chemical investigations include chemical weathering and recrystallization (by testing the solubility of different materials) or melt generation (by examining how water lowers the melting temperature of most solids).

ESS2-HS-6. Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.

- Further Explanation: Emphasis is on modeling biogeochemical cycles that include the cycling of carbon through the ocean, atmosphere, soil, and biosphere (including humans), providing the foundation for living organisms.

ESS2-HS-7. Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.

- Further Explanation: Emphasis is on the dynamic causes, effects, and feedbacks between the biosphere and Earth's other systems, whereby geoscience factors control the evolution of life, which in turn continuously alters Earth's surface. Examples of include how photosynthetic life altered the atmosphere through the production of oxygen, which in turn increased weathering rates and allowed for the evolution of animal life; how microbial life on land increased the formation of soil, which in turn allowed for the evolution of land plants; or how the evolution of corals created reefs that altered patterns of erosion and deposition along coastlines and provided habitats for the evolution of new life forms.
- Content Limit: Assessment does not include a comprehensive understanding of the mechanisms of how the biosphere interacts with all of Earth's other systems.

Supporting Content

ESS1.B: Earth and the Solar System

- Cyclical changes in the shape of Earth's orbit around the sun, together with changes in the tilt of the planet's axis of rotation, both occurring over hundreds of thousands of years, have altered the intensity and distribution of sunlight falling on the earth. These phenomena cause a cycle of ice ages and other gradual climate changes. (ESS2-HS-4)

ESS2.A: Earth Materials and Systems

- Earth's systems, being dynamic and interacting, cause feedback effects that can increase or decrease the original changes. (ESS2-HS-1, ESS2-HS-2)
- Evidence from deep probes and seismic waves, reconstructions of historical changes in Earth's surface and its magnetic field, and an understanding of physical and chemical processes lead to a model of Earth with a hot but solid inner core, a liquid outer core, a solid mantle and crust. Motions of the mantle and its plates occur primarily through thermal convection, which involves the cycling of matter due to the outward flow of energy from Earth's interior and gravitational movement of denser materials toward the interior. (ESS2-HS-3)
- The geological record shows that changes to global and regional climate can be caused by interactions among changes in the sun's energy output or Earth's orbit, tectonic events, ocean circulation, volcanic activity, glaciers, vegetation, and human activities. These changes can occur on a variety of time scales from sudden (e.g., volcanic ash clouds) to intermediate (ice ages) to very long-term tectonic cycles. (ESS2-HS-4)

ESS2.B: Plate Tectonics and Large-Scale System Interactions

- The radioactive decay of unstable isotopes continually generates new energy within Earth's crust and mantle, providing the primary source of the heat that drives mantle convection. Plate tectonics can be viewed as the surface expression of mantle convection. (ESS2-HS-3)

- Plate tectonics is the unifying theory that explains the past and current movements of the rocks at Earth's surface and provides a framework for understanding its geologic history. Plate movements are responsible for most continental and ocean-floor features and for the distribution of most rocks and minerals within Earth's crust. (ESS2-HS-1)

ESS2.C: The Roles of Water in Earth's Surface Processes

- The abundance of liquid water on Earth's surface and its unique combination of physical and chemical properties are central to the planet's dynamics. These properties include water's exceptional capacity to absorb, store, and release large amounts of energy, transmit sunlight, expand upon freezing, dissolve and transport materials, and lower the viscosities and melting points of rocks. (ESS2-HS-5)

ESS2.D: Weather and Climate

- The foundation for Earth's global climate systems is the electromagnetic radiation from the sun, as well as its reflection, absorption, storage, and redistribution among the atmosphere, ocean, and land systems, and this energy's re-radiation into space. (ESS2-HS-2, ESS2-HS-4)
- Gradual atmospheric changes were due to plants and other organisms that captured carbon dioxide and released oxygen. (ESS2-HS-6, ESS2-HS-7)
- Changes in the atmosphere due to human activity have increased carbon dioxide concentrations and thus affect climate. (ESS2-HS-6, ESS2-HS-4)

