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Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Preschool	1. Number and Quantity	P.CC.A. Counting & Cardinality: Know number names and the count sequence.	1. Count verbally or sign to at least 20 by ones.	1. Count up to at least 5 by ones.
Preschool	1. Number and Quantity	P.CC.B. Counting & Cardinality: Recognize the number of objects in a small set.	2. Instantly recognize, without counting, small quantities of up to five objects and say or sign the number.	2. Instantly recognize, without counting, small quantities of up to at least three objects and indicate the number.
Preschool	1. Number and Quantity	P.CC.C. Counting & Cardinality: Understand the relationship between numbers and quantities.	3. Say or sign the number names in order when counting, pairing one number word that corresponds with one object, up to at least 10	3. Identify the number names in order when counting, pairing one number word that corresponds with one object, up to at least 5.
Preschool	1. Number and Quantity	P.CC.C. Counting & Cardinality: Understand the relationship between numbers and quantities.	4. Use the number name of the last object counted to answer "How many?" questions for up to approximately 10 objects.	4. Use the number name of the last object counted to answer "How many?" questions for up to at least 5 objects.
Preschool	1. Number and Quantity	P.CC.C. Counting & Cardinality: Understand the relationship between numbers and quantities.	5. Accurately count as many as five objects in a scattered configuration or out of a collection of more than five objects.	5. Accurately count as many as three objects in a scattered configuration or out of a collection of more than four objects.
Preschool	1. Number and Quantity	P.CC.C. Counting & Cardinality: Understand the relationship between numbers and quantities.	6. Understand that each successive number name refers to a quantity that one is larger.	6. Understand that each successive number name refers to a quantity that is one larger.
Preschool	1. Number and Quantity	P.CC.D. Counting & Cardinality: Compare numbers.	7. Identify whether the number of objects in one group is more than, less than or the same as objects in another group for up to at least five objects.	7. Identify whether the number of objects in one group is more than, less than, or the same as the number of objects in another group. a. Groups should be small and differences should be clear. b. Example comparisons include 1 vs. 4, 5 vs. 2, and 3 vs. 3 (EE.K.CC.6).

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Preschool	1. Number and Quantity	P.CC.D. Counting & Cardinality: Compare numbers.	8. Identify and use numbers related to order or position from first to fifth.	8. Identify and use numbers related to order or position from first to at least third.
Preschool	1. Number and Quantity	P.CC.E. Counting & Cardinality: Associate a quantity with written numerals up to 5 and begin to write numbers.	9. Associate a number of objects with a written numeral 0–5.	9. Associate a number of objects with a written numeral up to at least 3.
Preschool	1. Number and Quantity	P.CC.E. Counting & Cardinality: Associate a quantity with written numerals up to 5 and begin to write numbers.	10. Recognize and, with support, write some numerals up to 10.	10. Recognize and, with support or assistive technology, write some numerals or an approximation of a numeral up to at least 3.
Preschool	2. Algebra and Functions	P.OA.A. Operations & Algebraic Thinking: Understand addition as adding to and understand subtraction as taking away from.	1. Represent addition and subtraction in different ways, such as with fingers, objects, and drawings.	1. Represent addition and subtraction in different ways, such as fingers, objects, and drawings, to add "one more" or "take away one" (EE.K.OA.1).
Preschool	2. Algebra and Functions	P.OA.A. Operations & Algebraic Thinking: Understand addition as adding to and understand subtraction as taking away from.	2. Solve addition and subtraction problems set in simple contexts. Add and subtract up to at least five to or from a given number to find a sum or difference up to 10.	2. Solve addition and subtraction problems set in simple contexts. Add and subtract up to at least two, to or from, a given number to find a sum or difference up to at least 5. a. Examples: "If you have one block and I give you one more, how many will you have?" "If you have three cookies and eat two, how many will you have left?"
Preschool	2. Algebra and Functions	P.OA.A. Operations & Algebraic Thinking: Understand addition as adding to and understand subtraction as taking away from.	3. With adult assistance, begin to use counting on (adding 1 or 2, for example) from the larger number for addition.	3. Begin to use counting on (adding 1 or 2, for example) from the larger number for addition.

