IDAHO EXTENDED CONTENT STANDARDS

CORE CONNENT CONNECTORS

MATHEMATICS

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Core Content Connectors | Mathematics Legend

Full Name of Core Content Connector	Core Content Connector
Data Analysis, Probability, and Statistics	DPS
Geometry	GM
Measurement	ME
Numbers and Operations	NO
Patterns, Relations, and Functions	PRF
Symbolic Expression	SE
Full Name	**Acronym**
College and Career Readiness Anchor	CCRA

Full Name of State Standard	Standard	Full Name of State Standard	Standard	Full Name of State Standard	Standard
Counting and Cardinality	CC	Interpreting Functions	IF	Quantities	Q
Operations and Algebraic Thinking	OA	Building Functions	BF	The Complex Number System	CN
Number and Operations in Base Ten	NBT	Linear, Quadratic, and Exponential Models	LE	Vector and Matrix Quantities	VM
Measurement and Data	MD	Trigonometric Functions	TF	Seeing Structure in Expressions	SSE
Geometry	G	Congruence	CO	Arithmetic with Polynomials and Rational Expressions	APR
Number and Operations - Fractions	NF	Similarity, Right Triangles, and Trigonometry	SRT	Creating Equations	CED
Ratios and Proportional Relationships	RP	Circles	C	Reasoning with Equations and Inequalities	REI
The Number System	NS	Expressing Geometric Properties with Equations	GPE	Interpreting Categorical and Quantitative Data	HSS.ID
Expressions and Equations	EE	Geometric Measurement and Dimension	GMD	Making Inferences and Justifying Conclusions	HSS.IC
Statistics and Probability	SP	Modeling with Geometry	MG	Conditional Probability and the Rules of Probability	HSS.CP
Functions	F	The Real Number System	RN	Using Probability to Make Decisions	HSS.MD

Mathematics | Grade K | Overview

Counting and Cardinality (CC)
• Know number names and the count sequence.
• Count to tell the number of objects.
• Compare numbers.
Operations and Algebraic Thinking (OA)
• Understand addition and putting together and adding to, and understand subtraction as taking apart.
Number and Operations in Base Ten (NBT)
• Work with numbers 11-19 to gain foundations for place value.
Measurement and Data (MD)
• Describe and compare measurable attributes.
• Classify objects and count the number of objects in categories.
Geometry (G)
• Identify and describe shapes.
• Analyze, compare, create, and compose shapes.

Progress Indicator: E.DPS.1a posing questions of interest that can be answered by counting or collecting data (e.g., concrete comparisons about students, classroom materials, science topics) with teacher guidance		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.DPS.1a1 Select a question that is answered by collected data	**Counting and Cardinality** K CC Count to tell the number of objects.	K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.

Progress Indicator: E.GM.1a recognizing, describing (using spatial language) and naming shapes regardless of orientation or size and locating shapes in the environment		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**

K.GM.1a1 Recognize two-dimensional shapes (e.g., circle, square, triangle, rectangle) regardless of orientation or size	**Geometry** K G Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)	K.G.A.2 Correctly name shapes regardless of their orientations or overall size.
K.GM.1a2 Recognize two-dimensional shapes in environment regardless of orientation or size	**Geometry** K G Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)	K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative position of these objects using terms such as *above, below, beside, in front of, behind, and next to.*
K.GM.1a3 Use spatial language (e.g., above, below, etc.) to describe two-dimensional shapes	**Geometry** K G Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)	K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative position of these objects using terms such as *above, below, beside, in front of, behind, and next to.*
Progress Indicator: E.GM.1c composing two-dimensional shapes (rectangles, squares, triangles, half-circles, and quarter circles)		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.GM.1c 1 Compose a larger shape from smaller shapes	**Geometry** K G Analyze, compare, create, and compose shapes.	K.G.B.6 Compose simple shapes to form larger shapes. *For example, "Can you join these two triangles with full sides touching to make a rectangle?"*

Progress Indicator: E.ME.1a recognizing, identifying, and describing the measurable attributes of objects		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.ME.1a1 Describe objects in terms of measurable attributes (longer, shorter, heavier, lighter…)	**Measurement and Data** K MD Describe and compare measurable	K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measureable attributes of a single object.

	attributes.	
Progress Indicator: E.ME.1b comparing and ordering objects/events according to their specified attributes (using standard or non-standard units of measure), including indirectly by using a third object, or using common referents to estimate or compare		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.ME.1b1 Sort objects by characteristics (e.g., big/little, colors, shapes, etc.)	**Measurement and Data** K MD Classify objects and count the number of objects in each category.	K. MD.B.3 Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
K.ME.1b2 Compare 2 objects with a measurable attribute in common to see which object has more/less of the attribute (length, height, weight)	**Measurement and Data** K MD Describe and compare measurable attributes.	K.MD.A.2 Directly compare two objects with a measurable attribute in common to see which object has "more of/less of" the attribute, and describe the difference. *For example, directly compare the heights of two children and describe one child as taller/shorter.*

Progress Indicator: E.ME.2a applying non-standard and common standard units to measure (length, height, weight, time)		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
No CCCs developed for this PI		No CCRA linked
Progress Indicator: E.ME.2b selecting tools and using units of measures appropriately and consistently, with no gaps or overlaps in the technique of measuring		
No CCCs developed for this PI		No CCRA linked
Progress Indicator: E.ME2c recognizing situations that require precision and those where an estimation or proportional matching is appropriate		
No CCCs developed for this PI		No CCRA linked
Progress Indicator: E.ME2d describing a unit as an amount/quantity (rather than an object or a mark on a scale)		
No CCCs developed for this PI		No CCRA linked

Progress Indicator: E.NO.1a showing mastery of the prerequisite core skills of cardinality, constancy, and 1:1 correspondence		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.NO.1a1 Rote count up to 10	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.1 Count to 100 by ones and by tens.
K.NO.1a2 Rote count up to 31	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.1 Count to 100 by ones and by tens.
K.NO.1a3 Rote count up to 100	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.1 Count to 100 by ones and by tens.
K.NO.1a4 Count up to 10 objects in a line, rectangle, or array	**Counting and Cardinality** K CC Count to tell the number of objects.	K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. a) When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with tone and only one object. K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.
Progress Indicator: E.NO.1b developing an understanding of number and principles of quantity (e.g., hold up 5 fingers at once to show 5, locate things in 2s without counting; using number words to indicate small exact numbers or relative change in quantity - more, small)		

Core Content Connectors: K	CCRA Domain/Cluster	Idaho Content Standard
K.NO.1b1 Match the numeral to the number of objects in a set	**Counting and Cardinality** K CC Count to tell the number of objects.	K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. a) When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with tone and only one object. K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.
K.NO.1b2 Identify the set that has more	**Counting and Cardinality** K CC Count to tell the number of objects.	K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. b) Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
Progress Indicator: E.NO.1d identifying numbers (names, symbols, quantity) and the count sequence		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.NO.1d1 Identify numerals 1-10	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
K.NO.1d2 Identify the numerals 1-10 when presented the name of the number	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

Progress Indicator: E.NO.1e reading and writing numbers; counting and estimating (e.g., how many?; skip counting by 2s, 5s, 10s; even/odd)		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.NO.1e1 Write or select the numerals 1-10	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
Progress Indicator: NO.1f representing, ordering, and comparing whole numbers		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.NO.1f1 Identify the smaller or larger number given 2 numbers between 0-10	**Counting and Cardinality** K CC Compare numbers.	K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.

Progress Indicator: E.NO.2a representing addition and subtraction in multiple ways (composing/ decomposing numbers, diagrams, using objects, arrays, equations, number lines), including regrouping		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.NO.2a1 Count 2 sets to find sums up to 10	**Operations and Algebraic Thinking** K OA Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
K.NO.2a2 Decompose a set of up to 10 objects into a group; count the quantity in each group	**Operations and Algebraic Thinking** K OA Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
K.NO.2a3 Solve word problems within 10	**Operations and Algebraic Thinking** K OA Understand addition as putting together	K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to

	and adding to, and understand subtraction as taking apart and taking from.	represent the problem.

Progress Indicator: E.PRF.1b exploring and describing how addition or subtraction changes a quantity		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.PRF.1b1 Use objects or pictures to respond appropriately to "add __" and "take away ___"	**Operations and Algebraic Thinking** K OA Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings1, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (1 Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.))
K.PRF.1b2 Communicate answer after adding or taking away	**Operations and Algebraic Thinking** K OA Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings1, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (1 Drawings need not show details, but should show the mathematics in the problem. (This applies wherever drawings are mentioned in the Standards.))
Progress Indicator: E.PRF.1c modeling problem solving situations that involve addition and subtraction of whole numbers using objects, diagrams, and symbols		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.PRF.1c1 Solve one step addition and subtraction word problems, and add and subtract within 10 using	**Operations and Algebraic Thinking** K OA Understand addition as putting together	K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to

objects, drawings, pictures	and adding to, and understand subtraction as taking apart and taking from.	represent the problem.
Explanations and clarifications:		

Progress Indicator: E.PRF.2a recognizing, describing, and extending simple repeating (ABAB) and growing (A+1, A+2, A+3) patterns (e.g., colors, sounds, words, shapes, numeric – counting, odd, even)		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.PRF.2a1 Describe or select the repeating pattern using objects or pictures (AB or ABC)		No CCRA linked
K.PRF.2a2 Extend a repeating pattern using objects or pictures (AB or ABC)		No CCRA linked
K.PRF.2a3 Extend a repeating numerical AB pattern		No CCRA linked
Progress Indicator: E.PRF.2b creating and explaining repeating and growing patterns using objects or numbers		
Core Content Connectors: K	**CCRA Domain/Cluster**	**Idaho Content Standard**
K.PRF.2b1 Create a repeating pattern using objects, pictures, or numbers		No CCRA linked

Mathematics | Grade 1 | Overview

Operations and Algebraic Thinking (OA)
• Represent and solve problems involving addition and subtraction.
• Understand and apply properties of operations and the relationship between addition and subtraction.
• Add and subtract within 20.
Number and operations in Base Ten (NBT)
• Extend the counting sequence.
• Understand place value.
• Use place value understanding and properties of operations to add and subtract.
Measurement and Data (MD)
• Measure lengths indirectly and by iterating length units.
• Tell and write time.
• Represent and interpret data.
Geometry (G)
• Reason with shapes and their attributes.

Progress Indicator: E.DPS.1a posing questions of interest that can be answered by counting or collecting data (e.g., concrete comparisons about students, classroom materials, science topics) with teacher guidance		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.DPS.1a2 Select questions that ask about "How many" and represent up to three categories that can be concretely represented	**Measurement and Data** 1 MD Represent and interpret data.	1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
1.DPS.1a3 Identify 2 categories resulting from a selected question	**Measurement and Data** 1 MD Represent and interpret data.	1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are

		in one category than in another.
1.DPS.1a4 Analyze data by sorting into 2 categories; answer questions about the total number of data points and how many in each category	**Measurement and Data** 1 MD Represent and interpret data.	1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
Progress Indicator: E.DPS.1c collecting and organizing/representing data (e.g., picture graphs, tally charts, bar graphs)		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.DPS.1c1 Using a picture graph, represent each object/person counted on the graph (1:1 correspondence) for 2 or more categories	**Measurement and Data** 1 MD Represent and interpret data.	1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
Progress Indicator: E.DPS.1d recognizing that data can take on different values		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.DPS.1d1 Interpret a picture graph to answer questions about how many in each category	**Measurement and Data** 1 MD Represent and interpret data.	1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
Progress Indicator: E.DPS.1e describing and comparing data and beginning to identify what the data do or do not show (e.g., bar graphs, line plots, picture graphs)		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.DPS.1e1 Compare the values of the 2 categories of data in terms of more or less	**Measurement and Data** 1 MD Represent and interpret data.	1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each

		category, and how many more or less are in one category than in another.

Progress Indicator: E.GM.1b analyzing and comparing two- (and later) three-dimensional shapes using informal language (e.g., flat, solid, corners) to describe their differences and similarities, as well as their component parts (number of sides, vertices) and other attributes (e.g., sides of equal length)		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.GM.1b1 Identify shapes as two-dimensional (lying flat) or three dimensional (solid)	**Geometry** K G Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres)	K.G.A.3 Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
1.GM.1b2 Distinguish two-dimensional shapes based upon their defining attributes (i.e., size, corners, and points)	**Geometry** 1 G Reason with shapes and their attributes.	1.G.A.1 Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
Progress Indicator: E.GM.1c composing two-dimensional shapes (rectangles, squares, triangles, half-circles, and quarter-circles)		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.GM.1c 2 Compose two- and three-dimensional shapes	**Geometry** 1 G Reason with shapes and their attributes.	1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
Progress Indicator: E.GM.1f partitioning shapes into 2, 3, or 4 equal parts and describing the parts (halves, quarters, fourths, thirds)		

Core Content Connectors: 1	CCRA Domain/Cluster	Idaho Content Standard
1.GM.1f1 Partition circles and rectangles into two equal parts	**Geometry** 1 G Reason with shapes and their attributes.	1.G.A.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares
Explanations and clarifications:		

Progress Indicator: E.ME.1a recognizing, identifying, and describing the measurable attributes of objects		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.ME.1a2 Identify minutes and hours on a digital clock	**Measurement and Data** 1 MD Tell and write time.	1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.
Progress Indicator: E.ME.1b comparing and ordering objects/events according to their specified attributes (using standard or non-standard units of measure), including indirectly by using a third object, or using common referents to estimate or compare		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.ME.1b3 Order up to 3 objects based on a measurable attribute (height, weight, length)	**Measurement and Data** 1 MD Measure lengths indirectly and by iterating length units.	1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.
1.ME.1b4 Compare the lengths of two objects indirectly by using a third object	**Measurement and Data** 1 MD Measure lengths indirectly and by	1.MD.A.1 Order three objects by length; compare the lengths of two objects indirectly by using a third object.

	iterating length units.	
Progress Indicator: E.ME.1c recognizing that the smaller the unit, the more units are needed to measure an object, and that units can be decomposed/ partitioned into smaller units		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.ME.1c1 Compare 2 units of measurement and identify which unit would require more or less when measuring a selected object (e.g., Measure with paper clips or markers? Which unit will require more to measure the table?)	**Measurement and Data** 1 MD Measure lengths indirectly and by iterating length units.	1.MD.A.2 Express length of an object as a whole number of lengths unit by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. *Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.*

Progress Indicator: E.ME.2a applying non-standard and common standard units to measure (length, height, weight, time)		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.ME.2a1 Measure using copies of one object to measure another	**Measurement and Data** 1 MD Measure lengths indirectly and by iterating length units.	1.MD.A.2 Express length of an object as a whole number of lengths unit by laying multiple copies of a shorter object (the length unit) end to end; understand that the lengths measurement of an object is the number of same size length units that span it with no gaps or overlaps. *Limit to context where the object being measure is spanned by a whole number of length units with no gaps or overlaps.*
1.ME.2a2 Use time to sequence up to 3 events, using a digital or analog clock	**Measurement and Data** 1 MD Tell and write time.	1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.
Progress Indicator: E.ME.2b selecting tools and using units of measures appropriately and consistently, with no gaps or		

overlaps in the technique of measuring		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.ME.2b1 Express length of an object as a whole number of lengths unit by laying multiple copies of a shorter object end to end	**Measurement and Data** 1 MD Measure lengths indirectly and by iterating length units.	1.MD.A.2 Express length of an object as a whole number of lengths unit by laying multiple copies of a shorter object (the length unit) end to end; understand that the lengths measurement of an object is the number of same size length units that span it with no gaps or overlaps. *Limit to context where the object being measure is spanned by a whole number of length units with no gaps or overlaps.*
Progress Indicator: E.ME2c recognizing situations that require precision and those where an estimation or proportional matching is appropriate		
No CCCs developed for this PI		No CCRA linked
Progress Indicator: E.ME2d describing a unit as an amount/quantity (rather than an object or a mark on a scale)		
No CCCs developed for this PI		No CCRA linked

Progress Indicator: E.NO.1a showing mastery of the prerequisite core skills of cardinality, constancy, and 1:1 correspondence		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.NO.1a5 Rote count up to 31	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.1 Count to 100 by ones and by tens.
1.NO.1a6 Rote count up to 100	**Counting and Cardinality** K CC Know number names and the count sequence. 1 NBT Extend the counting sequence.	K.CC.A.1 Count to 100 by ones and by tens. 1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number

		of objects with a written numeral.
1.NO.1a7 Count forward beginning from any given number below 10	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
1.NO.1a8 Count up to 31 objects in a line, rectangle, or array	**Counting and Cardinality** K CC Count to tell the number of objects.	K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. a) When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with tone and only one object. K.CC.B.5 Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.
Progress Indicator: E.NO.1b developing an understanding of number and principles of quantity (e.g., hold up 5 fingers at once to show 5, locate things in 2s without counting; using number words to indicate small exact numbers or relative change in quantity - more, small)		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.NO.1b3 Compare 2 sets and identify the set that is either greater than or less than the other set	**Counting and Cardinality** K CC Compare numbers.	K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
Progress Indicator: E.NO.1c developing number line skills (linear representations) using 0 to 20, and later 0 to 100		

Core Content Connectors: 1	CCRA Domain/Cluster	Idaho Content Standard
1.NO.1c1 Use a number line to count up to 31 objects by matching 1 object per number	**Counting and Cardinality** K CC Count to tell the number of objects.	K.CC.B.4 Understand the relationship between numbers and quantities; connect counting to cardinality. a) When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
Progress Indicator: E.NO.1d identifying numbers (names, symbols, quantity) and the count sequence		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.NO.1d3 Identify numerals 0-31	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.3 Written numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects.)
1.NO.1d4 Identify the numeral up to 31 when presented the name	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.3 Written numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects.)
Progress Indicator: E.NO.1e reading and writing numbers; counting and estimating (e.g., how many?; skip counting by 2s, 5s, 10s; even/odd)		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.NO.1e2 Write or select the numerals 0-31	**Counting and Cardinality** K CC Know number names and the count sequence.	K.CC.A.3 Written numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects.)
Progress Indicator: NO.1f representing, ordering, and comparing whole numbers		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.NO.1f2 Order up to 3 sets that have up	**Counting and Cardinality**	K.CC.C.6 Indentify whether the number of

to 10 objects in each set	K CC Compare numbers.	objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
1.NO.1f3 Order up to 3 sets with up to 20 objects in each set	**Counting and Cardinality** K CC Compare numbers.	K.CC.C.6 Indentify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
1.NO.1f4 Order up to 3 numbers up to 31	**Counting and Cardinality** K CC Compare numbers.	K.CC.C.6 Indentify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
1.NO.1f5 Identify the smaller or larger number given 2 numbers between 0-31	**Counting and Cardinality** K CC Compare numbers.	K.CC.C.7 Compare two numbers between 1 and 10 presented as written numerals.
Progress Indicator: E.NO.1h applying place value understanding to compare and order numbers, express number relationships (<, >, =), and express numbers in expanded form		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.NO.1h1 Build representations of numbers up to 19 by creating a group of 10 and some 1s (e.g., 13 = one 10 and three 1s)	**Number and Operations in Base Ten** K NBT Work with numbers 11-19 to gain foundations for place value. 1 NBT Understand place value.	K.NBT.A.1 Compose and decompose numbers from 11 to 19 into tens ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. 1.NBT.B.2 Understand that the two digits

		of a two-digit number represent amounts of tens and ones. Understand the following as special cases: b) The numbers from 11 to 19 are composed of a ten and one, two, three four, five, six, seven, eight, or nine ones.
1.NO.1h2 Identify the value of the numbers in the tens and ones place within a given number up to 31	**Number and Operations in Base Ten** 1 NBT Understand place value.	1.NBT.B.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: a) 10 can be thought of as a bundle of ten ones – called a "ten". b) The numbers from 11 to 19 are composed of a ten and one, two, three four, five, six seven, eight, or nine ones.
1.NO.1h3 Compare two digit numbers up to 31 using representations and numbers (e.g., identify more tens, less tens, more ones, less ones, larger number, smaller number)	**Number and Operations in Base Ten** 1 NBT Understand place value.	1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
Progress Indicator: E.NO.1i recognizing zero as an additive identity, origin for the number line, and representing no units as a quantity or in place value		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.NO.1i1 Recognize zero as representing none or no objects	**Counting and Cardinality** K CC Know number names and the counts sequence.	K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
1.NO.1i2 Recognize zero as an additive	**Operations and Algebraic Thinking**	1.OA.B.3 Apply properties of operations

identity	1 OA Understand and apply properties of operations and the relationship between addition and subtraction.	as strategies to add and subtract. Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6+ 4 = 2 + 10 = 12. (Associative property of addition.)