ESS2.E: Biogeology

- The many dynamic and delicate feedbacks between the biosphere and other Earth systems cause a continual co-evolution of Earth's surface and the life that exists on it. (ESS2-HS-7)

PS4.A: Wave Properties

- Geologists use seismic waves and their reflection at interfaces between layers to probe structures deep in the planet. (ESS2-HS-3)

ESS3-HS Earth and Human Activity

Performance Standards

Students who demonstrate understanding can:

ESS3-HS-1. Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

- Further Explanation: Examples of key natural resources include access to fresh water (such as rivers, lakes, and groundwater), regions of fertile soils such as river deltas, and high concentrations of minerals and fossil fuels. Examples of natural hazards can be from interior processes (such as volcanic eruptions and earthquakes), surface processes (such as tsunamis, mass wasting and soil erosion), and severe weather (such as hurricanes, floods, and droughts). Examples of the results of changes in climate that can affect populations or drive mass migrations include changes to sea level, regional patterns of temperature and precipitation, and the types of crops and livestock that can be raised.

ESS3-HS-2. Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

- Further Explanation: Emphasis is on the conservation, recycling, and reuse of resources (such as minerals and metals) where possible, and on minimizing impacts where it is not. Examples include developing best practices for agricultural soil use, mining (for coal, tar sands, and oil shales), and pumping (for petroleum and natural gas). Science knowledge indicates what can happen in natural systems—not what should happen.

ESS3-HS-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.

- Further Explanation: Examples of factors that affect the management of natural resources include costs of resource extraction and waste management, per-capita consumption, and the development of new technologies. Examples of factors that affect human sustainability include agricultural efficiency, levels of conservation, and urban planning.
- Content Limit: Assessment for computational simulations is limited to using provided multi-parameter programs or constructing simplified spreadsheet calculations.

ESS3-HS-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

- Further Explanation: Examples of data on the impacts of human activities could include the quantities and types of pollutants released, changes to biomass and species diversity , or areal changes in land surface use (such as for urban development, agriculture and livestock, or surface mining). Examples for limiting future impacts could range from local efforts (such as reducing, reusing, and recycling resources) to large-scale geoengineering design solutions (such as altering global temperatures by making large changes to the atmosphere or ocean).

ESS3-HS-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.

- Further Explanation: Examples of evidence, for both data and climate model outputs, are for climate changes (such as precipitation and temperature) and their associated impacts (such as on sea level, glacial ice volumes, or atmosphere and ocean composition).
- Content Limit: Assessment is limited to one example of a climate change and its associated impacts.

ESS3-HS-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

- Further Explanation: Examples of Earth systems to be considered are the hydrosphere, atmosphere, cryosphere, geosphere, and/or biosphere . A n example of the far- reaching impacts from a human activity is how an increase in atmospheric carbon dioxide results in an increase in photosynthetic biomass on land and an increase in ocean acidification, with resulting impacts on sea organism health and marine populations.
- Content Limit: Assessment does not include running computational representations but is limited to using the published results of scientific computational models.

Supporting Content

ESS2.D: Weather and Climate

- Current models project that, without human intervention, average global temperatures will continue to rise. The outcomes projected by global climate models depend on the amounts of greenhouse gases added to the atmosphere each year and by the ways in which these gases are stored by Earth's systems. (ESS3-HS-6)

ESS3.A: Natural Resources

- Resource availability has guided the development of human society. (ESS3-HS-1)
- All forms of energy production and other resource extraction have associated economic, social, environmental, and geopolitical costs and risks as well as benefits. New technologies and social regulations can change the balance of these factors. (ESS3-HS-2)

ESS3.B: Natural Hazards

- Natural hazards and other geologic events have shaped the course of human history. They have altered the sizes of human populations and have driven human migrations. (ESS3-HS-1)