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Preschool	2. Algebra and Functions	P.OA.B. Operations & Algebraic Thinking: Understand simple patterns.	4. Fill in missing elements of simple patterns.	4. Recognize a simple pattern by touching, pointing, or saying the pattern in sequence without skipping elements.
Preschool	2. Algebra and Functions	P.OA.B. Operations & Algebraic Thinking: Understand simple patterns.	5. Duplicate simple patterns in a different location than demonstrated, such as making the same alternating color pattern with blocks at a table that was demonstrated on the rug. Extend patterns, such as making an eight-block tower of the same pattern that was demonstrated with four blocks.	5. Duplicate simple patterns in the same location as demonstrated. A. Extend simple patterns. Example: Copy an ABAB pattern and extend it to ABABAB.
Preschool	2. Algebra and Functions	P.OA.B. Operations & Algebraic Thinking: Understand simple patterns.	6. Identify the core unit of sequentially repeating patterns, such as color in a sequence of alternating red and blue blocks.	6. Identify the core unit of sequentially repeating patterns, such as color in a sequence of alternating red and blue blocks.
Preschool	3. Data, Statistics, and Probability	P.MD.A. Measurement & Data: Measure objects by their various attributes using standard and nonstandard measurement and use differences in attributes to make comparisons.	1. Use comparative language, such as shortest, heavier, biggest, or later.	1. Indicate an understanding of comparative language, such as shortest, heavier, biggest, or later.
Preschool	3. Data, Statistics, and Probability	P.MD.A. Measurement & Data: Measure objects by their various attributes using standard and nonstandard measurement and use differences in attributes to make comparisons.	2. Compare or order up to five objects based on their measurable attributes, such as height or weight.	2. Compare or order up to at least three objects based on their measurable attributes, such as height or weight.

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Preschool	3. Data, Statistics, and Probability	P.MD.A. Measurement & Data: Measure objects by their various attributes using standard and nonstandard measurement and use differences in attributes to make comparisons.	3. Measure using the same unit, such as putting together snap cubes to see how tall a book is.	3. Measure using the same unit, such as putting together snap cubes, to see how tall a book is.
Preschool	4. Geometry	P.G.A. Geometry: Identify, describe, compare, and compose shapes.	1. Name and describe shapes in terms of length of sides, number of sides, and number of angles/corners.	1. Indicate an understanding (e.g., by naming or sorting) of differences of shapes in terms of length of sides, number of sides, and number of angles/corners.
Preschool	4. Geometry	P.G.A. Geometry: Identify, describe, compare, and compose shapes.	2. Correctly name basic shapes (circle, square, rectangle, and triangle) regardless of size and orientation.	2. Identify basic shapes (circle, square, rectangle, triangle) having the same orientation and size.
Preschool	4. Geometry	P.G.A. Geometry: Identify, describe, compare, and compose shapes.	3. Analyze, compare, and sort two- and three-dimensional shapes and objects in different sizes. Describe their similarities, differences, and other attributes, such as size and shape.	3. Sort two- and three-dimensional shapes and objects in different sizes based on a countable or measurable attribute (e.g., number of sides, corners).
Preschool	4. Geometry	P.G.A. Geometry: Identify, describe, compare, and compose shapes.	4. Compose simple shapes to form larger shapes.	4. Compose simple shapes to form larger shapes.
Preschool	4. Geometry	P.G.B. Geometry: Explore the positions of objects in space.	5. Understand and use language related to directionality, order, and the position of objects, including up/down and in front/behind.	5. Indicate an understanding of language related to directionality, order, and the position of objects, including up/down and in front/behind.
Preschool	4. Geometry	P.G.B. Geometry: Explore the positions of objects in space.	6. Correctly follow directions involving their own position in space, such as "Stand up" and "Move forward."	6. Correctly follow directions involving their own position in space, such as "stand up" and "move forward."