Progress Indicator: E.NO.2a representing addition and subtraction in multiple ways (composing/ decomposing numbers, diagrams, using objects, arrays, equations, number lines), including regrouping		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.NO.2a4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record or select the answer	**Operations and Algebraic Thinking** K OA Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	K.OA.A.4 For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation
1.NO.2a5 Count 2 sets to find sums up to 10	**Operations and Algebraic Thinking** K OA Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. K.OA.A.5 Fluently add and subtract within 5.
1.NO.2a6 Count 2 sets to find sums up to 20	**Operations and Algebraic Thinking** 1 OA Add and subtract within 20.	1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). 1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a

		number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
1.NO.2a7 Decompose a set of up to 10 objects into a group; count the quantity in each group	**Operations and Algebraic Thinking** K OA Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.	K.OA.A.3 Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). K.OA.A.5 Fluently add and subtract within 5.
1.NO.2a8 Decompose a set of up to 20 objects into a group; count the quantity in each group	**Operations and Algebraic Thinking** 1 OA Add and subtract within 20.	1.OA.C.5 Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). 1.OA.C.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating

		the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
1.NO.2a9 Use manipulatives or representations to write simple addition or subtraction equations within 20 based upon a word problem	**Operations and Algebraic Thinking** 1 OA Represent and solve problems involving addition and subtraction.	1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
1.NO.2a10 Use data presented in graphs (i.e., pictorial, object) to solve one step "how many more" or "how many less" word problems	**Operations and Algebraic Thinking** 1 OA Represent and solve problems involving addition and subtraction.	1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
1.NO.2a11 Solve word problems within 20	**Operations and Algebraic Thinking** 1 OA Represent and solve problems involving addition and subtraction.	1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. 1.OA.A.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to

		represent the problem.
Progress Indicator: E.NO.2c working flexibly with common addition and subtraction situations		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.NO.2c1 Identify and apply addition and equal signs	**Operations and Algebraic Thinking** 1 OA Work with addition and subtraction equations.	1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.

Progress Indicator: E.NO.3a exploring and explaining answers to questions, such as "Does this answer make sense?"			
Core Content Connectors: K- 1 -2	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[1]**	
1-2.NO.3a1 Identify the problem within a word problem (e.g., "Bill had two apples. Sam gave Bill two more apples. How many apples does Bill have now?" – student underlines "How many apples does Bill have now?"	1.OA Represent and solve problems involving addition and subtraction	CCRA.Math.Practice.MP1 Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to	CCRA.Math.Practice.MP5 Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
1-2.NO.3a2 Make sense of and solve story word problems	2.OA Represent and solve problems involving addition and subtraction	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
1-2.NO.3a3 Use a given strategy to check solutions (e.g., use addition to check an answer to a subtraction problem)	2.NBT Use place value understanding and properties of operations to add and subtract	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
Progress Indicators: E.NO.3b constructing arguments using concrete referents such as objects, diagrams, tables, actions (e.g., clapping, movement) and estimating			
Core Content Connectors: K- 1 -2	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice (p. 6-8 in Mathematics document)***	
1-2.NO.3b1 Use an appropriate tool to help solve a given problem (e.g., use a ruler to measure in inches)	2.MD Measure and estimate lengths in standard units	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
1-2.NO.3b2 Use a strategy, rule, or identified characteristic to solve a given routine or non-routine problem (e.g., sort given	1G Reason with shapes and their attributes	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

shapes based upon the rule that triangles have three corners; inches are smaller units than feet so use inches to measure smaller items such as a pencil)		reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	

Progress Indicator: E.PRF.1b exploring and describing how addition or subtraction changes a quantity		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.PRF.1b3 Using objects or pictures respond appropriately to "add __" and "take away ___"	**Operations and Algebraic Thinking** 1 OA Represent and solve problems involving addition and subtraction.	1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
Progress Indicator: E.PRF.1c modeling problem solving situations that involve addition and subtraction of whole numbers using objects, diagrams, and symbols		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.PRF.1c2 Solve one step addition and subtraction word problems where the change or result is unknown (4 + _ = 7) or (4 + 3 = __), within 20 using objects,	**Operations and Algebraic Thinking** 1 OA Represent and solve problems involving addition and subtraction.	1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and

drawings, pictures		comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
Explanations and clarifications:		

Progress Indicator: E.PRF.2a recognizing, describing, and extending simple repeating (ABAB) and growing (A+1, A+2, A+3) patterns (e.g., colors, sounds, words, shapes, numeric – counting, odd, even)		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.PRF.2a4 Use a number line to extend the numerical patterns that grow at a constant rate (2, 4, 6, 8)		No CCRA linked
Progress Indicator: E.PRF.2b creating and explaining repeating and growing patterns using objects or numbers		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.PRF.2b2 Create a growing pattern using numbers or objects		No CCRA linked
Progress Indicator: E.PRF.2c extending and analyzing simple numeric patterns with rules that involve addition and subtraction		
Core Content Connectors: 1	**CCRA Domain/Cluster**	**Idaho Content Standard**
1.PRF.2c1 Identify the rule of a given arithmetic pattern		No CCRA linked

Mathematics | Grade 2 | Overview

Operations and Algebraic Thinking (OA)
• Represent and solve problems involving addition and subtraction.
• Work with equal groups of objects to gain foundations for multiplication.
• Add and subtract within 20.
Number and operations in Base Ten (NBT)
• Understand place value.
• Use place value understanding and properties of operations to add and subtract..
Measurement and Data (MD)
• Measure and estimate lengths in standard units.
• Relate addition and subtraction to length.
• Work with time and money.
• Represent and interpret data.
Geometry (G)
• Reason with shapes and their attributes.

Progress Indicator: E.DPS.1a posing questions of interest that can be answered by counting or collecting data (e.g., concrete comparisons about students, classroom materials, science topics) with teacher guidance		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.DPS.1a5 Select a question about 3 attributes that can be concretely represented	**Measurement and Data** 1 MD Represent and interpret data.	1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
2.DPS.1a6 Identify up to 3 categories resulting from a selected question	**Measurement and Data** 1 MD Represent and interpret data.	1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each

		category, and how many more or less are in one category than in another.
2.DPS.1a7 Analyze data by sorting into categories established by each question	**Measurement and Data** 2 MD Represent and interpret data.	2.MD.D.10 Draw a picture graph and a bar graph to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.
2.DPS.1a8 Interpret the number of points in each category		No CCRA linked
Progress Indicator: E.DPS.1c collecting and organizing/representing data (e.g., picture graphs, tally charts, bar graphs)		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.DPS.1c2 Organize data by representing categorical data on a pictorial graph or bar graph	**Measurement and Data** 2 MD Represent and interpret data.	2.MD.D.10 Draw a picture graph and a bar graph to represent a data set with up to four categories. Solve simple put together, take-apart, and compare problems using information presented in a bar graph.
2.DPS.1c3 Organize data by representing continuous data on a line plot	**Measurement and Data** 2 MD Represent and interpret data.	2.MD.D.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
Progress Indicator: E.DPS.1d recognizing that data can take on different values		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.DPS.1d2 Identify the value of each category represented on picture graph and bar graph or each point on a line plot	**Measurement and Data** 2 MD Represent and interpret data.	2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take apart, and compare problems using information

		presented in a bar graph.
Progress Indicator: E.DPS.1e describing and comparing data and beginning to identify what the data do or do not show (e.g., bar graphs, line plots, picture graphs)		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.DPS.1e2 Compare the information shown in a bar graph or picture graph with up to 4 categories. Solve simple comparisons of how many more or how many less	**Measurement and Data** 2 MD Represent and interpret data.	2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take apart, and compare problems using information presented in a bar graph.

Progress Indicator: E.GM.1a recognizing, describing (using spatial language) and naming shapes regardless of orientation or size and locating shapes in the environment		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.GM.1a4 Identify two-dimensional shapes such as rhombus, pentagons, hexagons, octagon, ovals, equilateral, isosceles, and scalene triangles	**Geometry** 2 G Reason with shapes and their attributes.	2.G.A.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
Progress Indicator: E.GM.1b analyzing and comparing two- (and later) three-dimensional shapes using informal language (e.g., flat, solid, corners) to describe their differences and similarities, as well as their component parts (number of sides, vertices) and other attributes (e.g., sides of equal length)		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.GM.1b3 Distinguish two- or three-dimensional shapes based upon their attributes (i.e., # of sides, equal or different lengths of sides, # of faces, # of corners)	**Geometry** 2 G Reason with shapes and their attributes.	2.G.A.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
Progress Indicator: E.GM.1d composing three-dimensional shapes, using concrete models/materials (cubes, prisms, cones, and		

cylinders)		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.GM.1d1 Compose three- dimensional shapes	**Geometry** 1 G Reason with shapes and their attributes.	1.G.A.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half circles, and quarter circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
Progress Indicator: E.GM.1e drawing and identifying shapes with specific attributes (e.g., number of sides or equal angles) not determined by direct measuring		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.GM.1e1 Draw two- dimensional shapes with specific attributes	**Geometry** 2 G Reason with shapes and their attributes.	2.G.A.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
Progress Indicator: E.GM.1f partitioning shapes into 2, 3, or 4 equal parts and describing the parts (halves, quarters, fourths, thirds)		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.GM.1f2 Partition circles and rectangles into 2 and 4 equal parts	**Geometry** 2 G Reason with shapes and their attributes.	2.G.A.3 Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words *halves, thirds, half of, a third of,* etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.
2.GM.1f3 Label a partitioned shape	**Geometry**	2.G.A.3 Partition circles and rectangles into

(e.g., one whole rectangle was separated into 2 halves, one whole circle was separated into three thirds)	2 G Reason with shapes and their attributes.	two, three, or four equal shares, describe the shares using the words *halves, thirds, half of, a third of*, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.
Explanations and clarifications: The following Progress Indicator was **not included** due to complexity, no CCRA are linked to this Progress Indicator: **E.GM.1g** using spatial language to describe and name more complex or atypical shapes based on their defining characteristics.		

Progress Indicator: E.ME.1a recognizing, identifying, and describing the measurable attributes of objects		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.ME.1a3 Select appropriate tool and unit of measurement to measure an object (ruler or yard stick; inches or feet)	**Measurement and Data** 2 MD Measure and estimate lengths in standard units.	2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2.ME.1a4 Solve word problems using dollar bills, quarters, dimes, nickles, or pennies	**Measurement and Data** 2 MD Work with time and money.	2.MD.C.8 Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies using $ and ¢ symbols appropriately. *Example: If you have 2 dimes and 3 pennies, how many cents do you have?*
2.ME.1a5 Tell time to the nearest ½ hour using digital clocks	**Measurement and Data** 1 MD Tell and write time.	1.MD.B.3 Tell and write time in hours and half-hours using analog and digital clocks.
Progress Indicator: E.ME.1b comparing and ordering objects/events according to their specified attributes (using standard or non-standard units of measure), including indirectly by using a third object, or using common referents to estimate or compare		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**

2.ME.1b5 Solve word problems involving the difference in standard length units	**Measurement and Data** 2 MD Measure and estimate lengths in standard units.	2.MD.A.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
Progress Indicator: E.ME.1c recognizing that the smaller the unit, the more units are needed to measure an object; and that units can be decomposed/partitioned into smaller units		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.ME.1c2 Measure the attributes (length, width, height) of an object using 2 different size units	**Measurement and Data** 2 MD Measure and estimate lengths in standard units.	2.MD.A.2 Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
2.ME.1c3 Recognize that standard measurement units can be decomposed into smaller units	**Measurement and Data** 2 MD Measure and estimate lengths in standard units.	2.MD.A.3. Estimate lengths using units of inches, feet, centimeters, and meters.

Progress Indicator: E.ME.2a applying non-standard and common standard units to measure (length, height, weight, time)		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.ME.2a3 Estimate the length of an object using units of feet and inches	**Measurement and Data** 2 MD Measure and estimate lengths in standard units.	2.MD.A.3 Estimate lengths using units of inches, feet, centimeters, and meters.
2.ME.2a4 Solve one step subtraction problems involving the difference of the lengths of 2 objects in standard length units	**Measurement and Data** 2 MD Measure and estimate lengths in standard units.	2.MD.A.4 Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.
Progress Indicator: E.ME.2b selecting tools and using units of measures appropriately and consistently, with no gaps or overlaps in the technique of measuring		

Core Content Connectors: 2	CCRA Domain/Cluster	Idaho Content Standard
2.ME.2b2 Select appropriate tools and demonstrate or identify appropriate measuring techniques	**Measurement and Data** 2 MD Measure and estimate lengths in standard units.	2.MD.A.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
Progress Indicator: E.ME2c recognizing situations that require precision and those where an estimation or proportional matching is appropriate		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.ME.2c1 Determine whether a situation calls for a precise measurement or an estimation		
Progress Indicator: E.ME2d describing a unit as an amount/quantity (rather than an object or a mark on a scale)		
No CCCs developed for this PI		No CCRA linked

Progress Indicator: E.NO.1a showing mastery of the prerequisite core skills of cardinality, constancy, and 1:1 correspondence		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.NO.1a9 Rote count up to 100	**Counting and Cardinality** K CC Know number names and the counts sequence. **Number and Operations in Base Ten** 1 NBT Extend the counting sequence.	K.CC.A.1 Count to 100 by ones and by tens. 1.NBT.A.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
Progress Indicator: E.NO.1d identifying numbers (names, symbols, quantity) and the count sequence		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.NO.1d5 Identify numerals 0-100	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

2.NO.1d6 Identify the numeral between 0 and 100 when presented the name	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
Progress Indicator: E.NO.1e reading and writing numbers; counting and estimating (e.g., how many?; skip counting by 2s, 5s, 10s; even/odd)		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.NO.1e3 Write or select the numerals 0-100	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
2.NO.1e4 Skip count by 5s	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.2 Count within 1000: skip-count by 5s, 10s, and 100s.
2.NO.1e5 Skip count by 10s	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.2 Count within 1000: skip-count by 5s, 10s, and 100s.
2.NO.1e6 Skip count by 100s	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.B.2 Count within 1000: skip-count by 5s, 10s, and 100s.
2.NO.1e7 Identify numbers as odd or even	**Operations and Algebraic Thinking** 2 OA Work with equal groups of objects to gain foundation for multiplication.	2.OA.C.3 Determine whether a group of objects (up to 20) has an odd or even number of members, e.g.; by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
2.NO.1e8 Mentally add or subtract 10 from a given set from the 10s family (e.g., what is 10 more than 50? What is 10 less than 70?)1.NBT.C.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to	**Number and Operations in Base Ten** 2 NBT Use place value understanding and properties of operations to add and subtract.	2.NBT.B.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.

2.NO.1e9 Mentally add or subtract 100 from a given set from the 100s family (e.g., what is 100 more than 500? What is 100 less than 700?)	**Number and Operations in Base Ten** 2 NBT Use place value understanding and properties of operations to add and subtract.	2.NBT.B.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900.
Progress Indicator: NO.1f representing, ordering, and comparing whole numbers		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.NO.1f6 Compare (greater than, less than, equal to) 2 numbers up to 100	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
Progress Indicator: E.NO.1h applying place value understanding to compare and order numbers, express number relationships (<, >, =), and express numbers in expanded form		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.NO.1h4 Build representations of 3 digit numbers using tens and ones	**Number and Operations in Base Ten** 1 NBT; 2 NBT Understand place value.	1.NBT.B.2b Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: b) The numbers from 11 to 19 are composed of a ten and one, two, three four, five, six, seven, eight, or nine ones. 2.NBT.A.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones: e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: a) 100 can be thought of as a bundle of ten

		tens – called a "hundred." b) The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
2.NO.1h5 Build representations of 3 digit numbers using hundreds, tens and ones	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones: e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: a) 100 can be thought of as a bundle of ten tens – called a "hundred." b) The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
2.NO.1h6 Compare 2 digit numbers using representations and numbers (e.g., identify more tens, less tens, more ones, less ones, larger number, smaller number)	**Number and Operations in Base Ten** 1 NBT; 2.NBT Understand place value.	1.NBT.B.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, <. 2.NBT.A.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
2.NO.1h7 Compare 3 digit numbers using representations and numbers (e.g., identify more hundreds, less hundreds,	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =,

more tens, less tens, more ones, less ones, larger number, smaller number)		and < symbols to record the results of comparisons.
2.NO.1h8 Write or select expanded form for any 2 digit number	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
2.NO.1h9 Write or select expanded form for any 3 digit number	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
Progress Indicator: E.NO.1i recognizing zero as an additive identity, origin for the number line, and representing no units as a quantity or in place value		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.NO.1i3 Explain what the zero represents in place value (hundreds, tens, ones) in a number	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

Progress Indicator: E.NO.2a representing addition and subtraction in multiple ways (composing/ decomposing numbers, diagrams, using objects, arrays, equations, number lines), including regrouping		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.NO.2a12 Model addition and subtraction with base 10 blocks within 20	**Number and Operations in Base Ten** 2 NBT Use place value understanding and properties of operations to add and subtract.	2.NBT.B.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction
2.NO.2a13 Model addition and subtraction with base 10 blocks within 50	**Number and Operations in Base Ten** 2 NBT Use place value understanding and properties of operations to add and subtract.	2.NBT.B.5 Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction
2.NO.2a14 Model addition and	**Number and Operations in Base Ten**	2.NBT.B.5 Fluently add and subtract within

subtraction with base 10 blocks within 100	2 NBT Use place value understanding and properties of operations to add and subtract.	100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction
2.NO.2a15 Remove objects from a set in a subtraction situation to find the amount remaining up to a minuend of 20	**Operations and Algebraic Thinking** 1 OA Represent and solve problems involving addition and subtraction.	1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. 1.OA.B.4 Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.
2.NO.2a16 Solve word problems within 20	**Number and Operations in Base Ten** 2 OA Represent and solve problems involving addition and subtraction.	2.OA.A.1 Use addition and subtraction within 100 to solve one-and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
2.NO.2a17 Solve word problems within 100	**Operations and Algebraic Thinking** 2 OA Represent and solve problems involving addition and subtraction.	2.OA.A.1 Use addition and subtraction within 100 to solve one-and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions
2.NO.2a18 Use diagrams and number lines to solve addition or subtraction problems	**Number and Operations in Base Ten** 2 NBT Use place value understanding and	2.NBT.B.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties

	properties of operations to add and subtract.	of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. 2.MD.B.6 Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.
2.NO.2a19 Combine up to 3 sets of 20 or less	**Number and Operations in Base Ten** 2 NBT Use place value understanding and properties of operations to add and subtract.	2.NBT.B.6 Add up to four two-digit numbers using strategies based on place value and properties of operations.
Progress Indicator: E.NO.2b explaining or modeling the relationship between addition and subtraction		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.NO.2b1 Use commutative properties to solve addition problems with sums up to 20 (e.g., 3 + 8 = 11 therefore 8 + 3 = __)	**Operations and Algebraic Thinking** 1 OA Understand and apply properties of operations and the relationship between addition and subtraction.	1.OA.B.3 Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*
2.NO.2b2 Use associative property to solve addition problems with sums up to 20	**Operations and Algebraic Thinking** 1 OA Understand and apply properties of	1.OA.B.3 Apply properties of operations as strategies to add and subtract. *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is*

	operations and the relationship between addition and subtraction.	*also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*
Progress Indicator: E.NO.2c working flexibly with common addition and subtraction situations		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.NO.2c2 Identify and apply addition, subtraction, and equal signs	**Number and Operations in Base Ten** 1 OA Work with addition and subtraction equations.	1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.
2.NO.2c3 Compose ones into tens and/or tens into hundreds in addition situation	**Number and Operations in Base Ten** 1 NBT; 2 NBT Use place value understanding and properties of operations to add and subtract.	1.NBT.C.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. 2.NBT.B.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship

		between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
2.NO.2c4 Decompose tens into ones and/or hundreds into tens in subtraction situations	**Number and Operations in Base Ten** 1 NBT; 2 NBT Use place value understanding and properties of operations to add and subtract.	1.NBT.C.6 Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. 2.NBT.B.7 Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

Progress Indicator: E.NO.3a exploring and explaining answers to questions, such as "Does this answer make sense?"			
Core Content Connectors: K- 1 -2	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[1]**	
1-2.NO.3a1 Identify the problem within a word problem (e.g., "Bill had two apples. Sam gave Bill two more apples. How many apples does Bill have now?" – student underlines "How many apples does Bill have now?"	1.OA Represent and solve problems involving addition and subtraction	CCRA.Math.Practice.MP1 Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	CCRA.Math.Practice.MP5 Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
1-2.NO.3a2 Make sense of and solve story word problems	2.OA Represent and solve problems involving addition and subtraction	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
1-2.NO.3a3 Use a given strategy to check solutions (e.g., use addition to check an answer to a subtraction problem)	2.NBT Use place value understanding and properties of operations to add and subtract	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
Progress Indicators: E.NO.3b constructing arguments using concrete referents such as objects, diagrams, tables, actions (e.g., clapping, movement) and estimating			
Core Content Connectors: K- 1 -2	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice (p. 6-8 in Mathematics document)***	
1-2.NO.3b1 Use an appropriate tool to help solve a given problem (e.g., use a ruler to measure in inches)	2.MD Measure and estimate lengths in standard units	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated

		arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	reasoning.
1-2.NO.3b2 Use a strategy, rule, or identified characteristic to solve a given routine or non-routine problem (e.g., sort given shapes based upon the rule that triangles have three corners; inches are smaller units than feet so use inches to measure smaller items such as a pencil)	1G Reason with shapes and their attributes	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

Progress Indicator: E.PRF.1c modeling problem solving situations that involve addition and subtraction of whole numbers using objects, diagrams, and symbols		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.PRF.1c3 Solve one or two step addition and subtraction problems, and add and subtract within 100, using objects, drawings, pictures	**Operations and Algebraic Thinking** 2 OA Represent and solve problems involving addition and subtraction.	2.OA.A.1 Use addition and subtraction within 100 to solve one and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
2.PRF.1c4 Use pictures, drawings or objects to represent the steps of a problem	**Operations and Algebraic Thinking** 2 OA Represent and solve problems involving addition and subtraction.	2.OA.A.1 Use addition and subtraction within 100 to solve one and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
2.PRF.1c5 Write or select an equation representing the problem and its solution	**Operations and Algebraic Thinking** 2 OA Represent and solve problems involving addition and subtraction.	2.OA.A.1 Use addition and subtraction within 100 to solve one and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

Progress Indicator: E.PRF.2a recognizing, describing, and extending simple repeating (ABAB) and growing (A+1, A+2, A+3) patterns (e.g., colors, sounds, words, shapes, numeric – counting, odd, even)		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.PRF.2a6 Use a number line to extend the numerical patterns that grow at a constant rate (2, 4, 6, 8)		No CCRA linked
Progress Indicator: E.PRF.2b creating and explaining repeating and growing patterns using objects or numbers		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.PRF.2b3 Use a number line to extend arithmetic patterns that are decreasing		No CCRA linked
Progress Indicator: E.PRF.2c extending and analyzing simple numeric patterns with rules that involve addition and subtraction		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.PRF.2c2 Identify the rule of arithmetic patterns that are increasing		No CCRA linked
2.PRF.2c3 Identify the rule of arithmetic patterns that are decreasing		No CCRA linked

Progress Indicator: E.SE.1c using symbols (=, >, <) to compare whole number quantities, write equations, and determine if equations are true		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.SE.1c1 Compare sets and use appropriate symbol to label the first as =, <, or > the second set	**Counting and Cardinality** K CC Compare numbers.	K.CC.C.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
2.SE.1c2 Label simple equations as = or with the phrase not equal	**Operations and Algebraic Thinking** 1 OA Work with addition and subtraction	1.OA.D.7 Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true

	equations.	or false. *For example, which of the following equations are true and which are false? 6 =6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*
Progress Indicator: E.SE.1d representing addition and subtraction in multiple formats, including expressions		
Core Content Connectors: 2	**CCRA Domain/Cluster**	**Idaho Content Standard**
2.SE.1d1 Represent addition of 2 sets when shown the + symbol	**Operations and Algebraic Thinking** 2 OA Represent and solve problems involving addition and subtraction.	2.OA.A.1 Use addition and subtraction within 100 to solve one-and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
2.SE.1d2 Represent a "taking away" situation with the – symbol	**Operations and Algebraic Thinking** 1 OA Work with addition and subtraction equations.	1.OA.D.8 Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ – 3, 6 + 6 = _.*

Mathematics | Grade 3 | Overview

Operations and Algebraic Thinking (OA)
• Represent and solve problems involving multiplication and division.
• Understand properties of multiplication and the relationship between multiplication and division.
• Multiply and divide within 100.
• Solve problems involving the four operations, and identify and explain patterns in arithmetic.
Number and operations in Base Ten (NBT)
• Use place value understanding and properties of operations to perform multi-digit arithmetic.
Number and operations - Fractions (NF)
• Develop understanding of fractions as numbers.
Measurement and Data (MD)
• Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
• Represent and interpret data.
• Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
• Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
Geometry (G)
• Reason with shapes and their attributes.