ESS3.C: Human Impacts on Earth Systems

- The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources. (ESS3-HS-3)
- Scientists and engineers can make major contributions by developing technologies that produce less pollution and waste and that preclude ecosystem degradation. (ESS3- HS-4)
- Though the magnitudes of human impacts are greater than they have ever been, so too are human abilities to model, predict, and manage current and future impacts. (ESS3-HS-5)
- Through computer simulations and other studies, important discoveries are still being made about how the ocean, the atmosphere, and the biosphere interact and are modified in response to human activities. (ESS3-HS-6)

ETS1.B: Developing Possible Solutions

- When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, environmental impacts. (ESS3-HS-2, ESS3-HS-4)

APPENDIX A: SUGGESTED MIDDLE AND HIGH SCHOOL COURSE PROGRESSIONS

Grades 6-8 (Assessment given at end of 8th Grade as either Cumulative ISAT OR Content Specific EOC)

Conceptual Progressions Model

Course 1 SCs	Course 1 PSs	Course 2 SCs	Course 2 PSs	Course 3 SCs	Course 3 PSs
PS1.A	PS1-MS-1	PS3.C	PS4-MS-3	LS2.C	LS2-MS-5
PS1.B	PS1-MS-2	PS4.B	LS1-MS-1	LS4.A	LS2-MS-6
PS2.A	PS1-MS-3	PS4.C	LS1-MS-2	LS4.B	LS4-MS-1
PS2.B	PS1-MS-4	LS1.A	LS1-MS-3	LS4.C	LS4-MS-2
PS3.A	PS1-MS-5	LS1.B	LS1-MS-4	LS4.D	LS4-MS-3
PS3.B	PS1-MS-6	LS1.C	LS1-MS-5	ESS1.C	LS4-MS-4
PS4.A	PS2-MS-1	LS2.B	LS1-MS-6	ESS2.D	LS4-MS-5
LS2.A	PS2-MS-2	LS3.A	LS2-MS-3	ESS3.C	LS4-MS-6
ESS1.B	PS2-MS-3	LS3.B	LS2-MS-4	ESS3.C	ESS1-MS-4
ESS2.B	PS2-MS-4	ESS1.A	LS3-MS-1	ETS1.A	ESS3-MS-3
ESS2.C	PS2-MS-5	ESS2.A	LS3-MS-2	ETS1.B	ESS3-MS-4
ESS3.A	PS3-MS-1	ESS2.A	ESS2-MS-1	NA	ESS3-MS-5
ETS1.A	PS3-MS-2	ESS2.D	ESS2-MS-2	NA	NA
ETS1.B	PS3-MS-3	ESS3.B	ESS2-MS-3	NA	NA
NA	PS3-MS-4	ETS1.A	ESS2-MS-4	NA	NA
NA	PS3-MS-5	ETS1.B	ESS2-MS-5	NA	NA
NA	PS4-MS-1	NA	ESS2-MS-6	NA	NA
NA	PS4-MS-2	NA	ESS3-MS-1	NA	NA

Course 1 SCs	Course 1 PSs	Course 2 SCs	Course 2 PSs	Course 3 SCs	Course 3 PSs
NA	LS2-MS-1	NA	ESS3-MS-2	NA	NA
NA	LS2-MS-2	NA	NA	NA	NA
NA	ESS1-MS-1	NA	NA	NA	NA
NA	ESS1-MS-2	NA	NA	NA	NA
NA	ESS1-MS-3	NA	NA	NA	NA