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Kindergarten	1. Number and Quantity	K.CC.A. Counting & Cardinality: Use number names and the count sequence.	1. Count to 100 by ones and by tens. (CCSS: K.CC.A.1)	1. Count up to at least 10 by ones.
Kindergarten	1. Number and Quantity	K.CC.A. Counting & Cardinality: Use number names and the count sequence.	2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1). (CCSS: K.CC.A.2)	2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
Kindergarten	1. Number and Quantity	K.CC.A. Counting & Cardinality: Use number names and the count sequence.	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). (CCSS: K.CC.A.3)	3. Identify and/or write numbers from 0 up to at least 10. a. Represent a number of objects with a written numeral 0 up to at least 10 (with 0 representing a count of no objects).
Kindergarten	1. Number and Quantity	K.CC.B. Counting & Cardinality: Count to determine the number of objects.	4. Apply the relationship between numbers and quantities and connect counting to cardinality. (CCSS: K.CC.B.4)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. (CCSS: K.CC.B.4.a) 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. (CCSS: K.CC.B.4.b) Understand that each successive number name refers to a quantity that is one larger. (CCSS: K.CC.B.4.c)	4. Apply the relationship between numbers and quantities and connect counting to cardinality. a. When counting objects, say or indicate 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. b. Understand that the last number name said or indicated tells the number of objects counted.

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Kindergarten	1. Number and Quantity	K.CC.B. Counting & Cardinality: Count to determine the number of objects.	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. (CCSS: K.CC.5)	5. Count to answer "how many?" questions about up to at least 10 things arranged in a line or a rectangular array. a. Given a number from 1 to up to at least 10, count out that many objects.
Kindergarten	1. Number and Quantity	K.CC.C. Counting & Cardinality: Compare numbers.	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. (Include groups with up to 10 objects.) (CCSS: K.CC.6)	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 (when the quantities are clearly different), e.g., by using matching and counting strategies (Include groups with up to at least 10 objects.) (EE:K.C.C.6).
Kindergarten	1. Number and Quantity	K.CC.C. Counting & Cardinality: Compare numbers.	7. Compare two numbers between 1 and 10 presented as written numerals. (CCSS: K.CC.7)	7. Compare two numbers between 1 and up to at least 5 written as numerals.
Kindergarten	1. Number and Quantity	K.NBT.A. Number & Operations in Base Ten: Work with numbers 11–19 to gain foundations for place value.	1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. (CCSS: K.NBT.A.1)	1. Recognize that when a number of objects fills a ten frame, it makes a number called ten.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Kindergarten	2. Algebra and Functions	K.OA.A. Operations & Algebraic Thinking: Model and describe addition as putting together and adding to, and subtraction as taking apart and taking from, using objects or drawings.	1. Represent addition and subtraction with objects, fingers, mental images, drawings (drawings need not show details, but should show the mathematics in the problem), sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (CCSS: K.OA.A.1)	1. Represent addition (e.g., "putting together") or subtraction (e.g., "taking from") in everyday activities (EE.K.OA.A.1).
Kindergarten	2. Algebra and Functions	K.OA.A. Operations & Algebraic Thinking: Model and describe addition as putting together and adding to, and subtraction as taking apart and taking from, using objects or drawings.	2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. (CCSS: K.OA.A.2)	1. Solve addition and subtraction word problems (given orally, visually, or as objects). a. Add and subtract up to at least 5, e.g., by using objects or drawings to represent the problem.
Kindergarten	2. Algebra and Functions	K.OA.A. Operations & Algebraic Thinking: Model and describe addition as putting together and adding to, and subtraction as taking apart and taking from, using objects or drawings.	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). (CCSS: K.OA.A.3)	3. Decompose numbers up to at least 5 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).
Kindergarten	2. Algebra and Functions	5. D40:D41Add and subtract within 5, with or without manipulatives.	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. (CCSS: K.OA.A.4)	4. For any number from 1 to 4, find the number that makes 5 when added to the given number, e.g., by using objects or drawings.