Progress Indicator: E.DPS.1f formulating questions and designing investigations (defining measures and variables)		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.DPS.1f1 Develop questions, make a plan for data collection		No CCRA linked
Progress Indicator: E.DPS.1g collecting data and representing data (e.g., bar graphs, frequency tables, line plots)		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.DPS.1g1 Collect data, organize into picture or bar graph	**Measurement and Data** 3 MD Represent and interpret data.	3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information

		presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*
3.DPS.1g2 Organize measurement data into a line plot	**Measurement and Data** 3 MD Represent and interpret data.	3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
Progress Indicator: E.DPS.1i describing data shapes and what the data representations do and do not show (bar graphs, picture graphs, frequency tables, line plots, circle graphs) including the attributes used		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.DPS.1i1 Select the appropriate statement that describes the data representations based on a given graph (picture, bar, line plots)	**Measurement and Data** 3 MD Represent and interpret data.	3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*
Progress Indicator: **E.DPS.1k using data to make and support claims and interpretations (e.g., making comparisons among individuals, between individuals and the group, and among groups)**		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.DPS.1k1 Apply results of data to a real world situation		No CCRA linked

Progress Indicator: E.GM.1h describing, analyzing, comparing, and classifying two-dimensional figures (triangles, quadrilaterals) using shared attributes

Core Content Connectors: 3	CCRA Domain/Cluster	Idaho Content Standard
3.GM.1h1 Identify shared attributes of shapes	**Geometry** 3 G Reason with shapes and their attributes.	3.G.A.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having 4 sides) and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals that do not belong to any of these subcategories.
Progress Indicator: E.GM.1i partitioning shapes into equal parts with equal areas and recognizing that each part is a unit fraction of the whole		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.GM.1i1 Partition rectangles into equal parts with equal area	**Geometry** 3 G Reason with shapes and their attributes.	3.G.A.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as ¼ of the area of the shape.*
Explanations and clarifications: CCRA not addressed		

Progress Indicator: E.ME.1a recognizing, identifying, and describing the measurable attributes of objects		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.ME.1a1 Tell time to the nearest 5 minutes using a digital clock	**Measurement and Data** 2 MD Work with time and money.	2.MD.C.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
3.ME.1a2 Solve word problems involving the addition and subtraction of time intervals of whole hours or within an hour (e.g., whole hours: 5:00 to 8:00,	**Measurement and Data** 3 MD Solve problems involving measurement and estimation of intervals of	3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals

within hours: 7:15 to 7:45)	time, liquid volumes, and masses of objects.	in minutes, e.g., by representing the problem on a number line diagram.
Progress Indicator: E.ME.1d describing and demonstrating: unit attributes, iterating, tiling, identical units, number line intervals, standardization, proportionality, additivity, and origin		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.ME.1d1 Use tiling and addition to determine area	**Measurement and Data** 3 MD Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.C.7a Relate area to the operations of multiplication and addition. a) Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
3.ME.1d2 Measure area of rectilinear figures by counting squares	**Measurement and Data** 3 MD Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.C.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
Progress Indicator: E.ME.1e justifying the need for measuring with standard units as compared to non-standard units		
No CCCs written for this PI		No CCRA linked
Progress Indicator: E.ME.1f selecting the appropriate unit for measuring a given attribute (length, area, mass, liquid volume, size of angle), recognizing that a unit must have the same attributes as the object (e.g., unit of length must measure an object that has length)		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.ME.1f1 Select appropriate units for measurement (liquid volume, area, time, money)	**Measurement and Data** 3 MD Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings

		(such as a beaker with a measurement scale) to represent the problem.
3.ME.1f2 Add to solve 1 step word problems	**Measurement and Data** 3 MD Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.
Progress Indicator: E.ME.1g exploring what happens to 2-dimensional measurements (perimeter or area) when the dimensions of the figure are changed		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.ME.1g1 Identify a figure as getting larger or smaller when the dimensions of the figure change	**Measurement and Data** 3 MD Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	3.MD.D.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

Progress Indicator: E.ME.2e selecting and applying appropriate customary or metric units and tools to measure or estimate (liquid volume, mass, perimeter, area, time, and angles)		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.ME.2e1 Select appropriate tool for measurement: liquid volume, area, time, money	**Measurement and Data** 3 MD Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems

		involving masses or volumes that are given in the same units, e.g. by using drawings (such as a beaker with a measurement scale) to represent the problem.
3.ME.2e2 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch	**Measurement and Data** 3 MD Represent and interpret data.	3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
3.ME.2e3 Measure to solve problems using number lines and ruler to 1 inch, ½ inch, or ¼ of an inch	**Measurement and Data** 3 MD Represent and interpret data.	3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
Progress Indicator: E.ME.2h using a variety of strategies (decomposing complex shapes, using counting strategies, arrays, formulas) to estimate or measure area and perimeter (including irregular shapes/objects)		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.ME.2h1 Use addition to find the perimeter of a rectangle	**Measurement and Data** 3 MD Geometric measurement: recognize perimeter as an atribute of plane figures and distinguish between linear and area measures.	3.MD.D.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
Progress Indicator: E.ME.2i selecting and using benchmarks to estimate measurements		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**

3.ME.2i1 Estimate liquid volume	3 MD Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g. by using drawings (such as a beaker with a measurement scale) to represent the problem.

Progress Indicator: E.NO.1e reading and writing numbers; counting and estimating (e.g., how many?; skip counting by 2s, 5s, 10s; even/odd)		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.NO.1e1 Skip count by 100s	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.2 Count within 1000: skip-count by 5s, 10s, and 100s.
3.NO.1e2 Mentally add or subtract 100 from a given set from the 100s family (e.g., what is 100 more than 500? What is 100 less than 700?)	**Number and Operations in Base Ten** 2 NBT Use place value understanding and properties of operations to add and subtract.	2.NBT.B.8 Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100 – 900.
Progress Indicator: E.NO.1h applying place value understanding to compare and order numbers, express number relationships (<, >, =), and express numbers in expanded form		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.NO.1h1 Compare 3 digit numbers using representations and numbers (e.g., identify more hundreds, less hundreds, more tens, less tens, more ones, less ones, larger number, smaller number)	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.4 Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
Progress Indicator: E.NO.1j applying place value concepts to: read, write, and compare whole numbers up to 100,000; use expanded form; and round numbers to a given place		

Core Content Connectors: 3	CCRA Domain/Cluster	Idaho Content Standard
3.NO.1j1 Build representations of numbers using hundreds, tens and ones	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.1 Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones: e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: a) 100 can be thought of as a bundle of ten tens – called a "hundred." b) The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
3.NO.1j2 Write or select the expanded form for up to 3 digit number	**Number and Operations in Base Ten** 2 NBT Understand place value.	2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
3.NO.1j3 Use place value to round to the nearest 10 or 100	**Number and Operations in Base Ten** 3 NBT Use place value understanding and properties of operations to perform multi-digit arithmetic.	3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.
3.NO.1j4 Use rounding to solve word problems	**Number and Operations in Base Ten** Use place value understanding and properties of operations to perform multi-digit arithmetic.	3.NBT.A.1 Use place value understanding to round whole numbers to the nearest 10 or 100.
Progress Indicator: E.NO.1l identifying and locating fractions on the number line or as regions, or parts of a set or unit, and recognizing that whole numbers are a subset of rational numbers		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.NO.1l1 Identify the number of	**Number and Operations-Fractions**	3.NF.A.1 Understand a fraction 1/b as the

highlighted parts (numerator) of a given representation (rectangles and circles)	3 NF Develop understanding of fractions as numbers.	quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.NO.1l2 Identify the total number of parts (denominator) of a given representation (rectangles and circles)	**Number and Operations-Fractions** 3 NF Develop understanding of fractions as numbers.	3.NF.A.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.NO.1l3 Identify the fraction that matches the representation (rectangles and circles; halves, fourths, thirds, eighths)	**Number and Operations-Fractions** 3 NF Develop understanding of fractions as numbers.	3.NF.A.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
3.NO.1l4 Identify that a part of a rectangle can be represented as a fraction that has a value between 0 and 1	**Number and Operations-Fractions** 3 NF Develop understanding of fractions as numbers.	3.NF.A.2a and 3.NF.A.2b Understand a fraction as a number on the number line; represent fractions on a number line diagram. a) Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. b) Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

3.NO.1l5 Locate given common unit fractions (i.e., ½, ¼, ⅛) on a number line or ruler	**Number and Operations-Fractions** 3 NF Develop understanding of fractions as numbers.	3.NF.A.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram. a) Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. b) Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

Progress Indicator: E.NO.2b explaining or modeling the relationship between addition and subtraction		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.NO.2b1 Use the relationships between addition and subtraction to solve problems	**Number and Operations in Base Ten** 3 NBT Use place value understanding and properties of operations to perform multi-digit arithmetic.	3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
Progress Indicator: E.NO.2c working flexibly with common addition and subtraction situations		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.NO.2c1 Solve multi-step addition and subtraction problems up to 100	**Number and Operations in Base Ten** 3 NBT Use place value understanding and properties of operations to perform multi-digit arithmetic.	3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Progress Indicator: E.NO.2d modeling multiplication (equal-sized groups, arrays, area models, equal-sized jumps on number lines, multiplicative comparisons) and division (successive subtraction, partitioning, sharing) of whole numbers		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.NO.2d1 Find the total number of objects when given the number of identical groups and the number of objects in each group neither number larger than 5	**Operations and Algebraic Thinking** 2 OA Work with equal groups of objects to gain foundations for multiplication. 3 OA Represent and solve problems involving multiplication and division.	2.OA.C.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends. 2.G.A.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. 3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7. 2.G.A.2 Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.*
3.NO.2d2 Find total number inside an array with neither number in the columns or rows larger than 5	**Operations and Algebraic Thinking** 2 OA Work with equal groups of objects to gain foundations for multiplication. 3 OA Represent and solve problems involving multiplication and division.	2.OA.C.4 Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends. 3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in*

		which a total number of objects can be expressed as 5 × 7
3.NO.2d3 Solve multiplication problems with neither number greater than 5	**Operations and Algebraic Thinking** 3 OA Represent and solve problems involving multiplication and division.	3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7*
3.NO.2d4 Determine how many objects go into each group when given the total number of objects and the number of groups where the number in each group or number of groups is not greater than 5	**Operations and Algebraic Thinking** 3 OA Represent and solve problems involving multiplication and division.	3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.* 3.OA.B.6 Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8
3.NO.2d5 Determine the number of groups given the total number of objects and the number of objects in each group where the number in each group and the number of groups is not greater than 5	**Operations and Algebraic Thinking** 3 OA Represent and solve problems involving multiplication and division.	3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups*

		can be expressed as 56 ÷ 8. 3.OA.B.6 Understand division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8.
Progress Indicator: E.NO.2e describing relationships between addition-multiplication; multiplication-division; addition-subtraction; why commutative property does not apply to subtraction or division		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.NO.2e1 Solve or solve and check one or two step word problems requiring addition, subtraction or multiplication with answers up to 100	**Operations and Algebraic Thinking** 3 OA Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA.A.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. 3.OA.D.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

Progress Indicator: E.NO.3c evaluating the reasonableness of answers using mental computation, arithmetic patterns, and estimation strategies, including rounding to the nearest 10 or 100			
Core Content Connectors: 3-4	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[2]**	
3-4.NO.3c1 Solve real world problems (e.g., determine	4.OA Use the four operations with whole numbers to solve	Make sense of problems & persevere in solving them.	Use appropriate tools strategically. Attend to precision. Look for and

how many nickels needed to be the equivalent of a quarter) by using mental math (such as skip counting by 2s within 20, 5s within 50, 10s within 100)	problems	Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	make use of structure. Look for and express regularity in repeated reasoning.
3-4.NO.3c2 Evaluate the reasonableness of answers after making computations	3.OA Solve problems involving the 4 operations and identify and explain patterns in arithmetic	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

3-4.NO.3c3 Determine the reasonableness of answers using estimation	3.OA Solve problems involving the 4 operations and identify and explain patterns in arithmetic	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
3-4.NO.3c4 Determine the reasonableness of answers using arithmetic patterns	3.OA Solve problems involving the four operations and identify and explain patterns in arithmetic	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		reasoning.	
Progress Indicator: E.NO.3d constructing arguments and explaining reasonableness of outcomes using a variety of concrete supports (e.g., models, diagrams, tables)			
Core Content Connectors: 3-4	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[3]**	
3-4.NO.3d1 Use modeling or diagrams to construct or select a viable argument for a given problem (e.g., "what is the difference between equilateral, scalene, and isosceles triangles?" and use models of triangles to illustrate correct answer)	3G Reason with shapes and their attributes	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
3-4.NO.3d2 Use models to find equivalencies or solutions	4.NF Extend understanding of fraction equivalence and ordering	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
3-4.NO.3d3 Justify and label solutions as a result of making a comparison (e.g., compare 15 and 25 and label 25 as greater: 15<25)	4NBT Generalize place value understanding for multi-digit whole numbers.	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
3-4.NO.3d4 Explain why a tool or strategy would be used to solve a given problem	3.OA Solve problems involving the four operations, and identify and explain patterns in arithmetic	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	

Progress Indicator: E.PRF.1d describing and modeling how addition, subtraction, multiplication, or division changes a quantity, including with fractions		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.PRF.1d1 Use objects to model multiplication and division situations involving up to 5 groups with up to 5 objects in each group and interpret the results	**Operations and Algebraic Thinking** 3 OA Represent and solve problems involving multiplication and division.	3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.* 3.OA.A.2 Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8.*
Progress Indicator: E.PRF.1e using representations (tables, graphs, equations) to show how values of one quantity are related to values of another and to draw conclusions		

Core Content Connectors: 3	CCRA Domain/Cluster	Idaho Content Standard
3.PRF.1e1 Describe the rule for a numerical pattern (e.g., increase by 2, 5 or 10)	**Operations and Algebraic Thinking** 3 OA Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*
3.PRF.1e2 Select or name the 3 next terms in a numerical pattern where numbers increase by 2, 5 or 10	**Operations and Algebraic Thinking** 3 OA Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*
Progress Indicator: E.PRF.1f representing and explaining equivalence concretely, graphically, and symbolically (equations, rules)		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.PRF.1f 1 Determine the equivalence between number of minutes and the fraction of the hour (e.g., 30 minutes = ½ hour)	**Measurement and Data** 3 MD Solve problems involving measurement and estimation of intervals of time, liquid volumes and masses of objects.	3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
3.PRF.1f 2 Determine the equivalence between the number of minutes and the number of hours (e.g., 60 minutes = 1 hour)	**Measurement and Data** 3 MD Solve problems involving measurement and estimation of intervals of time, liquid volumes and masses of objects.	3.MD.A.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem

		on a number line diagram.

Progress Indicator: E.PRF.2d representing and analyzing patterns and rules (e.g., doubling, adding 3) using words, tables, graphs, and models		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.PRF.2d1 Identify multiplication patterns in a real world setting	**Operations and Algebraic Thinking** 3 OA Solve problems involving the four operations, and identify and explain patterns in arithmetic.	3.OA.D.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.*
3.PRF.2d2 Apply properties of operations as strategies to multiply and divide	**Operations and Algebraic Thinking** 3 OA Understand properties of multiplication and the relationship between multiplication and division.	3.OA.B.5 Apply properties of operations as strategies to multiply and divide. *Examples: If 6 × 4 = 24 is known, then 4 × 6 = 24 is also known. (Commutative property of multiplication.) 3 × 5 × 2 can be found by 3 × 5 = 15, then 15 × 2 = 30, or by 5 × 2 = 10, then 3 × 10 = 30. (Associative property of multiplication.) Knowing that 8 × 5 = 40 and 8 × 2 = 16, one can find 8 × 7 as 8 × (5 + 2) = (8 × 5) + (8 × 2) = 40 + 16 = 56. (Distributive property.)*

Progress Indicator: E.SE.1g using symbols (=, >, <) to compare whole numbers, fractions, or decimals; write equations; and express inverse or related operations		
Core Content Connectors: 3	**CCRA Domain/Cluster**	**Idaho Content Standard**
3.SE.1g1 Use =, <, or > to compare 2 fractions with the same numerator or denominator	**Number and Operations – Fractions** 3 NF Develop understanding of fractions as	3.NF.A.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size

	numbers.	d) Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Mathematics | Grade 4 | Overview

Operations and Algebraic Thinking (OA)
• Use the four operations with whole numbers to solve problems.
• Gain familiarity with factors and multiples.
• Generate and analyze patterns.
Number and operations in Base Ten (NBT)
• Generalize place value understanding for multi-digit whole numbers.
• Use place value understanding and properties of operations to perform multi-digit arithmetic.
Number and operations - Fractions (NF)
• Extend understanding of fraction equivalence and ordering. • Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. • Understand decimal notation for fractions, and compare decimal fractions.
Measurement and Data (MD)
• Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
• Represent and interpret data.
• Geometric measurement: understand concepts of angle and measure angles.
Geometry (G)
• Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

Progress Indicator: E.DPS.1f formulating questions and designing investigations (defining measures and variables)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.DPS.1f2 Develop questions, make a plan for data collection		No CCRA linked
Progress Indicator: E.DPS.1g collecting data and representing data (e.g., bar graphs, frequency tables, line plots)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.DPS.1g3 Collect data, organize in graph (e.g., picture graph, line plot, bar graph)	**Measurement and Data**	3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and

	3 MD Represent and interpret data. 4 MD Represent and interpret data.	two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.* 4.MD.B.4 Make a line plot to display a data set of measurements in fractions of a unit. Solve problems involving addition and subtraction of fractions by using information presented in line plots. *For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.*
Progress Indicator: E.DPS.1i describing data shapes and what the data representations do and do not show (bar graphs, picture graphs, frequency tables, line plots, circle graphs) including the attributes used		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.DPS.1i1 Select the appropriate statement that describes the data representations based on a given graph (picture, bar, line plots)	**Measurement and Data** 3 MD Represent and interpret data.	3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*
Progress Indicator: E.DPS.1j identifying clumps, gaps, trends, or central tendency (mode, median) in the data		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.DPS.1j1 Select an appropriate	**Measurement and Data**	3.MD.B.3 Draw a scaled picture graph and

statement that describes the most frequent or the least frequent data point using a line plot, picture graph, or bar graph	3 MD Represent and interpret data.	a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.* 3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.
Progress Indicator: E.DPS.1k using data to make and support claims and interpretations (e.g., making comparisons among individuals, between individuals and the group, and among groups)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.DPS.1k2 Apply results of data to a real world situation	**Measurement and Data** 3 MD Represent and interpret data.	3.MD.B.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units-whole numbers, halves, or quarters.