Science Domains Model

Physical SCs	Physical PSs	Life SCs	Life PSs	Earth SCs	Earth PSs
PS1.A	PS1-MS-1	LS1.A	LS1-MS-1	ESS1. A	ESS1-MS-1
PS1.B	PS1-MS-2	LS1.B	LS1-MS-2	ESS1.B	ESS1-MS-2
PS2.A	PS1-MS-3	LS1.C	LS1-MS-3	ESS1.C	ESS1-MS-3
PS2.B	PS1-MS-4	LS2.A	LS1-MS-4	ESS2. A	ESS1-MS-4
PS3.A	PS1-MS-5	LS2.B	LS1-MS-5	ESS2.B	ESS2-MS-1
PS3.B	PS1-MS-6	LS2.C	LS1-MS-6	ESS2.C	ESS2-MS-2
PS3.C	PS2-MS-1	LS3.A	LS2-MS-1	ESS2.D	ESS2-MS-3
PS4.A	PS2-MS-2	LS3.B	LS2-MS-2	ESS3.A	ESS2-MS-4
PS4.B	PS2-MS-3	LS4.A	LS2-MS-3	ESS3.B	ESS2-MS-5
PS4.C	PS2-MS-4	LS4.B	LS2-MS-4	ESS3.C	ESS2-MS-6
ETS1.A	PS2-MS-5	LS4.C	LS2-MS-5	ESS3.C	ESS3-MS-1
ETS1.B	PS3-MS-1	LS4.D	LS2-MS-6	NA	ESS3-MS-2
NA	PS3-MS-2	ETS1.B	LS3-MS-1	NA	ESS3-MS-3
NA	PS3-MS-3	NA	LS3-MS-2	NA	ESS3-MS-4
NA	PS3-MS-4	NA	LS4-MS-1	NA	ESS3-MS-5
NA	PS3-MS-5	NA	LS4-MS-2	NA	NA
NA	PS4-MS-1	NA	LS4-MS-3	NA	NA
NA	PS4-MS-2	NA	LS4-MS-4	NA	NA
NA	PS4-MS-3	NA	LS4-MS-5	NA	NA
NA	NA	NA	LS4-MS-6	NA	NA

Grades 9-12

Modified Science Domains Model

Biology SCs	Biology PSs	Chemistry SCs	Chemistry PSs	Physics SCs	Physics PSs
LS1.A	LS1-HS-1	PS1.A	PSC1-HS-1	PS1.A	PSP1-HS-1
LS1.B	LS1-HS-2	PS1.B	PSC1-HS-2	PS2.A	PSP1-HS-2
LS1.C	LS1-HS-3	PS1.C	PSC1-HS-3	PS2.B	PSP1-HS-3
LS2.A	LS1-HS-4	PS2.B	PSC1-HS-4	PS3.A	PSP1-HS-4
LS2.B	LS1-HS-5	PS3.A	PSC1-HS-5	PS3.B	PSP1-HS-5
LS2.C	LS1-HS-6	PS3.B	PSC2-HS-1	PS3.C	PSP1-HS-6
LS2.D	LS1-HS-7	PS3.D	PSC2-HS-2	PS3.D	PSP2-HS-1
LS3.A	LS2-HS-1	PS4.B	PSC2-HS-3	PS4.A	PSP2-HS-2
LS3.B	LS2-HS-2	ESS2.C	PSC2-HS-4	PS4.B	PSP2-HS-3
LS4.A	LS2-HS-3	ESS2.D	PSC2-HS-5	PS4.C	PSP2-HS-4
LS4.B	LS2-HS-4	ESS3.A	PSC3-HS-1	ESS1.A	PSP2-HS-5
LS4.C	LS2-HS-5	ESS3.C	PSC3-HS-2	ESS1.B	PSP3-HS-1
LS4.D	LS2-HS-6	ETS1.A	PSC3-HS-3	ESS2.A	PSP3-HS-2
ESS1.C	LS2-HS-7	ETS1.B	PSC3-HS-4	ESS2.B	PSP3-HS-3
ESS2.E	LS2-HS-8	ETS1.C	PSC3-HS-5	ETS1.A	PSP3-HS-4
ESS3.B	LS3-HS-1	NA	ESS2-HS-4	ETS1.B	PSP3-HS-5
ESS3.C	LS3-HS-2	NA	ESS2-HS-5	ETS1.C	ESS1-HS-1
ETS1.A	LS3-HS-3	NA	ESS2-HS-6	NA	ESS1-HS-2
ETS1.B	LS4-HS-1	NA	ESS3-HS-2	NA	ESS1-HS-3
ETS1.C	LS4-HS-2	NA	ESS3-HS-5	NA	ESS1-HS-4
NA	LS4-HS-3	NA	ESS3-HS-6	NA	ESS2-HS-1
NA	LS4-HS-4	NA	NA	NA	ESS2-HS-2
NA	LS4-HS-5	NA	NA	NA	ESS2-HS-3
NA	LS4-HS-6	NA	NA	NA	NA
NA	ESS1-HS-5	NA	NA	NA	NA
NA	ESS1-HS-6	NA	NA	NA	NA
NA	ESS2-HS-7	NA	NA	NA	NA
NA	ESS3-HS-1	NA	NA	NA	NA
NA	ESS3-HS-3	NA	NA	NA	NA
NA	ESS3-HS-4	NA	NA	NA	NA