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Kindergarten	2. Algebra and Functions	K.OA.A. Operations & Algebraic Thinking: Model and describe addition as putting together and adding to, and subtraction as taking apart and taking from, using objects or drawings.	5. D40:D41Fluently add and subtract within 5. (CCSS: K.OA.A.5)	5. Add and subtract within 5, with or without manipulatives.
Kindergarten	3. Data, Statistics, and Probability	K.MD.A. Measurement & Data: Describe and compare measurable attributes.	1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (CCSS: K.MD.A.1)	1. Demonstrate an understanding of the meaning of a measurable attribute of an object, such as length or weight.
Kindergarten	3. Data, Statistics, and Probability	K.MD.A. Measurement & Data: Describe and compare measurable attributes.	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. (CCSS: K.MD.A.2)	2. Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute. a. For example, directly compare the heights of two children and identify one child as taller/shorter.
Kindergarten	3. Data, Statistics, and Probability	K.MD.B. Measurement & Data: Classify objects and count the number of objects in each category.	3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Limit category counts to be less than or equal to 10.) (CCSS: K.MD.B.3)	3. Classify objects into at least two categories according to an attribute (big/small, heavy/light). (Category counts should be up to at least 5).
Kindergarten	4. Geometry	K.G.A. Geometry: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).	1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. (CCSS: K.G.A.1)	1. Identify objects in the environment using names of shapes, and identify the relative positions of these objects using terms such as above, below, and next to.

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Kindergarten	4. Geometry	K.G.A. Geometry: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).	2. Correctly name shapes regardless of their orientations or overall size. (CCSS: K.G.A.2)	2. Identify shapes (circle, square, rectangle, and triangle) regardless of their orientations or overall size.
Kindergarten	4. Geometry	K.G.A. Geometry: Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).	3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). (CCSS: K.G.A.3)	3. Indicate an understanding of the difference between shapes that are two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
Kindergarten	4. Geometry	K.G.B. Geometry: Analyze, compare, create, and compose shapes.	4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). (CCSS: K.G.B.4)	4. Identify two- and three-dimensional shapes and indicate their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
Kindergarten	4. Geometry	K.G.B. Geometry: Analyze, compare, create, and compose shapes.	5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. (CCSS: K.G.B.5)	5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls).
Kindergarten	4. Geometry	K.G.B. Geometry: Analyze, compare, create, and compose shapes.	6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?" (CCSS: K.G.B.6)	6. Compose at least two simple shapes to form a larger shape. For example, "Can you join these two triangles with full sides touching to make a rectangle?"

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First Grade	1. Number and Quantity	1. NBT.A. Number & Operations in Base Ten: Extend the counting sequence.	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. (CCSS: 1.NBT.A.1)	1. Count to up to at least 20, starting at any number less than 20. a. In this range, identify numerals and represent (by writing, matching, or otherwise indicating) a number of objects with a written numeral.
First Grade	1. Number and Quantity	1. NBT.B. Number & Operations in Base Ten: Understand place value.	2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: (CCSS: 1.NBT.B.2)10 can be thought of as a bundle of ten ones; called a "ten." (CCSS: 1.NBT.B.2.a) The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. (CCSS: 1.NBT.B.2.b) The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). (CCSS: 1.NBT.B.2.c)	2. Understand that the two digits of the numbers 10 through 20 represent amounts of tens and ones. a. Understand the following as special cases: 10 can be thought of a bundle of ten ones, called a ten, and the numbers 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. b. Decompose numbers less than ten in more than one way.
First Grade	1. Number and Quantity	1. NBT.B. Number & Operations in Base Ten: Understand place value.	3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <. (CCSS: 1.NBT.B.3)	3. Compare two numbers from 1 up to at least 20 based on meanings of the tens and ones digits. a. For example, 20 is greater than 15 because two tens is bigger than one ten and a five.