Progress Indicator: E.GM.1h describing, analyzing, comparing, and classifying two-dimensional figures (triangles, quadrilaterals) using shared attributes		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.GM.1h2 Classify two-dimensional	**Geometry**	4.G.A.2 Classify two dimensional figures

shapes based on attributes (# of angles)	4 G Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right angles as a category, and identify right angles.
Progress Indicator: E.GM.1j recognizing and drawing points, lines, line segments, rays, angles, and perpendicular and parallel lines and identifying these in plane figures		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.GM.1j1 Recognize a point, line and line segment, rays in two-dimensional figures	**Geometry** 4 G Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	4.G.A.1 Draw points, lines, line segments, rays, angles, perpendicular, and parallel lines. Identify these in two-dimensional figures.
4.GM.1j2 Recognize perpendicular and parallel lines in two-dimensional figures	**Geometry** 4 G Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	4.G.A.1 Draw points, lines, line segments, rays, angles, perpendicular, and parallel lines. Identify these in two-dimensional figures.
4.GM.1j3 Recognize an angle in two-dimensional figures	**Geometry** 4 G Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	4.G.A.1 Draw points, lines, line segments, rays, angles, perpendicular, and parallel lines. Identify these in two-dimensional figures.
4.GM.1j4 Categorize angles as right, acute, or obtuse	**Geometry** 4 G Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	4.G.A.2 Classify two dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right angles as a category, and identify right triangles.
Progress Indicator: E.GM.1k recognizing and drawing lines of symmetry in a variety of figures		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**

4.GM.1k1 Recognize a line of symmetry in a figure	**Geometry** 4 G Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	4.G.A.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts, identify line-symmetric figures and draw lines of symmetry.
Explanations and clarifications:		

Progress Indicator: E.ME.1d describing and demonstrating: unit attributes, iterating, tiling, identical units, number line intervals, standardization, proportionality, additivity, and origin		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.ME.1d3 Use tiling and multiplication to determine area	**Measurement and Data** 3 MD Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	3.MD.C.7a Relate area to the operations of multiplication and addition. a) Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.
Progress Indicator: E.ME.1e justifying the need for measuring with standard units as compared to non-standard units		
No CCCs written for this PI		No CCRA linked
Progress Indicator: E.ME.1f selecting the appropriate unit for measuring a given attribute (length, area, mass, liquid volume, size of angle), recognizing that a unit must have the same attributes as the object (e.g., unit of length must measure an object that has length)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.ME.1f3 Select appropriate units for measurement: mass, length, angles		No CCRA linked
4.ME.1f4 Select appropriate units for the value of a set of coins or dollars		No CCRA linked
Progress Indicator: E.ME.1g exploring what happens to 2-dimensional measurements (perimeter or area) when the dimensions of the figure are changed		

Core Content Connectors: 4	CCRA Domain/Cluster	Idaho Content Standard
4.ME.1g2 Solve word problems using perimeter and area where changes occur to the dimensions of a rectilinear figure	**Measurement and Data** 4 MD Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.A.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. 4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*

Progress Indicator: E.ME.2e selecting and applying appropriate customary or metric units and tools to measure or estimate (liquid volume, mass, perimeter, area, time, and angles)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.ME.2e4 Select appropriate tool for measurement: mass, length, angles	**Measurement and Data** 4 MD Geometric measurement: understand concepts of angle and measure angles.	4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
4.ME.2e5 Construct a given angle	**Measurement and Data**	4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch

	4 MD Geometric measurement: understand concepts of angle and measure angles.	angles of specified measure.
4.ME.2e6 Measure right angles using a tool (e.g., angle ruler, protractor)	**Measurement and Data** 4 MD Geometric measurement: understand concepts of angle and measure angles.	4.MD.C.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
Progress Indicator: E.ME.2f recognizing relative sizes of units of measure and making simple conversions within systems when solving problems (e.g., 12 in. = 1 ft)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.ME.2f1 Complete a conversion table for length and mass within a single system	**Measurement and Data** 4 MD Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*
Progress Indicator: E.ME.2g recognizing situations that require precision (money, time, distances, fractions, decimals) and those where an estimation is appropriate		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.ME.2g1 Determine whether a situation calls for a precise measurement or an estimation (distance, volume, mass, time, money)	**Measurement and Data** 3 MD Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given

		in the same units, e.g. by using drawings (such as a beaker with a measurement scale) to represent the problem.
Progress Indicator: E.ME.2h using a variety of strategies (decomposing complex shapes, using counting strategies, arrays, formulas) to estimate or measure area and perimeter (including irregular shapes/objects)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.ME.2h1 Apply the formulas for area and perimeter to solve real world problems	**Measurement and Data** 3 MD Geometric measurement: understand concepts of area and real area to multiplication and to addition. 3 MD Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. 4 MD Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	3.MD.C.7 Relate area to the operations of multiplication and addition. a) Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. 3.MD.D.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. 4.MD.A.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*

Progress Indicator: E.NO.1j applying place value concepts to: read, write, and compare whole numbers up to 100,000; use expanded form; and round numbers to a given place		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.1j5 Use place value to round to any place (i.e., ones, tens, hundreds, thousands)	**Number and Operations in Base Ten** 4 NBT Generalize place value understanding for multi-digit whole numbers.	4.NBT.A.3 Use place value understanding to round multi-digit whole numbers to any place.
4.NO.1j6 Compare multi-digit numbers using representations and numbers	**Number and Operations in Base Ten** 4 NBT Generalize place value understanding for multi-digit whole numbers.	4.NBT.A.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
4.NO.1j7 Write or select the expanded form for a multi-digit number	**Number and Operations in Base Ten** 4 NBT Generalize place value understanding for multi-digit whole numbers.	4.NBT.A.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
Progress Indicator: E.NO.1k explaining the meaning of place value (that one digit in one place represents 10 times what it represents in the place to its right)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.1k1 Compare the value of a number when it is represented in different place values of two 3 digit numbers	**Number and Operations in Base Ten** 4 NBT Generalize place value understanding for multi-digit whole numbers.	4.NBT.A.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.

Progress Indicator: E.NO.1l identifying and locating fractions on the number line or as regions, or parts of a set or unit, and recognizing that whole numbers are a subset of rational numbers		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.1l6 Locate fractions on a number line	**Number and Operations - Fractions** 3 NF Develop understanding of fractions as numbers.	3.NF.A.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram. a) Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. b) Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
4.NO.1l7 Order fractions on a number line	**Number and Operations - Fractions** 3 NF Develop understanding of fractions as numbers.	3.NF.A.2 Understand a fraction as a number on the number line; represent fractions on a number line diagram. a) Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.

		b) Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
Progress Indicator: E.NO.1m composing and representing equivalent fractions in the form a/b		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.1m1 Determine equivalent fractions	**Number and Operations - Fractions** 3 NF Develop understanding of fractions as numbers. 4 NF Extend understanding of fraction equivalence and ordering.	3.NF.A.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a) Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. b) Recognize and generate simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3). Explain why the fractions are equivalent, e.g., by using a visual fraction model. c) Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram. d) Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two

		fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model. 4.NF.A.1 Explain why a fraction a/b is equivalent to a fraction (n x a)/(n x b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
Progress Indicator: E.NO.1n comparing and modeling fractions, including with different denominators		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.1n1 Select a model of a given fraction (halves, thirds, fourths, sixths, eighths)	**Number and Operations - Fractions** 3 NF Develop understanding of fractions as numbers.	3.NF.A.1 Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.
4.NO.1n2 Compare up to 2 given fractions that have different denominators	**Number and Operations - Fractions** 4 NF Extend understanding of fraction equivalence and ordering.	4.NF.A.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to benchmark fractions such as ½. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.

Progress Indicator: E.NO.1o rewriting fractions as equivalent decimals		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.1o1 Match a fraction with a denominator of 10 or 100 as a decimal (5/10 = .5)	**Number and Operations - Fractions** 4 NF Understand decimal notation for fractions, and compare decimal fractions.	4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
4.NO.1o2 Find the equivalent decimal for a given fraction	**Number and Operations - Fractions** 4 NF Understand decimal notation for fractions, and compare decimal fractions.	4.NF.C.5 Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.
Progress Indicator: E.NO.1p using number words to indicate decimal values (tenths, hundredths)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.1p1 Read, write or select decimals to the tenths place	**Number and Operations - Fractions** 4 NF Understand decimal notation for fractions, and compare decimal fractions.	4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
4.NO.1p2 Read, write or select decimals to the hundredths place	**Number and Operations - Fractions** 4 NF Understand decimal notation for fractions, and compare decimal fractions.	4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
Progress Indicator: E.NO.1q using and comparing decimals to the hundredths		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.1q1 Compare two decimals to the tenths place with a value of less than 1	**Number and Operations - Fractions**	4.NF.C.7 Compare two decimals to hundredths by reasoning about their size.

	4 NF Understand decimal notation for fractions, and compare decimal fractions.	Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, +, <, and justify the conclusions, e.g., by using a visual model.
4.NO.1q2 Compare two decimals to the hundredths place with a value of less than 1	**Number and Operations - Fractions** 4 NF Understand decimal notation for fractions, and compare decimal fractions.	4.NF.C.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, +, <, and justify the conclusions, e.g., by using a visual model.

Progress Indicator: E.NO.2c working flexibly with common addition and subtraction situations		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.2c2 Solve multi digit addition and subtraction problems up to 1000	**Number and Operations in Base Ten** 3 NBT Use place value understanding and properties of operations to perform multi-digit arithmetic.	3.NBT.A.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. 4.NBT.B.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.
Progress Indicator: E.NO.2d modeling multiplication (equal-sized groups, arrays, area models, equal-sized jumps on number lines, multiplicative comparisons) and division (successive subtraction, partitioning, sharing) of whole numbers		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.2d6 Find total number inside an array with neither number in the columns or rows larger than 10	**Operations and Algebraic Thinking** 3 OA Represent and solve problems involving multiplication and division.	3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in*

		which a total number of objects can be expressed as 5 × 7.
4.NO.2d7 Determine how many objects go into each group when given the total number of objects and the number of groups where the number in each group or number of groups is not greater than 10	**Operations and Algebraic Thinking** 4 OA Use the four operations with whole numbers to solve problems.	3.OA.A.4 Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = _ ÷ 3, 6 × 6 = ? 4.OA.A.2 Multiply or divide to solve word problem involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem distinguishing multiplicative comparison from additive comparison.
4.NO.2d8 Match an accurate addition and multiplication equation to a representation	**Operations and Algebraic Thinking** 3 OA Represent and solve problems involving multiplication and division.	3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*
Progress Indicator: E.NO.2e describing relationships between addition-multiplication; multiplication-division; addition-subtraction; why commutative property does not apply to subtraction or division		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.2e2 Solve or solve and check one or two step word problems requiring addition, subtraction or multiplication with answers up to 100	**Operations and Algebraic Thinking** 4 OA Use the four operations with whole numbers to solve problems.	4.OA.A.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess

		the reasonableness of answers using mental computation and estimation strategies including rounding.
Progress Indicator: E.NO.2f identifying factors and multiples of numbers		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.2f1 Identify multiples for a whole number (e.g., 2 = 2, 4, 6, 8, 10)	**Operations and Algebraic Thinking** 4 OA Gain familiarity with factors and multiples.	4.OA.B.4 Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.
4.NO.2f2 Solve multiplication problems up to two digits by one digit	**Number and Operations in Base Ten** 4 NBT Use place value understanding and properties of operations to perform multi-digit arithmetic.	3.NBT.A.3 Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. 4.NBT.B.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Progress Indicator: E.NO.2g recognizing fractions as one number/one quantity, rather than two numbers (numerator and denominator) and using number lines to represent magnitude of fractions		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**

4.NO.2g1 Using a representation, decompose a fraction into multiple copies of a unit fraction (e.g., ¾ = ¼ + ¼ + ¼)	**Numbers and Operations – Fractions** 3 NF Develop understanding of fractions as numbers. **Numbers and Operations – Fractions** 4 NF Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	3.NF.A.1 Understand a fraction 1/*b* as the quantity formed by 1 part when *a* whole is partitioned into *b* equal parts; understand a fraction *a*/*b* as the quantity formed by a parts of size 1/*b* 4.NF.B.3 Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b*. a) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b) Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.*
Progress Indicator: E.NO.2h adding, subtracting, and multiplying fractions, including mixed numbers		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.NO.2h1 Add and subtract fractions with like denominators of (2, 3, 4, or 8)	**Numbers and Operations – Fractions** 4 NF Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.B.3 Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b*. a) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b) Decompose a fraction into a sum of fractions with the same denominator in

		more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.*
4.NO.2h2 Add and subtract fractions with like denominators (2, 3, 4, or 8) using representations	**Numbers and Operations – Fractions** 4 NF Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	4.NF.B.3 Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b*. a) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b) Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8 ; 3/8 = 1/8 + 2/8 ; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8.*
4.NO.2h3 Solve word problems involving addition and subtraction of fractions with like denominators (2, 3, 4, or 8)	**Numbers and Operations – Fractions** 3 NF Develop understanding of fractions as numbers. 4 NF Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	3.NF.A.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. d) Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g.,

		by using a visual fraction model. 4.NF.B.3 Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b*. d) Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

Progress Indicator: E.NO.3c evaluating the reasonableness of answers using mental computation, arithmetic patterns, and estimation strategies, including rounding to the nearest 10 or 100			
Core Content Connectors: 3-4	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[2]**	
3-4.NO.3c1 Solve real world problems (e.g., determine how many nickels needed to be the equivalent of a quarter) by using mental math (such as skip counting by 2s within 20, 5s within 50, 10s within 100)	4.OA Use the four operations with whole numbers to solve problems	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

3-4.NO.3c2 Evaluate the reasonableness of answers after making computations	3.OA Solve problems involving the 4 operations and identify and explain patterns in arithmetic	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
3-4.NO.3c3 Determine the reasonableness of answers using estimation	3.OA Solve problems involving the 4 operations and identify and explain patterns in arithmetic	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		reasoning.	
3-4.NO.3c4 Determine the reasonableness of answers using arithmetic patterns	3.OA Solve problems involving the four operations and identify and explain patterns in arithmetic	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
Progress Indicator: E.NO.3d constructing arguments and explaining reasonableness of outcomes using a variety of concrete supports (e.g., models, diagrams, tables)			
Core Content Connectors: 3-4	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[3]**	
3-4.NO.3d1 Use modeling or diagrams to construct or select a viable argument for a given problem (e.g., "what is the difference between equilateral, scalene, and isosceles triangles?" and use models of triangles to illustrate correct answer)	3G Reason with shapes and their attributes	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
3-4.NO.3d2 Use models to find equivalencies or solutions	4.NF Extend understanding of fraction equivalence and ordering	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
3-4.NO.3d3 Justify and label solutions as a result of making a comparison (e.g., compare 15 and 25 and label 25 as greater: 15<25)	4NBT Generalize place value understanding for multi-digit whole numbers.	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
3-4.NO.3d4 Explain why a tool or strategy would be used to solve a given problem	3.OA Solve problems involving the four operations, and identify and explain patterns in arithmetic	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
Explanations and clarifications:			

Progress Indicator: E.PRF.1d describing and modeling how addition, subtraction, multiplication, or division changes a quantity, including with fractions		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**

4.PRF.1d2 Use objects to model multiplication and division situations involving up to 10 groups with up to 5 objects in each group and interpret the results	**Operations and Algebraic Thinking** 3 OA Represent and solve problems involving multiplication and division.	3.OA.A.1 Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7.*
Progress Indicator: E.PRF.1e using representations (tables, graphs, equations) to show how values of one quantity are related to values of another and to draw conclusions		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.PRF.1e3 Solve multiplicative comparisons with an unknown using up to 2-digit numbers with information presented in a graph or word problem (e.g., an orange hat cost $3. A purple hat cost 2 times as much. How much does the purple hat cost? [3 x 2 = p])	**Operations and Algebraic Thinking** 4 OA Use the four operations with whole numbers to solve problems.	4.OA.A.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
Progress Indicator: E.PRF.1f representing and explaining equivalence concretely, graphically, and symbolically (equations, rules)		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.PRF.1f3 Apply the distributive property to solve problems with models	**Measurement and Data** 3 MD Geometric measurement: understand concepts of area and relate to multiplication and to addition.	3.MD.C.7c Relate area to the operations of multiplication and addition. c) Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.
4.PRF.1f4 Solve a 2-digit by 1-digit multiplication problem using 2 different strategies	**Number and Operations in Base Ten** 4 NBT Use place value understanding and	4.NBT.B.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using

	properties of operations to perform multi-digit arithmetic.	strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Progress Indicator: E.PRF.2d representing and analyzing patterns and rules (e.g., doubling, adding 3) using words, tables, graphs, and models		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.PRF.2d3 Generate a pattern when given a rule and word problem (I run 3 miles every day, how many miles have I run in 3 days)	**Operations and Algebraic Thinking** 4 OA Generate and analyze patterns.	4.OA.C.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*
Progress Indicator: E.PRF.2e extending, translating, and analyzing numeric patterns and their rules using addition, subtraction, multiplication, and division		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.PRF.2e1 Extend a numerical pattern when the rule is provided	**Operations and Algebraic Thinking** 4 OA Generate and analyze patterns.	4.OA.C.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the*

		numbers will continue to alternate in this way.

Progress Indicator: E.SE.1g using symbols (=, >, <) to compare whole numbers, fractions, or decimals; write equations; and express inverse or related operations		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.SE.1g2 Use =, <, or > to compare 2 fractions (fractions with a denominator of 10 or less)	**Number and Operations – Fractions** 4 NF Extend understanding of fraction equivalence and ordering.	4.NF.A.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.
4.SE.1g3 Use =, <, or > to compare 2 decimals (decimals in multiples of .10)	**Number and Operations – Fractions** 4 NF Understanding decimal notation for fractions, and compare decimal fractions.	4.NF.C.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.
Progress Indicator: E.SE.1h expressing whole numbers as fractions, and fractions as equivalent decimals; recognizing that a fraction is one number, not two		
Core Content Connectors: 4	**CCRA Domain/Cluster**	**Idaho Content Standard**
4.SE.1h1 Express whole numbers as fractions	**Number and Operations – Fractions** 3 NF Develop understanding of fractions as numbers.	3.NF.A.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size

		c) Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.*
4.SE.1h2 Identify the equivalent decimal for a fraction	**Number and Operations – Fractions** 4 NF Develop understanding of fractions as numbers.	4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*
Explanations and clarifications:		

Mathematics | Grade 5 | Overview

Operations and Algebraic Thinking (OA)
• Write and interpret numerical expressions.
• Analyze patterns and relationships.
Number and operations in Base Ten (NBT)
• Understand the place value system.
• Perform operations with multi-digit whole numbers and with decimals to hundredths.
Number and operations - Fractions (NF)
• Use equivalent fractions as a strategy to add and subtract fractions. • Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
Measurement and Data (MD)
• Convert like measurement units within a given measurement system.
• Represent and interpret data.
• Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.
Geometry (G)
• Graph points on the coordinate plane to solve real-world and mathematical problems. • Classify two-dimensional figures into categories based on their properties.

Progress Indicator: M.DPS.1c using representations (e.g., dot plots, scatter plots, line plots) to display data from investigations to describe the shapes of the data		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.DPS.1c1 Collect and graph data: bar graph, line plots, picture graph (e.g., average height among 3 classrooms, # of boys and girls)	**Measurement and Data** 3 MD Represent and interpret data. 5 MD Represent and interpret data.	3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets.*

		5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit (½, ¼, ⅛). Use operations on fractions for this grade to solve problems involving information presented in line plots. *For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.*
Progress Indicator: M.DPS.1d identifying the range, three common measures of central tendency (mean, median, and mode) and interpreting the mean as a fair share and a center of balance		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.DPS.1d1 Select an appropriate statement about the range of the data for a given graph (bar graph, line plot) (i.e., range of data) up to 10 points	**Statistics and Probability** 6 SP Develop understanding of statistical variability.	6.SP.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
Progress Indicator: M.DPS.1e making claims about populations from data distributions, supporting interpretations on the basis of mean, median, or mode, and the shape of the distribution		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.DPS.1e1 Use measures of central tendency to interpret data including overall patterns in the data	**Statistics and Probability** 6 SP Develop understanding of statistical variability.	6.SP.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

Progress Indicator: E.GM.1j recognizing and drawing points, lines, line segments, rays, angles, and perpendicular and parallel lines and identifying these in plane figures

Core Content Connectors: 5	CCRA Domain/Cluster	Idaho Content Standard
5.GM.1j1 Recognize parallel and perpendicular lines within the context of two-dimensional figures	**Geometry** 4 G Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	4.G.A.1 Draw points, lines, line segments, rays, angles, perpendicular, and parallel lines. Identify these in two-dimensional figures.
Progress Indicator: M.GM.1a describing and classifying plane figures based on their properties		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.GM.1a1 Recognize properties of simple plane figures	**Geometry** 5 G Classify two-dimensional figures into categories based on their properties.	5.G.B.3 Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category . *For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.*
Progress Indicator: M.GM.1b recognizing and using properties belonging to categories and subcategories of plane figures (e.g., all rectangles have four right angles, so all squares are rectangles and have four right angles)		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.GM.1b1 Distinguish plane figures by their properties	**Geometry** 5 G Classify two-dimensional figures into categories based on their properties.	5.G.B.4 Classify two dimensional figures in a hierarchy based on properties.
Progress Indicator: M.GM.1c demonstrating the use of a coordinate system by locating/graphing a given point or polygon using ordered pairs		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.GM.1c1 Locate the x and y axis on a graph	**Geometry** 5 G Graph points on the coordinate plane to solve real-world and mathematical problems.	5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the – on each line and a given point in

		the plane located by using an ordered pair of numbers called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
5.GM.1c2 Locate points on a graph	**Geometry** 5 G Graph points on the coordinate plane to solve real-world and mathematical problems.	5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the – on each line and a given point in the plane located by using an ordered pair of numbers called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
5.GM.1c3 Use order pairs to graph given points	**Geometry** 5 G Graph points on the coordinate plane to solve real-world and mathematical problems.	5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the – on each line and a given point in the plane located by using an ordered pair of numbers called its coordinates.

		Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
Explanations and Clarifications: CCRA not addressed		

Progress Indicator: M.ME.1a identifying and describing measurable attributes (including area, surface area, volume, fractional units, absolute value with temperature), and selecting appropriate customary or metric units of measure when solving problems		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.ME.1a1 Identify the appropriate units of measurement for different purposes in a real life context (e.g., measure a wall using feet, not inches)	**Measurement and Data** 4 MD Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	4.MD.A.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*
Progress Indicator: M.ME.1b recognizing relationships among units and using proportional reasoning to convert measurements from one unit to another within the same system		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.ME.1b1 Convert standard	**Measurement and Data**	5.MD.A.1 Convert among different-sized

measurements of time	5 MD Convert like measurement units within a given measurement system.	standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
5.ME.1b2 Convert standard measurements of length	**Measurement and Data** 5 MD Convert like measurement units within a given measurement system.	5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
5.ME.1b3 Convert standard measurements of mass	**Measurement and Data** 5 MD Convert like measurement units within a given measurement system.	5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
Progress Indicator: M.ME.1c recognizing how the formulas for area and volume for a variety of shapes and solids are related		
No CCCs written for this PI		

Progress Indicator: M.ME.2a selecting and applying appropriate standard units, tools, and level of precision in real-world measurment problems (e.g., area, surface area, volume, rate)		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.ME.2a1 Solve problems involving conversions of standard measurement units when finding area, volume, time lapse, or mass	**Measurement and Data** 5 MD Convert like measurement units within a given measurement system.	5.MD.A.1 Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems.
Progress Indicator: M.ME.2b using a variety of strategies (decomposing complex shapes, using formulas and models) to measure area (triangles, quadrilaterals, polygons) and volume (rectangular prisms)		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**

5.ME.2b1 Use filling and multiplication to determine volume	**Measurement and Data** 5 MD Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
5.ME.2b2 Apply formula to solve one step problems involving volume	**Measurement and Data** 5 MD Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. b) Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.

Progress Indicator: M.NO.1a Explaining the meaning of place value (that a digit in one place represents 10 times what it represents to the place to its right).		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.NO.1a1 Compare the value of a number when it is represented in different place values of two 3 digit numbers	**Number and Operations in Base Ten** 5 NBT Understand the place value system.	5.NBT.A.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
Progress Indicator: M.NO.1b extending place value understanding to reading (e.g., naming the values with number words, rather than "point four"), writing, comparing, and rounding decimals		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**

5.NO.1b1 Read, write, or select a decimal to the hundredths place	**Number and Operations in Base Ten** 5 NBT Understand the place value system.	5.NBT.A.3a Read, write, and compare decimals to thousandths. a) Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000).
5.NO.1b2 Read, write or select a decimal to the thousandths place	**Number and Operations in Base Ten** 5 NBT Understand the place value system.	5.NBT.A.3a Read, write, and compare decimals to thousandths. a) Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 x 100 + 4 x 10 + 7 x 1 + 3 x (1/10) + 9 x (1/100) + 2 x (1/1000).
5.NO.1b3 Compare two decimals to the thousandths place with a value of less than 1	**Number and Operations in Base Ten** 5 NBT Understand the place value system.	5.NBT.A.3b Read, write, and compare decimals to thousandths. b) Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
5.NO.1b4 Round decimals to the next whole number	**Number and Operations in Base Ten** 5 NBT Understand the place value system.	5.NBT.A.4 Use place value understanding to round decimals to any place.
5.NO.1b5 Round decimals to the tenths place	**Number and Operations in Base Ten** 5 NBT Understand the place value system.	5.NBT.A.4 Use place value understanding to round decimals to any place.
5.NO.1b6 Round decimals to the hundredths place	**Number and Operations in Base Ten** 5 NBT Understand the place value system.	5.NBT.A.4 Use place value understanding to round decimals to any place.

Progress Indicator: M.NO.1c using a variety of fractional and decimal representations and locating them on a number line		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.NO.1c1 Rewrite a fraction as a decimal	**Number and Operations – Fractions** 4 NF Understand decimal notation for fractions, and compare decimal fractions.	4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.
5.NO.1c2 Rewrite a decimal as a fraction	**Number and Operations – Fractions** 4 NF Understand decimal notation for fractions, and compare decimal fractions.	4.NF.C.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

Progress Indicator: M.NO.2a working flexibility with common addition, subtraction, multiplication, and division situations		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.NO.2a1 Solve problems or word problems using up to three digit numbers and addition or subtraction or multiplication	**Operations and Algebraic Thinking** 4 OA Use the four operations with whole numbers to solve problems. **Number and Operations in Base Ten** 5 NBT Perform operations with multi-digit whole numbers and with decimals to hundredths.	4.OA.A.3 Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.
5.NO.2a2 Separate a group of objects into equal sets when given the number of	**Number and Operations in Base Ten**	4.NBT.B.6 Find whole-number quotients and remainders with up to four-digit

sets to find the total in each set with the total number less than 50	4 NBT Use place value understanding and properties of operations to perform multi-digit arithmetic.	dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
5.NO.2a3 Find whole number quotients up to two dividends and two divisors	**Number and Operations in Base Ten** 5 NBT Perform operations with multi-digit whole numbers and with decimals to hundredths.	5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
5.NO.2a4 Find whole number quotients up to four dividends and two divisors	**Number and Operations in Base Ten** 5 NBT Perform operations with multi-digit whole numbers and with decimals to hundredths.	5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
5.NO.2a5 Solve word problems that require multiplication or division	**Number and Operations in Base Ten** 5 NBT Perform operations with multi-digit whole numbers and with decimals to hundredths.	5.NBT.B.6 Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the

		calculation by using equations, rectangular arrays, and/or area models.
Progress Indicator: M.NO.2b recognizing fractions as one number/one quantity, rather than two numbers (numerator and denominator) and using number lines to represent magnitude of fractions and equivalent /non-equivalent fractions		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.NO.2b1 Add and subtract fractions with unlike denominators by replacing fractions with equivalent fractions (identical denominators)	**Numbers and Operations – Fractions** 5 NF Use equivalent fractions as a strategy to add and subtract fractions.	5.NF.A.1 Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions in such a way as to produce equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd).*
5.NO.2b2 Add or subtract fractions with unlike denominators	**Numbers and Operations – Fractions** 5 NF Use equivalent fractions as a strategy to add and subtract fractions.	5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd).*
5.NO.2b3 Multiply a fraction by a whole or mixed number.	**Numbers and Operations – Fractions** 4 NF build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers. **Numbers and Operations – Fractions** 5 NF Apply and extend previous	4.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. 5.NF.B.4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a) Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a

	understandings of multiplication and division to multiply and divide fractions.	sequence of operations *a* × *q* ÷ *b*. *For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) × (c/d) = ac/bd.)* b) Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. 5.NF.B.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. a) Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. *For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3.* b) Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷*

		(1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4. c) Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3 cup servings are in 2 cups of raisins?*
5.NO.2b4 Divide unit fractions by whole numbers and whole numbers by unit fractions.	**Numbers and Operations – Fractions** 5 NF Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.B.3 Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?*

		5.NF.B.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. a) Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = 1/12 because (1/12) × 4 = 1/3. b) Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3 cup servings are in 2 cups

		of raisins?
Progress Indicator: M.NO.2c using operations and standard algorithms with whole numbers, fractions (unlike denominators), and decimals (to hundredths)		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.NO.2c1 Solve 1 step problems using decimals	**Number and Operations in Base Ten** 5 NBT Perform operations with multi-digit whole numbers and with decimals to hundredths.	5.NBT.B.7 Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
5.NO.2c2 Solve word problems involving the addition, subtraction, multiplication or division of fractions	**Numbers and Operations – Fractions** 5 NF Use equivalent fractions as a strategy to add and subtract fractions.	5.NF.A.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2.*
Explanations and clarifications: Not included: M.NO.2d contrasting situations as additive or multiplicative		

Progress Indicator: M.NO.3a using informal and rule-based arguments, evidence, and examples (e.g., estimation, rounding, arrays, visual models, diagrams) to justify mathematical solutions			
Core Content Connectors: 5-6	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[4]**	
5-6.NO.3a1 Justify the use of a strategy, rule, or identified	6.EE Reason about and solve one-variable equations and	Make sense of problems & persevere in solving them.	Use appropriate tools strategically. Attend to precision. Look for and

characteristic to solve a given problem (e.g., why use a formula to find the area of rectangles)	inequalities	Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	make use of structure. Look for and express regularity in repeated reasoning.
Progress Indicator: M.NO.3b critiquing the mathematical arguments provided by others			
Core Content Connectors: 5-6	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[5]**	
5-6.NO.3b1 Use up to two rules to extend a pattern and verify provided responses or select correct answers (e.g., Rules: +3, +2 and table lists pairs, 4:5, 7:7, and 10:9)	5.OA Analyze patterns and relationships	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		use of structure. Look for and express regularity in repeated reasoning.	
5-6.NO.3b2 Explain the selection of rule(s) to use to verify a response **Explain the rules used to verify a solution**	5.OA Analyze patterns and relationships	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
5-6.NO.3b3 Verify provided solutions within word problems (e.g., Sally wanted to give her brother 1/2 of her books. Her brother only took 1/4 of the 1/2 she offered. Sally gave him 1/8 of all of her books. Is this true?)	6.NS Apply and extend previous understandings of numbers to the system of rational numbers	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
5-6.NO.3b4 Critique a set of solutions for a given problem and determine any viable answers	5.NBT Perform operations with multi-digit whole numbers and with decimals to hundredths	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
5-6.NO.3b5 Evaluate the accuracy of statements made based upon provided data	6.SP Develop understanding of statistical variability	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
Explanations and clarifications:			

Progress Indicator: M.PRF.1a describing how multiplication or division changes a quantity, including with fractions or decimals		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.PRF.1a1 Determine whether the product will increase or decrease based on the multiplier	**Number and Operations – Fractions** 5 NF Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.B.5 Interpret multiplication as scaling (resizing), by: a) Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b) Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.

<table>
<tr><th colspan="3">Progress Indicator: M.PRF.1b distinguishing linear from nonlinear relationships as represented in graphical and tabular representations</th></tr>
<tr><th>Core Content Connectors: 5</th><th>CCRA Domain/Cluster</th><th>Idaho Content Standard</th></tr>
<tr><td>5.PRF.1b1 Given 2 patterns involving the same context (e.g., collecting marbles) determine the 1st 5 terms and compare the values
<table>
<tr><th>Day</th><th>Joe</th><th>Kim</th></tr>
<tr><td>1</td><td>2</td><td>4</td></tr>
<tr><td>2</td><td>4</td><td>8</td></tr>
<tr><td>3</td><td>6</td><td>12</td></tr>
<tr><td>4</td><td>8</td><td>16</td></tr>
</table></td><td>Operations and Algebraic Thinking

5 OA Analyze patterns and relationships.</td><td>5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</td></tr>
<tr><td>5.PRF.1b2 When given a line graph representing two arithmetic patterns, identify the relationship between the two</td><td>Operations and Algebraic Thinking

5 OA Analyze patterns and relationships.</td><td>5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</td></tr>
</table>

Progress Indicator: M.PRF.2a representing, analyzing, extending, and generalizing a variety of patterns using tables, graphs, words, and symbolic rules		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.PRF.2a1 Generate a pattern that follows the provided rule	**Operations and Algebraic Thinking** 4 OA Generate and analyze patterns.	4.OA.C.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. *For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.*
Progress Indicator: M.PRF.2b relating and comparing different forms of representation and identifying functions as linear or nonlinear		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.PRF.2b1 Generate or select a comparison between two graphs from a similar situation	**Operations and Algebraic Thinking** 5 OA Analyze patterns and relationships.	5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*

Progress Indicator: M.SE.1a using symbols (=, >, <) to compare whole numbers, fractions, or decimals; write equations; and express inverse or related operations		
Core Content Connectors: 5	**CCRA Domain/Cluster**	**Idaho Content Standard**
5.SE.1a1 Given a real world problem, write an expression using 1 set of parentheses	**Operations and Algebraic Thinking** 5 OA Write and interpret numerical expressions.	5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
Explanations and clarifications:		

Mathematics | Grade 6 | Overview

Ratios and Proportional Relationships (RP)
• Understand ratio concepts and use ratio reasoning to solve problems.
The Number System (NS)
• Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
• Compute fluently with multi-digit numbers and find common factors and multiples.
• Apply and extend previous understandings of numbers to the system of rational numbers.
Expressions and Equations (EE)
• Apply and extend previous understandings of arithmetic to algebraic expressions.
• Reason about and solve one-variable equations and inequalities.
• Represent and analyze quantitative relationships between dependent and independent variables.
Geometry (G)
• Solve real-world and mathematical problems involving area, surface area, and volume.
Statistics and Probability (SP)
• Develop understanding of statistical variability.
• Summarize and describe distributions.

Progress Indicator: M.DPS.1a formulating questions about groups larger than classroom groups and comparing different populations or samples		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.DPS.1a2 Identify statistical questions and make a plan for data collection	**Statistics and Probability** 6 SP Develop understanding of statistical variability.	6.SP.A.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. *For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.*
Progress Indicator: M.DPS.1c using representations (e.g., dot plots, scatter plots, line plots) to display data from investigations		

to describe the shapes of the data		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.DPS.1c2 Collect and graph data: bar graph, line plots, dot plots, histograms	**Statistics and Probability** 6 SP Summarize and describe distributions.	6.SP.B.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
Progress Indicator: M.DPS.1d identifying the range, three common measures of central tendency (mean, median, and mode) and interpreting the mean as a fair share and a center of balance		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.DPS.1d2 Solve for mean of a given data set	**Statistics and Probability** 6 SP Develop understanding of statistical variability.	6.SP.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
6.DPS.1d3 Select statement that matches mean, mode, and spread of data for 1 measure of central tendency for a given data set	**Statistics and Probability** 6 SP Summarize and describe distributions.	6.SP.B.5 Summarize numerical data sets in relation to their context such as by: c) Giving quantitative measures of center (median and/or mean) and variability as well as describing any overall pattern and striking deviations from the overall pattern with reference to the context in which the data were gathered.
6.DPS.1d4 Find the range of a given data set	**Statistics and Probability** 6 SP Develop understanding of statistical variability.	6.SP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
6.DPS.1d5 Explain or identify what the mean represents in a set of data	**Statistics and Probability** 6 SP Develop understanding of statistical variability.	6.SP.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

6.DPS.1d6 Explain or identify what the mode represents in a set of data	**Statistics and Probability** 6 SP Develop understanding of statistical variability.	6.SP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
6.DPS.1d7 Explain or identify what the median represents in a set of data	**Statistics and Probability** 6 SP Summarize and describe distributions.	6.SP.B.5 Summarize numerical data sets in relation to their context such as by: c) Giving quantitative measures of center (median and/or mean) and variability as well as describing any overall pattern and striking deviations from the overall pattern with reference to the context in which the data were gathered.
Progress Indicator: M.DPS.1e making claims about populations from data distributions, supporting interpretations on the basis of mean, median, or mode, and the shape of the distribution		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.DPS.1e2 Use measures of central tendency to interpret data including overall patterns in the data	**Statistics and Probability** 6 SP Summarize and describe distributions.	6.SP.B.5 Summarize numerical data sets in relation to their context such as by: c) Giving quantitative measures of center (median and/or mean) and variability as well as describing any overall pattern and striking deviations from the overall pattern with reference to the context in which the data were gathered.

Progress Indicator: M.GM.1c demonstrating the use of a coordinate system by locating/graphing a given point or polygon using ordered pairs		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.GM.1c4 Locate points on a graph	**Geometry**	5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate

	5 G Graph points on the coordinate plane to solve real-world and mathematical problems.	system, with the intersection of the lines (the origin) arranged to coincide with the – on each line and a given point in the plane located by using an ordered pair of numbers called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
6.GM.1c5 Use order pairs to graph given points	**Geometry** 5 G Graph points on the coordinate plane to solve real-world and mathematical problems.	5.G.A.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the – on each line and a given point in the plane located by using an ordered pair of numbers called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).
6.GM.1c6 Find coordinate values of points in the context of a situation	**Geometry** 5 G Graph points on the coordinate plane to solve real-world and mathematical	5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in

	problems.	the context of the situation.
6.GM.1c7 Use coordinate points to draw polygons	**Geometry** 6 G Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.A.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
6.GM.1c8 Use coordinate points to find the side lengths of polygons that are horizontal or vertical	**Geometry** 6 G Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.A.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
Progress Indicator: M.GM.1d solving area, surface area, and volume problems by composing and decomposing figures		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.GM.1d1 Find area of quadrilaterals	**Geometry** 6 G Solve real-world and mathematical problems involving area, surface area, and volumes.	6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
6.GM.1d2 Find area of triangles	**Geometry** 6 G Solve real-world and mathematical problems involving area, surface area, and volumes.	6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems

Explanations and clarifications:

Progress Indicator: M.ME.1a identifying and describing measurable attributes (including area, surface area, volume, fractional units, absolute value with temperature), and selecting appropriate customary or metric units of measure when solving problems		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.ME.1a2 Identify the appropriate formula (i.e., perimeter, area, volume) to use when measuring for different purposes in a real life context	**Geometry** 6 G Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems 6.G.A.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
Progress Indicator: M.ME.1b recognizing relationships among units and using proportional reasoning to convert measurements from one unit to another within the same system		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.ME.1b4 Complete a conversion table for length, mass, time, volume	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio	6.RP.A.3d Use ratios and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of

	reasoning to solve problems.	equivalent ratios, tape diagrams, double number line diagrams, or equations. d) Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
6.ME.1b5 Analyze table to answer questions	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.3d Use ratios and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. d) Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
Progress Indicator: M.ME.1c recognizing how the formulas for area and volume for a variety of shapes and solids are related		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.ME.1c1 Find the area of a 2-dimensional figure and the volume of a 3-dimensional figure	**Geometry** 6 G Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.A.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\ w\ h$ and $V = b\ h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

Progress Indicator: M.ME.2a selecting and applying appropriate standard units, tools, and level of precision in real-world measurment problems (e.g., area, surface area, volume, rate)		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.ME.2a2 Solve one step real world measurement problems involving unit rates with ratios of whole numbers when given the unit rate (3 inches of snow falls per hour, how much in 6 hours)	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. b) Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*
6.ME.2a3 Apply the formula to find the area of triangles	**Geometry** 6 G Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
Progress Indicator: M.ME.2b using a variety of strategies (decomposing complex shapes, using formulas and models) to measure area (triangles, quadrilaterals, polygons) and volume (rectangular prisms)		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.ME.2b3 Decompose complex shapes (polygon, trapezoid, pentagon) into simple shapes (rectangles, squares, triangles) to measure area	**Geometry** 6 G Solve real-world and mathematical problems involving area, surface area, and volume.	6.G.A.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and

		mathematical problems.
6.ME.2b4 Decompose complex 3-D shapes into simple 3-D shapes to measure volume	**Measurement and Data** 5 MD Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. a) Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.

Progress Indicator: M.NO.1d representing integers (positive/negative numbers) and locating them on a number line		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.NO.1d1 Identify numbers as positive or negative	**Expressions and Equations** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.C.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a) Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is

		its own opposite. b) Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c) Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
6.NO.1d2 Locate positive and negative numbers on a number line	**Expressions and Equations** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.C.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a) Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite. b) Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by

		reflections across one or both axes. c) Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
6.NO.1d3 Plot positive and negative numbers on a number line	**Expressions and Equations** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.C.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a) Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite. b) Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c) Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

6.NO.1d4 Select the appopriate meaning of a negative number in a real world situation	**Expressions and Equations** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.C.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
6.NO.1d5 Find given points between -10 and 10 on both axis of a coordinate plane	**Expressions and Equations** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.C.6c Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. c) Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
6.NO.1d6 Label points between -10 and 10 on both axis of a coordinate plane	**Expressions and Equations** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.C.6c Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. c) Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position

		pairs of integers and other rational numbers on a coordinate plane.
Progress Indicator: M.NO.1e describing, representing, and comparing absolute value relationships		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.NO.1e1 Determine the meaning of absolute value	**Expressions and Equations** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.C.7c Understand ordering and absolute value of rational numbers. a) Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. *For example, for an account balance of -30 dollars write |-30| = 30 to describe the size of the debt in dollars.*
Progress Indicator: M.NO.1f recognizing equivalence of representations using fractions, decimals, and percents and using them solve ratio problems		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.NO.1f1 Find a percent of a quantity as rate per 100	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.3c Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. c) Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
6.NO.1f2 Write or select a ratio to match a given statement and representation	**Ratios and Proportional Relationships**	6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio

	6 RP Understand ratio concepts and use ratio reasoning to solve problems.	relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."
6.NO.1f3 Select or make a statement to interpret a given ratio	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."
6.NO.1f4 Find a missing value (representations, whole numbers, common fractions, decimals to hundredths place, percent) for a given ratio	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.3a Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a) Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
6.NO.1f5 Solve unit rate problems involving unit pricing	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.3b Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

		a) Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?
Progress Indicator: M.NO.1i using exponents and scientific notation to express very large or very small quantities		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.NO.1i1 Identify what an exponent represents (e.g., $8^3 = 8 \times 8 \times 8$)	**Number and Operations in Base Ten** 5 NBT Understand the place value system. **Expressions and Equations** 6 EE Apply and extend previous understandings of arithmetic to algebraic expressions.	5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. 6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents.
6.NO.1i2 Solve numerical expressions involving whole number exponents	**Expressions and Equations** 6 EE Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents.