Grades 9-12, continued

Science Domains Model

Chemistry SCs	Chemistry PSs	Physics SCs	Physics PSs	Biology SCs	Biology PSs	Earth/Space SCs	Earth/Space PSs
PS1.A	PSC1-HS-1	PS1.A	PSP1-HS-1	LS1.A	LS1-HS-1	ESS1.A	ESS1-HS-1
PS1.B	PSC1-HS-2	PS2.A	PSP1-HS-2	LS1.B	LS1-HS-2	ESS1.B	ESS1-HS-2
PS1.C	PSC1-HS-3	PS2.B	PSP1-HS-3	LS1.C	LS1-HS-3	ESS1.C	ESS1-HS-3
PS2.B	PSC1-HS-4	PS3.A	PSP1-HS-4	LS2.A	LS1-HS-4	ESS2.A	ESS1-HS-4
PS3.A	PSC1-HS-5	PS3.B	PSP1-HS-5	LS2.B	LS1-HS-5	ESS2.B	ESS1-HS-5
PS3.B	PSC2-HS-1	PS3.C	PSP1-HS-6	LS2.C	LS1-HS-6	ESS2.C	ESS1-HS-6
PS3.D	PSC2-HS-2	PS3.D	PSP2-HS-1	LS2.D	LS1-HS-7	ESS2.D	ESS2-HS-1
PS4.B	PSC2-HS-3	PS4.A	PSP2-HS-2	LS3.A	LS2-HS-1	ESS2.E	ESS2-HS-2
ETS1.C	PSC2-HS-4	PS4.B	PSP2-HS-3	LS3.B	LS2-HS-2	ESS3.A	ESS2-HS-3
NA	PSC2-HS-5	PS4.C	PSP2-HS-4	LS4.A	LS2-HS-3	ESS3.B	ESS2-HS-4
NA	PSC3-HS-1	ETS1.A	PSP2-HS-5	LS4.B	LS2-HS-4	ESS3.C	ESS2-HS-5
NA	PSC3-HS-2	ETS1.C	PSP3-HS-1	LS4.C	LS2-HS-5	ESS3.C	ESS2-HS-6
NA	PSC3-HS-3	NA	PSP3-HS-2	LS4.D	LS2-HS-6	PS1.C	ESS2-HS-7
NA	PSC3-HS-4	NA	PSP3-HS-3	ETS1.B	LS2-HS-7	PS3.D	ESS3-HS-1
NA	PSC3-HS-5	NA	PSP3-HS-4	NA	LS2-HS-8	PS4.A	ESS3-HS-2
NA	NA	NA	PSP3-HS-5	NA	LS3-HS-1	PS4.B	ESS3-HS-3
NA	NA	NA	NA	NA	LS3-HS-2	ETS1.B	ESS3-HS-4
NA	NA	NA	NA	NA	LS3-HS-3	NA	ESS3-HS-5
NA	NA	NA	NA	NA	LS4-HS-1	NA	ESS3-HS-6
NA	NA	NA	NA	NA	LS4-HS-2	NA	NA
NA	NA	NA	NA	NA	LS4-HS-3	NA	NA
NA	NA	NA	NA	NA	LS4-HS-4	NA	NA
NA	NA	NA	NA	NA	LS4-HS-5	NA	NA
NA	NA	NA	NA	NA	LS4-HS-6	NA	NA