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First Grade	1. Number and Quantity	1. NBT.C. Number & Operations in Base Ten: Use place value understanding and properties of operations to add and subtract.	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. (CCSS: 1.NBT.C.4)	4. Add within 10 using concrete models or drawings. a. Relate the strategy to a written method and explain or indicate the reasoning used.
First Grade	1. Number and Quantity	1. NBT.C. Number & Operations in Base Ten: Use place value understanding and properties of operations to add and subtract.	5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. (CCSS: 1.NBT.C.5)	5. Given a single digit number, find 10 more than the number. Given a number in the range 10-20, find 10 less than the number.
First Grade	1. Number and Quantity	1. NBT.C. Number & Operations in Base Ten: Use place value understanding and properties of operations to add and subtract.	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. (CCSS: 1.NBT.C.6)	6. Subtract multiples of 5 in the range 5-20 from multiples of 5 in the range 5-20 (e.g., 20-10, 15-10, 10-5), using concrete models or drawings. a. Relate the strategy to a written method. Example: Given 15 objects, have students subtract 10 objects and match that operation to a card with "15 - 10 = 5" written on it.

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First Grade	2. Algebra and Functions	1. OA.A. Operations & Algebraic Thinking: Represent and solve problems involving addition and subtraction.	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. (CCSS: 1.OA.A.1)	1. Use addition and subtraction within at least 10 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing by using objects and drawings.
First Grade	2. Algebra and Functions	1. OA.A. Operations & Algebraic Thinking: Represent and solve problems involving addition and subtraction.	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. (CCSS: 1.OA.A.2)	2. Solve word problems (given orally, visually, or as objects) that call for addition of three whole numbers whose sum is up to at least 10 by using objects and drawings.
First Grade	2. Algebra and Functions	1. OA.B. Operations & Algebraic Thinking: Understand and apply properties of operations and the relationship between addition and subtraction.	3. Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) 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.) (CCSS: 1.OA.B.3)	3. Apply properties of operations as strategies to add and subtract (Students need not use formal terms for these properties). a. Examples: If 4 + 3 = 7 is known, then 3 + 4 = 7 is also known. (Commutative property of addition). To add 5 + 2 + 3, the second two numbers can be added to make a 5, so 5 + 2 + 3 = 5 + 5 = 10 (Associative property of addition).

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First Grade	2. Algebra and Functions	1. OA.B. Operations & Algebraic Thinking: Understand and apply properties of operations and the relationship between addition and subtraction.	4. Understand subtraction as an unknown-addend problem. For example, subtract 10 - 8 by finding the number that makes 10 when added to 8. (CCSS: 1.OA.B.4)	4. Understand subtraction as an unknown-added problem. a. For example, subtract 5 - 4 by finding the number that makes 5 when added to 4.
First Grade	2. Algebra and Functions	1. OA.C. Operations & Algebraic Thinking: Add and subtract within 20.	5. Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). (CCSS: 1.OA.C.5)	5. Relate counting to addition and subtraction using concrete models or visual representations to indicate the number that results when adding or subtracting one.
First Grade	2. Algebra and Functions	1. OA.C. Operations & Algebraic Thinking: Add and subtract within 20.	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). (CCSS: 1.OA.C.6)	6. Add and subtract within 20 using objects, drawings, ten frames, and/or written methods for problems with sums and differences of ten (e.g., 5 + 5, 6 + 4, 2 + 8, 14 - 4, 17 -7) as a foundation for operations involving place value.