Progress Indicator: M.NO.2a working flexibility with common addition, subtraction, multiplication, and division situations		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.NO.2a6 Solve problems or word problems using up to three digit numbers and any of the four operations	**Expressions and Equations** 6 EE Reason about and solve one-variable	6.EE.B.7 Solve real world and mathematical problems by writing and solving equations of the form x = p = q and

	equations and inequalities.	px = q for cases in which p, q, and x are all non negative rational numbers.
Progress Indicator: M.NO.2c using operations and standard algorithms with whole numbers, fractions (unlike denominators), and decimals (to hundredths)		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.NO.2c3 Solve one step, addition, subtraction, multiplication, or division problems with fractions or decimals	**The Number System** 6 NS Apply and extend previous understandings of multiplications and division to divide fractions by fractions. 6 NS Compute fluently with multi-digit numbers and find common factors and multiples	6.NS.A.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc). How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4 cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi.? Compute fluently with multi-digit numbers and find common factors and multiples.* 6.NS.B.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.
6.NO.2c4 Solve word problems involving the addition, subtraction, multiplication or division of fractions	**Numbers and Operations – Fractions** 5 NF Apply and extend previous understandings of multiplication and	5.NF.B.7c Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

	division to multiply and divide fractions. **The Number System** 6 NS Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	c) Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, how much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 1/3 cup servings are in 2 cups of raisins?* 6.NS.1 Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc). How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4 cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi? Compute fluently with multi-digit numbers and find common factors and multiples.*
6.NO.2c5 Divide multi-digit whole numbers	**The Number System** 6 NS Compute fluently with multi-digit	6.NS.B.2 Fluently divide multi-digit numbers using standard algorithm.

	numbers and find common factors and multiples	
Progress Indicator: M.NO.2e ordering/comparing integers and representing them on the number line		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.NO.2e1 Determine the difference between two integers using a number line	**The Number System** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.C.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a) Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.
6.NO.2e2 Compare two numbers on a number line (e.g., -2 > -9)	**The Number System** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers.	6.NS.C.7 Understand ordering and absolute value of rational numbers. a) Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. *For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.*

Progress Indicator: M.NO.3a using informal and rule-based arguments, evidence, and examples (e.g., estimation, rounding, arrays, visual models, diagrams) to justify mathematical solutions		
Core Content Connectors:	**Potential cluster for**	**Common Core: *Standards for Mathematical Practice*[4]**

5-6	demonstration		
5-6.NO.3a1 Justify the use of a strategy, rule, or identified characteristic to solve a given problem (e.g., why use a formula to find the area of rectangles)	6.EE Reason about and solve one-variable equations and inequalities	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
Progress Indicator: M.NO.3b critiquing the mathematical arguments provided by others			
Core Content Connectors: 5-6	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[5]**	
5-6.NO.3b1 Use up to two rules to extend a pattern and verify provided responses or select correct answers (e.g., Rules: +3, +2 and table lists pairs, 4:5, 7:7, and 10:9)	5.OA Analyze patterns and relationships	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
5-6.NO.3b2 Explain the selection of rule(s) to use to verify a response **Explain the rules used to verify a solution**	5.OA Analyze patterns and relationships	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
5-6.NO.3b3 Verify provided solutions within word problems (e.g., Sally wanted to give her brother 1/2 of her books. Her brother only took 1/4 of the 1/2 she offered. Sally gave him 1/8 of all of her books. Is this true?)	6.NS Apply and extend previous understandings of numbers to the system of rational numbers	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
5-6.NO.3b4 Critique a set of solutions for a given problem and determine any viable answers	5.NBT Perform operations with multi-digit whole numbers and with decimals to hundredths	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
5-6.NO.3b5 Evaluate the accuracy of statements made based upon provided data	6.SP Develop understanding of statistical variability	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
Explanations and clarifications:			

Progress Indicator: M.PRF.1a describing how multiplication or division changes a quantity, including with fractions or decimals		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.PRF.1a2 Determine whether or not the quotient will increase or decrease based on the divisor	**Number and Operations – Fractions** 5 NF Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.B.5 Interpret multiplication as scaling (resizing), by: a) Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b) Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b =$

		$(n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.
Progress Indicator: M.PRF.1c comparing two rates and evaluating them for a given situation (e.g., best value)		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.PRF.1c1 Describe the ratio relationship between two quantities for a given situation	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."*
6.PRF.1c2 Represent proportional relationships on a line graph	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.2 Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*
Progress Indicator: M.PRF.1d using symbolic equations to summarize how the quantity of something changes		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.PRF.1d1 Solve real world single step linear equations	**Expressions and Equations** 6 EE Reason about and solve one-variable equations and inequalities.	6.EE.B.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.

Progress Indicator: M.PRF.2a representing, analyzing, extending, and generalizing a variety of patterns using tables, graphs, words, and symbolic rules

Core Content Connectors: 6	CCRA Domain/Cluster	Idaho Content Standard
6.PRF.2a2 Use variables to represent numbers and write expressions when solving real-world problems	**Expressions and Equations** 6 EE Reason about and solve one-variable equations and inequalities.	6.EE.B.6 Use variables to represent numbers and write expressions when solving real-world or mathematical problems; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
6.PRF.2a3 Use variables to represent two quantities in a real-world problem that change in relationship to one another	**Expressions and Equations** 6 EE Represent and analyze quantitative relationships between dependent and independent variables.	6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. *Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*
6.PRF.2a4 Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation	**Expressions and Equations** 6 EE Represent and analyze quantitative relationships between dependent and independent variables.	6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. *Analyze the relationship between the dependent and independent variables using graphs and*

		tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.
Progress Indicator: M.PRF.2b relating and comparing different forms of representation and identifying functions as linear or nonlinear		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.PRF.2b2 Using provided table with numerical patterns, form ordered pairs	**Operations and Algebraic Thinking** 5 OA Analyze patterns and relationships.	5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. *For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.*
Progress Indicator: M.PRF.2b relating and comparing different forms of representation and identifying functions as linear or nonlinear		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.PRF.2b3 Complete a statement that describes the ratio relationship between two quantities	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for*

		every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."
6.PRF.2b4 Determine the unit rate in a variety of contextual situations	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.2 Understand the concept of a unit rate a/b associated with a ration a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "this recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is ¾ cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*
6.PRF.2b5 Use ratios and reasoning to solve real-world mathematical problems (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, **or equations)**	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a) Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b) Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*

		c) Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. d) Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Progress Indicator: M.SE.1a using symbols (=, >, <) to compare whole numbers, fractions, or decimals; write equations; and express inverse or related operations		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.SE.1a2 Given a real world problem, write an equation using 1 set of parentheses	**Expressions and Equations** 6 EE Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.A.2 Write, read, and evaluate expressions in which letters stand for numbers. c) Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length s = 1/2.*
6.SE.1a3 Write expressions for real-world problems involving one unknown number		No CCRA linked

6.SE.1a4 Given a real world problem, write an inequality.	**Expressions and Equations** 6 EE Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.B.8 Write an inequality of the form x>c or x<c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x>c or x<c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
Explanations and clarifications:		
Progress Indicator: M.SE.1b writing, interpreting, and using expressions, equations, and inequalities (including using brackets, parentheses, or braces)		
Core Content Connectors: 6	**CCRA Domain/Cluster**	**Idaho Content Standard**
6.SE.1b1 Evaluate whether or not both sides of an equation are equal	**Expressions and Equations** 6 EE Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.A.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). *For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.*
6.SE.1b2 Use properties to produce equivalent expressions	**Expressions and Equations** 6 EE Apply and extend previous understandings of arithmetic to algebraic expressions.	6.EE.A.3 Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression 3 (2+x) to produce the equivalent expression 6 + 3x: apply the distributive property to the expression 24x +18y to produce the equivalent expression 6(4x + 3y): apply properties of operations to y+y+y to produce the equivalent expression 3y.

Mathematics | Grade 7 | Overview

Ratios and Proportional Relationships (RP)
• Analyze proportional relationships and use them to solve real-world and mathematical problems.
The Number System (NS)
• Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
Expressions and Equations (EE)
• Use properties of operations to generate equivalent expressions.
• Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
Geometry (G)
• Draw, construct and describe geometrical figures and describe the relationships between them.
• Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.
Statistics and Probability (SP)
• Use random sampling to draw inferences about a population.
• Draw informal comparative inferences about two populations.
• Investigate chance processes and develop, use, and evaluate probability models.

Progress Indicator: M.DPS.1b distinguishing among populations, censuses, and sampling		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.DPS.1b1 Determine sample size to answer a given question	**Statistics and Probability** 7 SP Use random sampling to draw inferences about a population.	7.SP.A.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
Progress Indicator: M.DPS.1g displaying and interpreting univariate data using dot plots, histograms, and circle graphs		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**

7.DPS.1g1 Graph continuous data using line graphs, histograms, or dot plots	**Statistics and Probability** 6 SP Summarize and describe distributions.	6.SP.B.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
Progress Indicator: M.DPS.1i using box plots, interquartile range, mean absolute deviation, range, and the concept of outliers to characterize the distribution (variability) of univariate data		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.DPS.1i1 Solve for the median of a given data set	**Statistics and Probability** 6 SP Summarize and describe distributions.	6.SP.B.5 Summarize numerical data sets in relations to their context such as by: c) Giving quantitative measures of center (median and/or mean) and variability as well as describing any overall pattern and striking deviations from the overall pattern with reference to the context in which the data were gathered.
7.DPS.1i2 Identify the range (high/low), median (middle), mean, or mode of a given data set	**Statistics and Probability** 7 SP Draw informal comparative inferences about two populations.	7.SP.B.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about the two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*
Progress Indicator: M.DPS.1j comparing two unequal distributions of data using number of data points, measures of central tendency, shape, and variability (numerical data), and two-way tables (categorical variables)		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.DPS.1j1 Make or select a statement to compare the distribution of 2 data sets	**Statistics and Probability** 7 SP Draw informal comparative inferences about two populations.	7.SP.B.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the

		centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.*
Progress Indicator: M.DPS.1k supporting claims about the results of investigations (e.g., coordinating among the measures of central tendency and variability)		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.DPS.1k1 Analyze graphs to determine or select appropriate comparative inferences about two samples or populations	**Statistics and Probability** 7 SP Draw informal comparative inferences about two populations.	7.SP.B.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about the two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.*

Progress Indicator: M.DPS.2a conducting simple probability experiments and expressing results in terms of relative frequencies or proportions as first estimate of probability		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.DPS.2a1 Conduct simple probability experiments		**No CCRA linked**
Progress Indicator: E.DPS.2d describing the probability of events as being certain, likely, equally likely, unlikely, or impossible		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**

7.DPS.2d1 Describe the probability of events as being certain or impossible, likely, less likely or equally likely	**Statistics and Probability** 7 SP Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around ½ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
7.DPS.2d2 State the theoretical probability of events occurring in terms of ratios (words, percentages, decimals)	**Statistics and Probability** 7 SP Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around ½ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
Progress Indicator: M.DPS.2b describing and representing (e.g., tree diagrams) all possible outcomes (sample space) and the theoretical probabilities of each outcome (as proportion of a specific outcome relative to all possible outcomes) in simple probability experiments		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.DPS.2b1 Identify sample space for a single event (coin, spinner, die)		
Progress Indicator: M.DPS.2d identifying sample spaces for multi-stage probability experiments (independent events) and determining the theoretical probabilities of specific event combinations		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.DPS.2d3 Using a tree diagram, represent all possible outcomes of a situation, with up to 3 compound events with 2 or 3 possibilities per category		

(selecting the color of shirt, pant, type of shoes)		
7.DPS.2d4 Make a prediction regarding the probability of an event occurring; conduct simple probability experiments	**Statistics and Probability** 7 SP Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.6 Approximate the probability of a chance event by collecting data on the chance process that produce it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. *For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.*
7.DPS.2d5 Compare actual results of simple experiment with theoretical probabilities	**Statistics and Probability** 7 SP Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. a) Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.* b) Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the*

		approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?
Progress Indicator: M.DPS.2e designing and conducting multi-stage (compound) probability experiments (independent events) and comparing the results with theoretical probabilities		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.DPS.2e1 Determine the theoretical probability of multistage probability experiments (2 coins, 2 dice)	**Statistics and Probability** 7 SP Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a) Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b) Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. a) Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A*

		blood, what is the probability that it will take at least 4 donors to find one with type A blood?
7.DPS.2e2 Collect data from multistage probability experiments (2 coins, 2 dice)	**Statistics and Probability** 7 SP Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a) Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b) Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. c) Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*
7.DPS.2e3 Compare actual results of multistage experiment with theoretical probabilities	**Statistics and Probability** 7 SP Investigate chance processes and	7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

	develop, use, and evaluate probability models.	a) Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b) Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. c) Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*
Progress Indicator: M.DPS.2f distinguishing between association of two variables and cause and effect relationship between two variables		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
No CCCs developed for this PI		

Progress Indicator: M.GM.1e constructing or drawing geometric shapes from given conditions (e.g., draw triangles given three angle or side measures; change scale)		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**

7.GM.1e1 Construct or draw plane figures using properties	**Geometry** 7 G Draw, construct, and describe geometrical figures and describe the relationships between them.	7.G.A.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.
Progress Indicator: M.GM.1h solving real-world area, surface area, and volume problems using different strategies (formulas and decomposing figures)		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.GM.1h1 Add the area of each face of a prism to find surface area of three-dimensional objects	**Geometry** 7 G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.B.6 Solve real-world and mathematical problems involving area, volume, and surface area of two and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
7.GM.1h2 Find the surface area of three-dimensional figures using nets of rectangles or triangles	**Geometry** 7 G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.B.6 Solve real-world and mathematical problems involving area, volume, and surface area of two and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
7.GM.1h3 Find area of plane figures and surface area of solid figures (quadrilaterals)	**Geometry** 7 G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.B.6 Solve real-world and mathematical problems involving area, volume, and surface area of two and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
7.GM.1h4 Find area of an equilateral, isosceles, and scalene triangle	**Geometry** 7 G Solve real-life and mathematical	7.G.B.6 Solve real-world and mathematical problems involving area, volume, and surface area of two and three dimensional

	problems involving angle measure, area, surface area, and volume.	objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
7.GM.1h5 Describe the two dimensional figures that result from a decomposed three dimensional figure.	**Geometry** 7 G Draw, construct, and describe geometrical figures and describe the relationships between them.	7.G.A.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.
Explanations and clarifications:		

Progress Indicator: M.ME.1d applying proportional reasoning to problems with ratios of length, area, and quantities measured in like or different units		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.ME.1d1 Solve problems that use proportional reasoning with ratios of length and area	**Geometry** 7 G Draw, construct, and describe geometrical figures and describe the relationships between them.	7.G.A.1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
Progress Indicator: M.ME.1e exploring what happens to 2 and 3-dimensional measurements (such as surface area, area, and volume) when the figure is changed in some way (e.g., scale drawings)		
No CCCs developed for this PI		

Progress Indicator: M.ME.2c selecting and applying appropriate standard units and tools to measure to an approriate level of precision		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.ME.2c1 Solve one step real world measurement problems involving area, volume, or surface area of two- and three-dimensional objects	**Geometry** 7 G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.B.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right

		prisms.
Progress Indicator: M.ME.2d using various strategies (decomposing complex shapes, using formulas) to measure volume (cones, cylinders, spheres) and area and circumference of circles		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.ME.2d1 Apply formula to measure area and circumference of circles	**Geometry** 7 G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.B.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
Progress Indicator: M.ME.2e solving simple problems involving scale factors, rates, and derived measures		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.ME.2e1 Solve one step real world problems related to scaling	**Geometry** 7 G Draw, construct, and describe geometrical figures and describe the relationships between them.	7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
7.ME.2e2 Solve one step problems involving unit rates associated with ratios of fractions	**Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*

Progress Indicator: M.NO.1g representing and using integers; comparing and expressing absolute value and additive inverse relationships		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.NO.1g1 Identify the additive inverse of a number (e.g., -3 and +3)	**The Number System**	7.NS.A.1b, 7.NS.A.1c Apply and extend previous understandings of addition and

	7 NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. b) Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. c) Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
7.NO.1g2 Identify the difference between two given numbers on a number line using absolute value	**The Number System** 7 NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	7.NS.A.1c Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. c) Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.

Progress Indicator: M.NO.1h recognizing and modeling fractions, decimals, and percents as different representations of rational numbers		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.NO.1h1 Identify an equivalent fraction, decimal and percent when given one of the three numbers	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	6.RP.A.3d Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. d) Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Progress Indicator: M.NO.2f describing proportional relationships and solving related problems		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.NO.2f1 Identify the proportional relationship between two quantities	**Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.2 Recognize and represent proportional relationships between quantities. a) Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of

		proportional relationships. c) Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.* d) Explain what a point (*x*, *y*) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, *r*) where r is the unit rate.
7.NO.2f2 Determine if two quantities are in a proportional relationship using a table of equivalent ratios or points graphed on a coordinate plane	**Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.2 Recognize and represent proportional relationships between quantities. a) Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. b) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
7.NO.2f3 Find unit rates given a ratio	**Ratios and Proportional Relationships**	7.RP.A.1 Compute unit rates associated with ratios of fractions, including ratios of

	7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	lengths, areas and other quantities measured in like or different units
7.NO.2f4 Use a rate of change or proportional relationship to determine the points on a coordinate plane	**The Number System** 6 NS Apply and extend previous understandings of numbers to the system of rational numbers **Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	6.NS.C.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. 7.RP.A.2 Recognize and represent proportional relationships between quantities. d) Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.
7.NO.2f5 Use proportions to solve ratio problems	**Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.
7.NO2.f6 Solve word problems involving ratios	**Ratios and Proportional Relationships** 6 RP Understand ratio concepts and use ratio reasoning to solve problems.	7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and

		decrease, percent error.
Progress Indicator: M.NO.2h using operations involving percents and percent increase/decrease		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.NO.2h1 Find percents in real world contexts	**Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.
7.NO.2h2 Solve one step percentage increase and decrease problems	**Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.
Progress Indicator: M.NO.2i using operations with rational numbers; representing rational numbers and approximations of irrational numbers on a number line		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.NO.2i1 Solve multiplication problems with positive/negative numbers	**The Number System** 7 NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a) Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational

		numbers by describing real-world contexts. b) Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real-world contexts. c) Apply properties of operations as strategies to multiply and divide rational numbers. d) Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
7.NO.2i2 Solve division problems with positive/negative numbers	**The Number System** 7 NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. a) Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(–1)(–1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

		b) Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q = p/(–q)$. Interpret quotients of rational numbers by describing real-world contexts. c) Apply properties of operations as strategies to multiply and divide rational numbers. d) Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
Explanations and clarifications: Not included: M.NO.2g using operations with complex fractions		

Progress Indicator: M.NO.3c using stated assumptions, definitions, patterns, and previously established results in constructing mathematical arguments			
Core Content Connectors: 7-8	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[6]**	
7-8.NO.3c1 Use the rules for mathematical operations to verify the results when more than one operation is required to solve a problem	7.EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		structure. Look for and express regularity in repeated reasoning.	
7-8.NO.3c2 Explain the selection of rule(s) to use to verify a response	7.NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
7-8.NO.3c3 Analyze provided information (e.g., a graph) to describe the relationship between two quantities	7.RP Analyze proportional relationships and use them to solve real-world mathematical problems	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
7-8.NO.3c4 Construct an argument using established data and any given pattern within that data	8.SP Investigate patterns of association in bivariate data	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and

		and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	express regularity in repeated reasoning.
7-8.NO.3c5 Explain each step to solve a problem (e.g., explain how to solve a multi-step equation)	7.EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
Explanations and clarifications: It was decided to not address **M.NO.3d making conjectures and building a logical progression of statements to explore the truth of conjectures** due to the complex nature of the PI for this population of students.			