APPENDIX B: GLOSSARY OF TERMS

This tool provides terminologies that represent the overarching concepts and ideas needed to understand the Idaho State Science Standards. The Glossary of Terms is not meant to be exhaustive, but seeks to address critical terms and definitions essential in building science content knowledge and understanding. This tool will assist in promoting consistency across disciplines, increasing student outcomes, and improving stakeholder communication.

analyze - studying the data of an investigation or experiment and looking for trends or patterns in the data or graph to see if the change had an effect

argument/evidence-based account - a reason or set of reasons given with the aim of persuading others that an action or idea is right or wrong, based on empirical evidence

cause and effect - the relationship between events or things, where one is the result of the other or others (action and reaction)

claim - to state or assert that something is true, typically without providing evidence

classify - grouping items together based on traits and/or characteristics

data - the result of your experimentation (facts, figures, and other evidence) that you usually record on a chart and then make a graph

empirical - verifiable by observation (using senses) or experience

evidence -the available body of facts or information indicating whether a claim or proposition is true or valid

example - a thing characteristic of its kind or illustrating a general rule/idea

experimental design - a method of research in which a controlled experimental variable is subjected to special treatment for the purpose of comparison with a variable kept constant

fact - an observation that has been repeatedly confirmed

graph - a diagram showing the visual relationship between variable quantities

hypothesis - a testable statement about the natural world that can be used to build more complex inferences and explanations

inference - a conclusion reached on the basis of evidence and reasoning

interpret - to explain and understand the meaning of evidence based on credible scientific information

investigation - a process to carry out a systematic or formal inquiry to discover and examine the facts

law - a descriptive generalization about how some aspect of the natural world behaves under stated circumstances

measure -to determine the dimensions, quantity or capacity of an object

model (computational, mathematical, etc**.)**- a representation of an idea, object, process or a system that is used to describe, explain, and make predictions about phenomena that cannot be experienced directly

observation - receiving knowledge of the natural world through our senses, recording information using scientific tools or instruments

pattern/trend - consistent and recurring set of characteristics or traits that helps in the identification of a phenomenon or problem and serves as an indicator or model for predicting future behavior

prediction - a forecast or statement about an uncertain event that is based upon experience or evidence

relationship - the connections between two variables

science - the process of trying to understand the world around us through exploration, invention, and problem solving

scientific reasoning - a justification that connects evidence to a claim

simulation - the imitation of the operation of a real-world process or system over time

solution - a method or a process for dealing with a problem that relies on scientific and/or engineering practices

theory - a substantiated explanation of some aspect of the natural world, based on a body of facts that have been repeatedly confirmed through observation and experiment; the scientific community

validates each theory before it is accepted; if new evidence is discovered that the theory does not accommodate, the theory is generally modified in light of this new evidence

variable - any factor that can be controlled, changed, and/or measured; usually in an experiment

PROFESSIONAL STANDARDS COMMISSION

SUBJECT

Emergency Provisional Certificates and Revised Considerations and Recommendations

REFERENCE

June 2019	Board reviewed twelve (12) provisional certificates for the 2018-19 school year and approved eleven (11).
August 2019	Board reviewed four (4) provisional certificates, three (3) for the 2018-19 school year and one (1) for the 2019-20 school year and approved revised procedures for evaluating emergency provisional certification requests.
December 2019	Board reviewed and approved twenty-four (24) provisional certificates for the 2019-20 school year.
February 2020	Board reviewed and approved thirty-six (36) provisional certificates for the 2019-20 school year.
April 2020	Board approved twenty-four (24) provisional certificates for the 2019-20 school year.
June 2020	Board approved two (2) provisional certificates for the 2019-2020 school year.