Progress Indicator: M.PRF.1e representing and computing unit rates associated with ratios of lengths, areas, and other quantities measured in like or different units		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.PRF.1e1 Determine unit rates associated with ratios of lengths, areas, and other quantities measured in like units	**Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units. *For example, if a person walks ½ mile in each*

		¼ hour, compute the unit rate as the complex fraction ½ / ¼ miles per hour, equivalently 2 miles per hour.
7.PRF.1e2 Represent proportional relationships on a line graph	**Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.2 Recognize and represent proportional relationships between quantities. b) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
Progress Indicator: M.PRF.1f identifying essential quantitative relationship(s) in a situation and using symbolic expressions to represent it and draw reasonable conclusions from it		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.PRF.1f1 Use proportional relationships to solve multistep percent problems in real world situations	**Ratios and Proportional Relationships** 7 RP Analyze proportional relationships and use them to solve real-world and mathematical problems.	7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.*
Progress Indicator: M.PRF.1g modeling, solving, and explaining contextualized problems using various representations such as graphs, tables, functions, and equations		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.PRF.1g1 Solve real world multi step problems using whole numbers	**Expressions and Equations** 7 EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	7.EE.B.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness

		of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 ¾ inches long in the center of a door that is 27 ½ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.*
7.PRF.1g2 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities	**Expressions and Equations** 7 EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. a) Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?* b) Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of

		the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*

Progress Indicator: M.PRF.2a representing, analyzing, extending, and generalizing a variety of patterns using tables, graphs, words, and symbolic rules		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.PRF.2a5 Use variables to represent two quantities in a real-world problem that change in relationship to one another	**Expressions and Equations** 6 EE Represent and analyze quantitative relationships between dependent and independent variables.	6.EE.C.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. *Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time.*
Progress Indicator: M.PRF.2d solving linear equations and formulating and explaining reasoning about expressions and equations		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.PRF.2d1 Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific	**Expressions and Equations** 7 EE Solve real-life and mathematical	7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations

rational numbers	problems using numerical and algebraic expressions and equations.	and inequalities to solve problems by reasoning about the quantities. b) Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*

Progress Indicator: M.SE.1f writing and interpreting mathematical expressions, equations, and inequalities that correspond to given situations		
Core Content Connectors: 7	**CCRA Domain/Cluster**	**Idaho Content Standard**
7.SE.1f1 Set up equations with 1 variable based on real world problems	**Expressions and Equations** 7 EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
7.SE.1f2 Solve equations with 1 variable based on real world problems	**Expressions and Equations** 7 EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
7.SE.1f3 Add and subtract linear expressions.	**Expressions and Equations** 7 EE Use properties of operations to	7.EE.A.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

	generate equivalent expressions	
7.SE.1f4 Factor and expand linear expressions.	**Expressions and Equations** 7 EE Use properties of operations to generate equivalent expressions	7.EE.A.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
Explanations and clarifications:		

Mathematics | Grade 8 | Overview

The Number System (NS)
• Know that there are numbers that are not rational, and approximate them by rational numbers.
Expressions and Equations (EE)
• Work with radicals and integer exponents.
• Understand the connections between proportional relationships, lines, and linear equations.
• Analyze and solve linear equations and pairs of simultaneous linear equations.
Functions (F)
• Define, evaluate, and compare functions.
• Use functions to model relationships between quantities.
Geometry (G)
• Understand congruence and similarity using physical models, transparencies, or geometry software.
• Understand and apply the Pythagorean Theorem.
• Solve real-world and mathematical problems involving volume of cylinders, cones and spheres.
Statistics and Probability (SP)
• Investigate patterns of association in bivariate data.

Progress Indicator: M.DPS.1f formulating questions about groups larger than classroom groups, comparing different populations or samples, and involving two variables		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.DPS.1f1 Formulate a research question to study		No CCRA linked
8.DPS.1f2 Identify two variables to study in a given a research question		No CCRA linked
8.DPS.1f3 Construct a two-way table summarizing data on two categorical variables collected from the same subjects; identify possible association	**Statistics and Probability** 8 SP Investigate patterns of association in bivariate data.	8.SP.A.4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way

between the two variables		table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*
Progress Indicator: M.DPS.1g displaying and interpreting univariate data using dot plots, histograms, and circle graphs		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.DPS.1g2 Graph data using line graphs, histograms, or box plots	**Statistics and Probability** 8 SP Investigate patterns of association in bivariate data.	8.SP.A.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and non linear association.
Progress Indicator: M.DPS.1h displaying data in scatter plots and investigating the association between the variables		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.DPS.1h1 Graph bivariate data using scatter plots and identify possible associations between the variables	**Statistics and Probability** 8 SP Investigate patterns of association in bivariate data.	8.SP.A.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and non linear association.
Progress Indicator: M.DPS.1i using box plots, interquartile range, mean absolute deviation, range, and the concept of outliers		

to characterize the distribution (variability) of univariate data		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.DPS.1i3 Using box plots and scatter plots, identify data points that appear to be outliers	**Statistics and Probability** 8 SP Investigate patterns of association in bivariate data.	8.SP.A.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and non linear association.
8.DPS.1i4 Identify outliers, range, mean, median, and mode	**Statistics and Probability** 6 SP Summarize and describe distributions.	6.SP.B.5 Summarize numerical data sets in relation to their context, such as by: c) Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.
Progress Indicator: M.DPS.1j comparing two unequal distributions of data using number of data points, measures of central tendency, shape, and variability (numerical data), and two-way tables (categorical variables)		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.DPS.1j2 Make or select an appropriate statement based upon two unequal data sets using measure of central tendency and shape	**Statistics and Probability** 7 SP Draw informal comparative inferences about two populations.	7.SP.B.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about the two populations. *For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade*

		science book.
Progress Indicator: M.DPS.1k supporting claims about the results of investigations (e.g., coordinating among the measures of central tendency and variability)		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.DPS.1k2 Analyze displays of bivariate data to develop or select appropriate claims about those data	**Statistics and Probability** 8 SP Investigate patterns of association in bivariate data.	8.SP.A.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. *For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?*

Progress Indicator: M.DPS.2e designing and conducting multi-stage (compound) probability experiments (independent events) and comparing the results with theoretical probabilities		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.DPS.2e4 Determine the theoretical probability of multistage probability experiments (2 coins, 2 dice)	**Statistics and Probability** 7 SP Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a) Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the

		sample space for which the compound event occurs. b) Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. c) Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*
8.DPS.2e5 Collect data from multistage probability experiments (2 coins, 2 dice)	**Statistics and Probability** 7 SP Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a) Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b) Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g.,

		"rolling double sixes"), identify the outcomes in the sample space which compose the event. c) Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?*
8.DPS.2e6 Compare actual results of multistage experiment with theoretical probabilities	**Statistics and Probability** 7 SP Investigate chance processes and develop, use, and evaluate probability models.	7.SP.C.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. a) Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. b) Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., "rolling double sixes"), identify the outcomes in the sample space which compose the event. c) Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation*

		tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?
Progress Indicator: M.DPS.2g using simple lines to model association between two numerical variables in a bivariate data set		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.DPS.2g1 Distinguish between a linear and non-linear association when analyzing bivariate data on a scatter plot	**Statistics and Probability** 8 SP Investigate patterns of association in bivariate data.	8.SP.A.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
8.DPS.2g2 Interpret the slope and the y-intercept of a line in the context of a problem	**Statistics and Probability** 8 SP Investigate patterns of association in bivariate data.	8.SP.A.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.*

Progress Indicator: M.GM.1f recognizing and demonstrating rotations, reflections, and translations using multiple contexts (e.g., using coordinates, models, drawings, technology)		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.GM.1f1 Recognize a rotation, reflection, or translation of a figure	**Geometry** 8 G Understand congruence and similarity using physical models, transparencies, or	8.G.A.1 Verify experimentally the properties of rotations, reflections, and translations:

	geometry software.	a) Lines are taken to lines, and line segments to line segments of the same length. b) Angles are taken to angles of the same measure. c) Parallel lines are taken to parallel lines.
8.GM.1f2 Identify a rotation, reflection, or translation of a plane figure when given coordinates	**Geometry** 8 G Understand congruence and similarity using physical models, transparencies, or geometry software.	8.G.A.3 Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
Progress Indicator: M.GM.1g demonstrating congruence and similarity using a variety of two-dimensional figures		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.GM.1g1 Recognize congruent and similar figures	**Geometry** 8 G Understand congruence and similarity using physical models, transparencies, or geometry software.	8.G.A.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
Progress Indicator: M.GM.1i exploring and explaining angle relationships (e.g., pairs of parallel lines cut by a transversal, including perpendicular lines)		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.GM.1i1 Identify supplementary angles	**Geometry** 7 G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.B.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

8.GM.1i2 Identify complimentary angles	**Geometry** 7 G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.B.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
8.GM.1i3 Identify adjacent angles	**Geometry** 7 G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	7.G.B.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.
8.GM.1i4 Use angle relationships to find the value of a missing angle	**Geometry** 7 G Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. 8 G Understand congruence and similarity using physical models, transparencies, or geometry software.	7.G.B.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. 8.G.A.5 Use informal arguments to establish facts about the angle sum and exterior angle for triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and given an argument in terms of transversals why this is so.*
Progress Indicator: M.GM.1j applying the Pythagorean Theorem		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.GM.1j1 Find the hypotenuse of a two-dimensional right triangle (Pythagorean Theorem)	**Geometry** 8 G Understand and apply the Pythagorean Theorem.	8.G.B.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

8.GM.1j2 Find the missing side lengths of a two-dimensional right triangle (Pythagorean Theorem)	**Geometry** 8 G Understand and apply the Pythagorean Theorem.	8.G.B.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
Explanations and clarifications:		

Progress Indicator: M.ME.1d applying proportional reasoning to problems with ratios of length, area, and quantities measured in like or different units		
No CCCs developed for this PI		
Progress Indicator: M.ME.1e exploring what happens to 2 and 3-dimensional measurements (such as surface area, area, and volume) when the figure is changed in some way (e.g., scale drawings)		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.ME.1e1 Describe the changes in surface area, area, and volume when the figure is changed in some way (e.g., scale drawings)	**Geometry** 8 G Understand congruence and similarity using physical models, transparencies, or geometry software.	8.G.A.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
8.ME.1e1 Compare area and volume of similar figures	**Geometry** 8 G Understand congruence and similarity using physical models, transparencies, or geometry software.	8.G.A.4 Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

Progress Indicator: M.ME.2d using various strategies (decomposing complex shapes, using formulas) to measure volume

(cones, cylinders, spheres) and area and circumference of circles		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.ME.2d2 Apply the formula to find the volume of 3-dimensional shapes (i.e., cubes, spheres, and cylinders)	**Geometry** 8 G Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.	8.G.C.9 Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.
Progress Indicator: M.ME.2f applying the Pythagorean Theorem to determine lengths/distances in real-world situations		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.ME.2f1 Apply the Pythagorean Theorem to determine lengths/distances in real-world situations	8 G Understand and apply the Pythagorean Theorem.	8.G.B.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

Progress Indicator: M.NO.1i using exponents and scientific notation to express very large or very small quantities		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.NO.1i1 Convert a number expressed in scientific notation up to 10,000	**Expressions and Equations** 8 EE Work with radicals and integer exponents.	8.EE.A.3 Use numbers expressed in the form of a single digit times a whole-number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 times 108 and the population of the world as 7 times 109, and determine that the world population is more than 20 times larger.
Progress Indicator: M.NO.1j Making interpretations and comparisons of scientific notation produced by technology or appearing in various media		

Core Content Connectors: 8	CCRA Domain/Cluster	Idaho Content Standard
8.NO.1j1 Perform operations with numbers expressed in scientific notation.	**Expressions and Equations** 8 EE Work with radicals and integer exponents.	8.EE.A.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
Progress Indicator: M.NO.1k distinguishing rational numbers (terminating and repeating) from irrational numbers (non-terminating and non-repeating), and recognizing that together they form the real number system and that both can be represented on the number line		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.NO.1k1 Identify π as an irrational number	**The Number System** 8 NS Know that there are numbers that are not rational, and approximate them by rational numbers.	8.NS.A.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
8.NO.1k2 Round irrational numbers to the hundredths place	**The Number System** 8 NS Know that there are numbers that are not rational, and approximate them by rational numbers.	8.NS.A.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
8.NO.1k3 Use approximations of irrational numbers to locate them on a	**The Number System**	8.NS.A.2 Use rational approximations of irrational numbers to compare the size of

number line	8 NS Know that there are numbers that are not rational, and approximate them by rational numbers.	irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π2). For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.

Progress Indicator: M.NO.2i using operations with rational numbers; representing rational numbers and approximations of irrational numbers on a number line		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.NO.2i3 Solve one step addition, subtraction, multiplication, division problems with fractions, decimals, and positive/negative numbers	**The Number System** 7 NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	7.NS.A.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. d) Apply properties of operations as strategies to add and subtract rational numbers. 7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.
8.NO.2i4 Solve two step addition, subtraction, multiplication, and division problems with fractions, decimals, or positive/negative numbers	**The Number System** 7 NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	7.NS.A.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. d) Apply properties of operations as

		strategies to add and subtract rational numbers. 7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers.

Progress Indicator: M.NO.3c using stated assumptions, definitions, patterns, and previously established results in constructing mathematical arguments			
Core Content Connectors: 7-8	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[6]**	
7-8.NO.3c1 Use the rules for mathematical operations to verify the results when more than one operation is required to solve a problem	7.EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
7-8.NO.3c2 Explain the selection of rule(s) to use to verify a response	7.NS Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated

	rational numbers	arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	reasoning.
7-8.NO.3c3 Analyze provided information (e.g., a graph) to describe the relationship between two quantities	7.RP Analyze proportional relationships and use them to solve real-world mathematical problems	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
7-8.NO.3c4 Construct an argument using established	8.SP Investigate patterns of association in bivariate data	Make sense of problems & persevere in solving them.	Use appropriate tools strategically. Attend to precision. Look for and

data and any given pattern within that data		Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	make use of structure. Look for and express regularity in repeated reasoning.
7-8.NO.3c5 Explain each step to solve a problem (e.g., explain how to solve a multi-step equation)	7.EE Solve real-life and mathematical problems using numerical and algebraic expressions and equations	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

Explanations and clarifications: It was decided to not address **M.NO.3d making conjectures and building a logical progression of statements to explore the truth of conjectures** due to the complex nature of the PI for this population of students.

Progress Indicator: M.PRF.1e representing and computing unit rates associated with ratios of lengths, areas, and other quantities measured in like or different units		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.PRF.1e2 Represent proportional relationships on a line graph	**Expressions and Equations** 8 EE Understand the connections between proportional relationships, lines, and linear equations.	8.EE.B.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*
Progress Indicator: M.PRF.1f identifying essential quantitative relationships in a situation and using symbolic expressions to represent it and draw reasonable conclusions from it		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.PRF.1f 2 Describe or select the relationship between the two quantities given a line graph of a situation	**Functions** 8 F Use functions to model relationships between quantities.	8.F.B.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
Progress Indicator: M.PRF.1g modeling, solving, and explaining contextualized problems using various representations such as graphs, tables, functions, and equations		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.PRF.1g3 Solve linear equations with 1 variable	**Expressions and Equations** 8 EE Analyze and solve linear equations	8.EE.C.7 Solve linear equations in one variable.

	and pairs of simultaneous linear equations.	a) Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different). b) Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
8.PRF.1g4Solve systems of two linear equations in two variables and graph the results.	**Expressions and Equations** 8 EE Analyze and solve linear equations and pairs of simultaneous linear equations.	8.EE.C.8 Analyze and solve pairs of simultaneous linear equations. a) Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b) Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.

		c) Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.
8.PRG.1g5 Solve real world and mathematical problems leading to two linear equations in two variables.	**Expressions and Equations** 8 EE Analyze and solve linear equations and pairs of simultaneous linear equations.	8.EE.C.8 Analyze and solve pairs of simultaneous linear equations. a) Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b) Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6. c) Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.

Progress Indicator: M.PRF.2c relating and comparing different forms of representation and identifying functions as linear or nonlinear		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.PRF.2c1 Given two graphs, describe the function as linear and not linear	**Functions** 8 F Define, evaluate, and compare functions. 8 F Use functions to model relationships between quantities.	8.F.A.3 Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *For example, the function A = s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.* 8.F.B.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
Progress Indicator: M.PRF.2e using functions to describe quantitative relationships		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**
8.PRF.2e1 Distinguish between functions and non-functions, using equations, graphs or tables		No CCRA linked
8.PRF.2e2 Identify the rate of change (slope) and initial value (y-intercept) from graphs	**Functions** 8 F Use functions to model relationships between quantities.	8.F.B.4 Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from

		a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
8.PRF.2e3 Given a verbal description of a situation, create or identify a graph to model the situation	**Functions** 8 F Use functions to model relationships between quantities.	8.F.B.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
8.PRF.2e4 Given a graph of a situation, generate a description of the situation	**Functions** 8 F Use functions to model relationships between quantities.	8.F.B.5 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
8.PRF.2e5 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	**Functions** 8 F Define, evaluate, and compare functions.	8.F.A.2 Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*

Progress Indicator: M.SE.1f writing and interpreting mathematical expressions, equations, and inequalities that correspond to given situations		
Core Content Connectors: 8	**CCRA Domain/Cluster**	**Idaho Content Standard**

8.SE.1f5 Use properties of integer exponents to produce equivalent expressions	**Expressions and Equations** 8 EE Work with radicals and integer exponents	8.EE.A.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions.
Explanations and clarifications:		

Mathematics | Grade High School | Overview

Interpreting Functions (IF)
• Understand the concept of a function and use function notation
• Interpret functions that arise in applications in terms of the context
• Analyze functions using different representations
Building Functions (BF)
• Build a function that models a relationship between two quantities
• Build new functions from existing functions
Linear, Quadratic, and Exponential Models (LE)
• Construct and compare linear, quadratic, and exponential models and solve problems
• Interpret expressions for functions in terms of the situation they model
Trigonometric Functions (TF)
• Extend the domain of trigonometric functions using the unit circle
• Model periodic phenomena with trigonometric functions
• Prove and apply trigonometric identities
Congruence (CO)
• Experiment with transformations in the plane
• Understand congruence in terms of rigid motions
• Prove geometric theorems
• Make geometric constructions
Similarity, Right Triangles, and Trigonometry (SRT)
• Understand similarity in terms of similarity transformations
• Prove theorems involving similarity
• Define trigonometric ratios and solve problems involving right triangles
• Apply trigonometry to general triangles
Circles (C)
• Understand and apply theorems about circles
• Find arc lengths and areas of sectors of circles
Expressing Geometric Properties with Equations (GPE)
• Translate between the geometric description and the equation for a conic section

• Use coordinates to prove simple geometric theorems algebraically
Geometric Measurement and Dimension (GMD)
• Explain volume formulas and use them to solve problems
• Visualize relationships between two dimensional and three-dimensional objects
Modeling with Geometry (MD)
• Apply geometric concepts in modeling situations
The Real Number System (RN)
• Extend the properties of exponents to rational exponents
• Use properties of rational and irrational numbers.
Quantities (Q)
• Reason quantitatively and use units to solve problems.
The Complex Number System (CN)
• Perform arithmetic operations with complex numbers
• Represent complex numbers and their operations on the complex plane
• Use complex numbers in polynomial identities and equations.
Vector and Matrix Quantities (VM)
• Represent and model with vector quantities.
• Perform operations on vectors.
• Perform operations on matrices and use matrices in applications.
Seeing Structure in Expressions (SSE)
• Interpret the structure of expressions
• Write expressions in equivalent forms to solve problems
Arithmetic with Polynomials and Rational Expressions (APR)
• Perform arithmetic operations on polynomials
• Understand the relationship between zeros and factors of polynomials
• Use polynomial identities to solve problems
• Rewrite rational expressions
Creating Equations (CED)
• Create equations that describe numbers or relationships
Reasoning with Equations and Inequalities (REI)
• Understand solving equations as a process of reasoning and explain the reasoning

• Solve equations and inequalities in one variable
• Solve systems of equations
• Represent and solve equations and inequalities graphically
Interpreting Categorical and Quantitative Data (ID)
• Summarize, represent, and interpret data on a single count or measurement variable
• Summarize, represent, and interpret data on two categorical and quantitative variables
• Interpret linear models
Making Inferences and Justifying Conclusions (IC)
• Understand and evaluate random processes underlying statistical experiments
• Make inferences and justify conclusions from sample surveys, experiments and observational studies
Conditional Probability and the Rules of Probability (CP)
• Understand independence and conditional probability and use them to interpret data
• Use the rules of probability to compute probabilities of compound events in a uniform probability model
Using Probability to Make Decisions (MD)
• Calculate expected values and use them to solve problems
• Use probability to evaluate outcomes of decisions

Progress Indicator: H.DPS.1a designing and conducting different kinds of studies using categorical and numerical data, explain results, and use data to estimate a population mean or proportion: a. observational studies (e.g., traffic patterns at an intersection near the school); b. sample surveys (a survey of student nutritional habits); c. simple comparative experiments (e.g., comparisons of water and fertilizer treatments in a plant growth experiment)		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.DPS.1a1 Design study using categorical and continuous data, including creating a question, identifying a sample, and making a plan for data collection	**Interpreting Categorical and Quantitative Data** S ID Summarize, represent and interpret data on two categorical and quantitative variables.	HSS.ID.B.5 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data. Recognize possible associations and trends in the data.
Progress Indicator: H.DPS.1b representing data with plots on the real number line (dot plots, histograms, box plots)		

Core Content Connectors: 9-12	CCRA Domain/Cluster	Idaho Content Standard
H.DPS.1b1 Complete a graph given the data, using dot plots, histograms, or box plots	**Interpreting Categorical and Quantitative Data** S ID Summarize, represent, and interpret data on a single count or measurement variable.	HSS.ID.A.1 Represent data with plots on the real number line (dot plots, histograms, and box plots).
Progress Indicator: H.DPS.1c analyzing and summarizing the data resulting from studies using statistical measures appropriate to shape of the data (median, mean) and spread (interquartile range, standard deviation), and using data to support inferences (population parameters, sample size) or explain possible outliers		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.DPS.1c1 Use descriptive stats; range, median, mode, mean, outliers/gaps to describe the data set	**Interpreting Categorical and Quantitative Data** S ID Summarize, represent, and interpret data on a single count or measurement variable. S ID Summarize, represent and interpret data on two categorical and quantitative variables.	HSS.ID.A.2 Use statistics appropriate to the shape of the data distribution to compare center and spread of two or more different data sets. HSS.ID.A.4 Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve. HSS.ID.B.5 Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data. Recognize possible associations and trends in the data.
H.DPS.1c2 Compare means, median, and range of 2 sets of data	**Interpreting Categorical and Quantitative Data**	HSS.ID.A.2 Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread

	S ID Summarize, represent and interpret data on two categorical and quantitative variables.	(interquartile range, standard deviation) of two or more different data sets.
H.DPS.1c3 Determine what inferences can be made from statistics	**Making Inferences and Justifying Conclusions** S IC Understand and evaluate random processes underlying statistical experiments.	HSS.IC.A.1 Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
Progress Indicator: H.DPS.1d representing and interpreting data (graphs, scatter plots) to explain how variables are related, or to fit a function to the data		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.DPS.1d1 Represent data on a scatter plot to describe and predict	**Interpreting Categorical and Quantitative Data** S ID Summarize, represent and interpret data on two categorical and quantitative variables.	HSS.ID.B.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
H.DPS.1d2 Select an appropriate statement that describes the relationship between variables	**Interpreting Categorical and Quantitative Data** S ID Summarize, represent and interpret data on two categorical and quantitative variables.	HSS.ID.B.6 Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
H.DPS.1d3 Make or select an appropriate statement(s) about findings	**Making Inferences and Justifying Conclusions** S IC Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	HSS.ID.B.6 Evaluate reports based on data.
H.DPS.1d4 Apply the results of the data to a real world situation	**Making Inferences and Justifying Conclusions** S IC Make inferences and justify conclusions	HSS.ID.B.6 Evaluate reports based on data.

	from sample surveys, experiments, and observational studies.	

Progress Indicator: H.DSP.2b exploring (framing effects) the degree to which we rate something as "good" or "bad"/"desirable" or "undesirable" when numerical information is presented positively (75% lean) or negatively (25% fat)		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.DPS.2b1 Identify and describe the degree to which something is rated "good" or "bad"/desirable or undesirable based on numerical information	**Using Probability to Make Decisions** S MD Use probability to evaluate outcomes of decisions.	HSS.MD.B.7 Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).
Progress Indicator: H.DSP.2c designing and conducting multi-stage (compound) probability experiments (independent events) and comparing the results with theoretical probabilities		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.DPS.2c1 Determine the theoretical probability of multistage probability experiments	**Using Probability to Make Decisions** S MD Calculate expected values and use them to solve problems.	HSS.MD.A.3 Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. *For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.*
H.DPS.2c2 Collect data from multistage probability experiments	**Using Probability to Make Decisions** S MD Calculate expected values and use them to solve problems.	HSS.MD.A.3 Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. *For example, find the theoretical probability distribution for the number of correct answers obtained by*

		guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.
H.DPS.2c3 Compare actual results of multistage experiment with theoretical probabilities	**Using Probability to Make Decisions** S MD Calculate expected values and use them to solve problems.	HSS.MD.A.3 Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. *For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.*
Progress Indicator: H.DSP.2d constructing and interpreting two-way frequency tables when two categories are associated with each object being classified		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.DPS.2d1 Select or make an appropriate statement based on a two-way frequency table	**Conditional Probability and the Rules of Probability** S CP Understand independence and conditional probability and use them to interpret data.	HSS.CP.A.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. *For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other*

		subjects and compare the results.
Progress Indicator: H.DSP.2e researching and finding real-world examples and explaining the concept of conditional probability (e.g., compare the chances of having lung cancer if you are a smoker with the chances of being a smoker if you have lung cancer)		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.DPS.2e1 Select or make an appropriate statement based on real world examples of conditional probability	**Conditional Probability and the Rules of Probability** S CP Understand independence and conditional probability and use them to interpret data.	HSS.CP.A.5 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. *For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.*

Progress Indicator: H.GM.1a applying the Pythagorean Theorem		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.GM.1a1 Find the hypotenuse of a two-dimensional right triangle (Pythagorean Theorem)	**Geometry** 8 G Understand and apply the Pythagorean Theorem.	8.G.B.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
H.GM.1a2 Find the missing side lengths of a two-dimensional right triangle (Pythagorean Theorem)	**Geometry** 8 G Understand and apply the Pythagorean Theorem.	8.G.B.7 Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
H.GM.1a3 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	**Geometry** 8 G Understand and apply the Pythagorean Theorem.	8.G.B.8 Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
Progress Indicator: H.GM.1b using congruence and similarity relationships to solve problems, including triangle congruence relationships		

Core Content Connectors: 9-12	CCRA Domain/Cluster	Idaho Content Standard
H.GM.1b1 Use definitions to demonstrate congruency and similarity in figures	**Congruence** G CO Understand congruence in terms of rigid motions. **Similarity, Right Triangles, and Trigonometry** G.SRT Understand similarity in terms of similarity transformations.	HSG.CO.B.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. HSG.SRT.A.2 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
Progress Indicator: H.GM.1c applying understanding of rotations, reflections, and translations to construct figures (e.g., using coordinates, models, drawings, transparencies, dynamic geometry software)		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.GM.1c1 Construct, draw or recognize a figure after its rotation, reflection, or translation	**Congruence** G CO Experiment with transformations in the plane.	HSG.CO.A.5 Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure. Specify a sequence of transformation that will carry a given figure onto another. HSG.CO.A.3 Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry onto itself.
Progress Indicator: H.GM.1d applying scale factors in solving multiple similarity problems, including transformations in the coordinate plane and similarity relationships with right triangles		

Core Content Connectors: 9-12	CCRA Domain/Cluster	Idaho Content Standard
H.GM.1d1 Use the reflections, rotations, or translations in the coordinate plane to solve problems with right angles	**Geometry** 8 G Understand congruence and similarity using physical models, transparencies, or geometry software. **Similarity, Right Triangles, and Trigonometry** G SRT Understand similarity in terms of similarity transformations.	8.G.A.1 Verify experimentally the properties of rotations, reflections, and translations a) Lines are taken to lines, and line segments to line segments of the same length. b) Angles are taken to angles of the same measure. c) Parallel lines are taken to parallel lines. HSG.SRT.A.2 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformation the meaning of similarity for triangles and the equality of all corresponding pairs and angles and the proportionality of all corresponding pairs of sides.
Progress Indicator: H.GM.1e making various geometric constructions, including use of dynamic geometry software, and creating informal proofs of relationships (lines and angles, circles, polygons)		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.GM.1e1 Make formal geometric constructions with a variety of tools and methods	**Congruence** G CO Make Geometric constructions.	HSG.CO.D.12 Make formal geometric constructions with a variety of tools and methods (compass and straight edge, string, reflective devices, paper folding dynamic geometric software, etc.) Copying a segment; copying an angle; bisecting a

		segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.
Explanations and clarifications: High school standards not addressed; will be in a separate document		

Progress Indicator: H.ME.1a making decisions about units and scales that are appropriate for problem-solving situations within or across mathematics disciplines or real world contexts		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.ME.1a1 Determine the necessary unit(s) to use to solve real world problems	**Quantities** N Q Reason quantitatively and use units to solve problems.	HSN.Q.A.1 Use units as a way to understand problems and to guide the solution of multistep problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
H.ME.1a2 Solve real world problems involving units of measurement	**Quantities** N Q Reason quantitatively and use units to solve problems.	HSN.Q.A.1 Use units as a way to understand problems and to guide the solution of multistep problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
Progress Indicator: H.ME.1b investigating the results when linear dimensions of objects change by some factor (e.g., area and volume change disproportionately: area in proportion to the square of the factor and volume in proportion to its cube)		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.ME.1b1 Describe the relationship between the attributes of a figure and the changes in the area or volume when 1 attribute is changed	**Expressing Geometric Properties with Equations** G MG Explain volume formulas and use them to solve problems.	HSG.MG.A.1 Use geometric shapes and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).

H.ME.1b2 Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute	**Reasoning with Equations and Inequalities** A REI Solve equations and inequalities in one variable.	HSA.REI.B.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

Progress Indicator: H.ME.2a analyzing levels of precision, accuracy, and approximate error in measurement situations		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.ME.2a1 Describe the accuracy of measurement when reporting quantity (you can lessen your limitations by measuring precisely)	**Quantities** N Q Reason quantitatively and use units to solve problems.	HSN.Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
Progress Indicator: H.ME.2b using techniques of measurement, estimating, or calculating to compare or analyze two- and three-dimensional figures and their parts		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.ME.2b1 Determine the dimensions of a figure after dilation	**Similarity, Right Triangles, and Trigonometry** G SRT Understand similarity in terms of similarity transformations.	HSG.SRT.A.1 Verify experimentally the properties of dilations given by a center and a scale factor: a) A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b) The dilation of a line segment is longer or shorter in the ratio given by the scale factor.

H.ME.2b2 Determine if 2 figures are similar	**Similarity, Right Triangles, and Trigonometry** G SRT Understand similarity in terms of similarity transformations.	HSG.SRT.A.2 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
H.ME.2b3 Describe or select why two figures are or are not similar	**Similarity, Right Triangles, and Trigonometry** G SRT Understand similarity in terms of similarity transformations.	HSG.SRT.A.2 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
H.ME.2b4 Apply the formula to the area of a sector (e.g., area of a slice of pie)	**Circles** G C Find arc lengths and areas of sectors of circles.	HSG.C.B.5 Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.
H.ME.2b5 Apply the formula of geometric figures to solve design problems (e.g., designing an object or structure to satisfy physical restraints or minimize cost)	**Modeling with Geometry** G MG Apply geometric concepts in modeling situations.	HSG.MG.A.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

Progress Indicator: H.NO.1a using exponents and scientific notation to represent quantities and expressions

Core Content Connectors: 9-12	CCRA Domain/Cluster	Idaho Content Standard
H.NO.1a1 Represent quantities and expressions that use exponents	**The Real Number System** N RN Extend the properties of exponents to rational exponents. **Algebra Overview** A SSE Write expressions in equivalent forms to solve problems.	HSN.RN.A.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents. HSA.SSE.B.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. c) Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15t can be rewritten as $(1.151/12)12t \approx 1.01212t$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.
H.NO.1a2 Explain the influence of an exponent on the location of a decimal point in a given number	**The Real Number System** N RN Extend the properties of exponents to rational exponents.	HSN.RN.A.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents.
H.NO1a3 Convert a number expressed in scientific notation	**The Real Number System** N RN Extend the properties of exponents to rational exponents.	HSN.RN.A.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Progress Indicator: H.NO.2a using operations with rational numbers; representing rational numbers and approximations of irrational numbers on a number line		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.NO.2a1 Solve simple equations using rational numbers with one or more	**Reasoning with Equations and Inequalities**	HSA.REI.A.2 Solve simple rational and radical equations in one variable, and give

variables	A REI Understand solving equations as a process of reasoning and explain the reasoning.	examples showing how extraneous solutions may arise.
H.NO.2a2 Understand the definition of a polynomial.	**Arithmetic with Polynomials and Rational Expressions** Perform arithmetic operations on polynomials	HSA.APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
H.NO.2a3 Understand the concepts of combining like terms and closure.	**Arithmetic with Polynomials and Rational Expressions** Perform arithmetic operations on polynomials	HSA.APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
H.NO.2a4 Add, subtract, and multiply polynomials and understand how closure applies under these operations.	**Arithmetic with Polynomials and Rational Expressions** Perform arithmetic operations on polynomials	HSA.APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
H.NO.2.a5 Understand and apply the Remainder Theorem.	**Arithmetic with Polynomials and Rational Expressions** Understand the relationship between zeros and factors of polynomials	HSA.APR.B.2 Know and apply the Remainder Theorem: For a polynomial p(x) and a number a, the remainder on division by x – a is p(a), so p(a) = 0 if and only if (x – a) is a factor of p(x).
H.NO.2a6 Find the zeros of a polynomial when the polynomial is factored.	**Arithmetic with Polynomials and Rational Expressions** Understand the relationship between zeros and factors of polynomials	HSA.APR.B.3 Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.

Progress Indicator: H.NO.2b operating with irrational and complex numbers		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.NO.2b1 Explain the pattern for the sum or product for combinations of rational and irrational numbers	**The Real Number System** N RN Use properties of rational irrational numbers.	HSN.RN.B.3 Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a non-zero rational number and an irrational number is irrational.
Progress Indicator: H.NO.2c identifying exponential situations and applying the laws and properties of exponents in simplifying expressions and solving equations		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.NO.2c1 Simplify expressions that include exponents	**Seeing Structure in Expressions** A SSE Interpret the structures of expressions.	HSA.SSE.A.2 Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.*
H.NO.2c2 Rewrite expressions that include rational exponents	**The Real Number System** N RN Extend the properties of exponents to rational exponents. **Seeing Structure in Expressions** A SSE Interpret the structures of expressions.	HSN.RN.A.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents. HSA.SSE.A.2 Use the structure of an expression to identify ways to rewrite it. *For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$.*
Explanations and clarifications: Not included: H.PRF.1d recognizing that there limitations in mathematics models A.CE-3 S.IC-2		

Progress Indicator: H.NO.3a comparing the effectiveness of two plausible arguments, distinguishing correct logic or reasoning

from that which is flawed, and if there is a flaw in an argument, explaining it			
Core Content Connectors: 9-12	**Potential cluster for demonstration**	**Common Core: *Standards for Mathematical Practice*[7]**	
H.NO.3a1 Verify data displays are interpreted accurately within a response	S.ID Summarize, represent and interpret data on a single count or measurement variable	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
H.NO.3a2 Rewrite mathematical statements (e.g., an expression) in multiple forms	A.SSE Write expressions in equivalent forms to solve problems	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
H.NO.3a3 Identify an appropriate argument based upon provided data	S.IC Make inferences and justify conclusions from sample surveys, experiments, and observational studies	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.
H.NO.3a4 Compare the steps using different strategies to solve a problem (compare two strategies to decide best way to solve problem)	A.REI Understand solving equations as process of reasoning and explain the reasoning	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

		express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	
H.NO.3a5 Evaluate provided arguments or logic based upon provided data	S.IC Understand and evaluate random processes underlying statistical experiments	Make sense of problems & persevere in solving them. Reason abstractly & quantitatively. Construct viable arguments and critique the reasoning of others. Model with mathematics. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning. Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.	Use appropriate tools strategically. Attend to precision. Look for and make use of structure. Look for and express regularity in repeated reasoning.

Progress Indicator: H.PRF.1a approximating, calculating, and interpreting rates of change using graphical and numerical data		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.PRF.1a1 Interpret the rate of change using graphical representations	**Interpreting Categorical and Quantitative Data** S ID Interpret linear models.	HSS-ID.C.7 Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of data.

Progress Indicator: H.PRF.1b exploring how the rate of change of something depends on how much there is of something else (as the rate of change of speed is proportional to the amount of force acting)		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.PRF.1b1 In a linear situation using graphs or numbers, predicts the change in rate based on a given change in one variable (e.g., If I have been adding sugar at a rate of 1T per cup of water. What happens to my rate if I switch to 2T of sugar for every cup of water?)	**Linear, Quadratic, and Exponential Models** F LE Construct and compare linear, quadratic, and exponential models and solve problems.	HSF-LE.A.1b Distinguish between situations that can be modeled with linear functions and with exponential functions. b) Recognize situations in which one quantity changes at a constant rate per unit interval relative to one another.
Progress Indicator: H.PRF.1c creating mathematical models, using rules and relationships to describe and predict objects and events in the real world		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.PRF.1c1 Select the appropriate graphical representation of a linear model based on real world events		HSF-LE.A.1 Distinguish between situations that can be modeled with linear functions and with exponential functions.

Progress Indicator: H.PRF.2a interpreting and rewriting a variety of expressions or functions to solve problems		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.PRF.2a1 Translate an algebraic expression into a word problem	**Seeing Structure in Expressions** A SSE Interpret the structure of expressions.	HSA.SSE.A.1 Interpret expressions that represent a quantity in terms of its context. a) Interpret parts of an expression, such as terms, factors, and coefficients. b) Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret P(1+r)n as the product of P and a factor not depending on P.*

H.PRF.2a2 Factor a quadratic expression.	**Seeing Structure in Expressions** Write expressions in equivalent forms to solve problems	HSA.SSE.B.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.* a) Factor a quadratic expression to reveal the zeros of the function it defines.
H.PRF.2a3 Given a quadratic expression, explain the meaning of the zeros graphically. That is for an expression (x – a) (x – c), a and c correspond to the x-intercepts (if a and c are real).	**Seeing Structure in Expressions** Write expressions in equivalent forms to solve problems	HSA.SSE.B.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.* a) Factor a quadratic expression to reveal the zeros of the function it defines.
H.PRF.2a4 Use the formula to solve real world problems such as calculating the height of a tree after n years given the initial height of the tree and the rate the tree grows each year.	**Seeing Structure in Expressions** Write expressions in equivalent forms to solve problems	HSA.SSE.B.4 Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. *For example, calculate mortgage payments.**
H.PRF.2a5 Rewrite rational expressions, a(x)/b(x), in the form q(x) + r(x)/b(x) by using factoring, long division, or synthetic division.	**Arithmetic with Polynomials and Rational Expressions** Rewrite rational expressions	HSA.APR.D.6 Rewrite simple rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or, for the more complicated examples, a computer algebra system.
H.PRF.2a6 Write and use a system of equations and/or inequalities to solve a real world problem.	**Creating Equations** Create equations that describe numbers or relationships	HSA.CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. *For example, represent*

		inequalities describing nutritional and cost constraints on combinations of different foods.
Progress Indicator: H.PRF.2b creating equations and inequalities (in one or two variables) and use them to solve problems and graph solutions		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.PRF.2b1 Translate a real-world problem into a one variable equation	**Creating Equations** A CED Create equations that describe numbers or relationships.	HSA-CED.A.1 Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*
H.PRF.2b2 Solve equations with one or two variables using equations or graphs	**Reasoning with Equations and Inequalities** A REI Understand solving equations as a process of reasoning and explain the reasoning. A REI Solve equations and inequalities in one variable. **Creating Equations** A CED Create equations that describe numbers and relationships.	HSA-REI.A.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. HSA-REI.B.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. HSA-CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
H.PRF.2b3 Transform a quadratic equation written in standard form to an equation in vertex form (x - p) = q 2 by completing the square.	**Reasoning with Equations and Inequalities** A REI Solve equations and inequalities in	HSA.REI.B.4 Solve quadratic equations in one variable. a) Use the method of completing the square

	one variable.	to transform and quadratic equation in x into an equation of the form $(x – p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.
H.PRF.2b4 Derive the quadratic formula by completing the square on the standard form of a quadratic equation.	**Reasoning with Equations and Inequalities** A REI Solve equations and inequalities in one variable.	HSA.REI.B.4 Solve quadratic equations in one variable. a) Use the method of completing the square to transform and quadratic equation in x into an equation of the form $(x – p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.
H.PRF.2b5 Solve quadratic equations in one variable by simple inspection, taking the square root, factoring, and completing the square.	**Reasoning with Equations and Inequalities** A REI Solve equations and inequalities in one variable.	HSA.REI.B.4 Solve quadratic equations in one variable. b) Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.
H.PRF.2b6 Solve systems of equations using the elimination method (sometimes called linear combinations).	**Reasoning with Equations and Inequalities** Solve systems of equations	HSA.REI.C.5 Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
H.PRF.2b7 Solve a system of equations by substitution (solving for one variable	**Reasoning with Equations and Inequalities**	HSA.REI.C.5 Prove that, given a system of two equations in two variables, replacing

in the first equation and substitution it into the second equation).	Solve systems of equations	one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.
H.PRF.2b8 Solve systems of equations using graphs.	**Reasoning with Equations and Inequalities** Solve systems of equations	HSA.REI.C.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
H.PRF.2b9 Solve a system containing a linear equation and a quadratic equation in two variables graphically and symbolically.	**Reasoning with Equations and Inequalities** Solve systems of equations	HSA.REI.C.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line $y = –3x$ and the circle $x^2 + y^2 = 3$.
H.PRF.2b10 Understand that all solutions to an equation in two variables are contained on the graph of that equation.	**Reasoning with Equations and Inequalities** Represent and solve equations and inequalities graphically	HSA.REI.D.10 Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
H.PRF.2b11 Graph the solutions to a linear inequality in two variables as a half-plane, excluding the boundary for non-inclusive inequalities.	**Reasoning with Equations and Inequalities** Represent and solve equations and inequalities graphically	HSA.REI.D.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.
H.PRF.2b12 Graph the solution set to a system of linear inequalities in two variables as the intersection of their corresponding half-planes.	**Reasoning with Equations and Inequalities** Represent and solve equations and inequalities graphically	HSA.REI.D.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the

		intersection of the corresponding half-planes.
Progress Indicator: H.PRF. 2c using trends that follow a pattern and are described mathematically to make generalizations or predictions		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.PRF. 2c1 Make predictions based on a given model (for example, a weather model, data for athletes over years)	**Linear, Quadratic, and Exponential Models** F LE Construct and compare linear, quadratic, and exponential models and solve problems.	HSF-LE.A.3 Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.
Explanations and clarifications:		
Progress Indicator: H.PRF. 2d: analyzing functions (using technology) by investigating significant characteristics (e.g. intercepts, asymptotes)		
Core Content Connectors: 9-12	**CCRA Domain/Cluster**	**Idaho Content Standard**
H.PRF. 2d1 Explain why the intersection of y = f(x) and y = g(x) is the solution of f(x) = g(x) for any combination of linear or exponential. Find the solution(s) by: Using technology to graph the equations and determine their point of intersection, Using tables of values, or Using successive approximations that become closer and closer to the actual value.	**Reasoning with Equations and Inequalities** Represent and solve equations and inequalities graphically	HSA.REI.D.11 Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.*