APPLICABLE STATUTE, RULE, OR POLICY

Sections 33-1201 and 33-1203, Idaho Code

BACKGROUND/DISCUSSION

One (1) emergency provisional application was received by the State Department of Education from Teton County School District #401 listed below. Emergency provisional applications allow a school district or charter school to request one-year emergency certification for a candidate who does not hold a current Idaho certificate, but who has a strong content background and some educational pedagogy, to fill an area of need that requires certification and endorsement. While the candidate is under emergency provisional certification, no financial penalties will be assessed to the hiring school district. Historical Provisional status has been added to candidates that have received provisional approvals in prior years, as there is nothing in rule that prohibits multiple provisionals.

Teton School District #401
Applicant Name: Harry Lowenthal
Content & Grade Range: World Language - Spanish K-12
Degree: BA, Music 5/1979
Declared Emergency: February 10, 2020 Teton School District Board of Trustees declared an emergency exists for the 2019-2020 school year.

Summary of Recruitment Efforts: There were five applicants and two interviews. A teacher resigned on January 15 with an end date of January 23. Mr. Lowenthal will finish the second semester.

PSC Review: The Professional Standards Commission Authorizations Committee met June 11, 2020. The committee recommends Teton School District's request for Harry Lowenthal without reservation.

IMPACT

If an emergency provisional certificate is not approved, the school district will have no certificated staff to serve in the position and funding could be impacted.

STAFF COMMENTS AND RECOMMENDATIONS

Pursuant to Section 33-1201, Idaho Code, "every person who is employed to serve in any elementary or secondary school in the capacity of teacher, supervisor, administrator, education specialist, school nurse or school librarian shall be required to have and to hold a certificate issued under the authority of the State Board of Education…." Section 33-1203, Idaho Code, prohibits the Board from authorizing standard certificates to individuals who have less than four (4) years accredited college training; except in "emergencies, which must be declared, the state board may authorize the issuance of provisional certificates based on not less than two (2) years of college training."

Section 33-512(15), Idaho Code, defines substitute teachers as "as any individual who temporarily replaces a certificated classroom educator…." Neither Idaho Code, nor administrative rule, limits the amount of time a substitute teacher may be employed to cover a classroom. In some cases, school districts use a long-term substitute prior to requesting provisional certification for the individual. In some cases, the individual that the school district is requesting emergency certification for has been in the classroom as a long-term substitute for the entire term. Salary Based Apportionment is calculated based on school district employee certification. A school district or charter school receives a lesser apportionment for non-certificated/classified staff than it receives for certificated staff. Substitute teachers are calculated at the lesser classified staff rate.

Requests for emergency provisional certificates after the end of the school year for funding purposes is not consistent with the requirements of Section 33-1201, Idaho Code. At the April 2019 Regular Board meeting the Board approved the request from the Department of Education to limit consideration of Emergency Provisional Certificates by the April Board meeting of each year. At the August 2019 Board meeting the Board approved an amendment to the procedures allowing an exception to the April Board meeting deadline for school districts and charter schools who need to replace a staff member after the January Professional Standards Commission meeting deadline.

BOARD ACTION

I move to accept the recommendation of the Professional Standards Commission to issue a one-year emergency provisional certificate for Harry Lowenthal to teach World Language – Spanish K-12 in the Teton School District #401 as provided herein for the 2019-2020 school year.

Moved by _____ Seconded by _____ Carried Yes _____ No _____