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First Grade	2. Algebra and Functions	1. OA.D. Operations & Algebraic Thinking: Work with addition and subtraction equations.	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. (CCSS: 1.OA.D.7)	7. Understand the meaning of the equal sign, and use models or other strategies to determine if equations involving addition and subtraction up to at least 5 are true or false. For example, Does 1 + 1 = 3? Is 4 - 2 = 2 true or false?
First Grade	2. Algebra and Functions	1. OA.D. Operations & Algebraic Thinking: Work with addition and subtraction equations.	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 = ___. (CCSS: 1.OA.D.8)	8. Determine the unknown whole number in an addition or subtraction equation relating three whole numbers whose sum is up to at least 10. For example, determine the unknown number that makes the equation true in each of the equations 1 + ___= 3, 4 = 6 -___, ___ + 2 = 4.
First Grade	3. Data, Statistics, and Probability	1. MD.A. Measurement & Data: Measure lengths indirectly and by iterating length units.	1. Order three objects by length; compare the lengths of two objects indirectly by using a third object. (CCSS: 1.MD.A.1)	1. Order three objects by length using direct comparisons.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
First Grade	3. Data, Statistics, and Probability	1. MD.A. Measurement & Data: Measure lengths indirectly and by iterating length units.	2. Express the length of an object as a whole number of length units, 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. (CCSS: 1.MD.A.2)	2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end. a. Limit to contexts where the object being measured is spanned by a whole number of fewer than 5 length units with no gaps or overlaps. b. Examples: "The paper is three pencils long," "The book is 5 blocks wide."
First Grade	3. Data, Statistics, and Probability	1.MD.B Measurement & Data: Tell and write time.	3. Tell and write time in hours and half-hours using analog and digital clocks. (CCSS: 1.MD.B.3)	3. Demonstrate an understanding of the terms morning, afternoon, day, and night.
First Grade	3. Data, Statistics, and Probability	1. MD.C. Measurement & Data: Represent and interpret data.	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. (CCSS: 1.MD.C.4)	4. Organize data into two categories by sorting. a. Answer questions about the number of data points in each category. (Limit category counts to be less than or equal to 10) (EE.1.MD.C.4).
First Grade	4. Geometry	1. G.A. Geometry: Reason with shapes and their attributes.	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. (CCSS: 1.G.A.1)	1. Distinguish between defining attributes (e.g., the number of sides and angles) versus non-defining attributes (e.g., color, orientation, overall size) of circles, squares, rectangles, and triangles.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
First Grade	4. Geometry	1. G.A. Geometry: Reason with shapes and their attributes.	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. (Students do not need to learn formal names, such as "right rectangular prisms.") (CCSS: 1.G.A.2)	2. Compose two or more two-dimensional shapes (rectangles, squares, triangles, and half-circles) to create a composite shape. a. For example, join two half-circles to make a circle.
First Grade	4. Geometry	1. G.A. Geometry: Reason with shapes and their attributes.	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. (CCSS: 1.G.A.3)	3. Partition circles and rectangles into two equal shares and demonstrate an understanding of "half."

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Second Grade	1. Number and Quantity	2. NBT.A. Number & Operations in Base Ten: Understand place value.	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: (CCSS: 2.NBT.A.1)100 can be thought of as a bundle of ten tens &mash; called a "hundred." (CCSS: 2.NBT.A.1.a) 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 tons and 0 ones). (CCSS: 2.NBT.A.1.b)	1. Understand that the two digits of a two-digit number represent amounts of tens and ones; e.g., 37 equals 3 tons and 7 ones. a. Understand the following as special cases: 10 can be thought of as a bundle of ten ones, called a ten; and the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, and nine tens. b. Decompose numbers less than 20 in more than one way.
Second Grade	1. Number and Quantity	2. NBT.A. Number & Operations in Base Ten: Understand place value.	2. Count within 1000; skip-count by 5s, 10s, and 100s. (CCSS: 2.NBT.A.2)	2. Count within 50. a. Skip count by fives and tens.
Second Grade	1. Number and Quantity	2. NBT.A. Number & Operations in Base Ten: Understand place value.	3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. (CCSS: 2.NBT.A.3)	3. Understand and represent numbers to 50 with objects, written representations, and/or numerals.
Second Grade	1. Number and Quantity	2. NBT.A. Number & Operations in Base Ten: Understand place value.	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. (CCSS: 2.NBT.A.4)	4. Compare two two-digit numbers less than or equal to 50 based on the meanings of the tens and ones digits.
Second Grade	1. Number and Quantity	2. NBT.B. Number & Operations in Base Ten: Use place value understanding and properties of operations to add and subtract.	5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. (CCSS: 2.NBT.B.5)	5. Add and subtract within 20 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Second Grade	1. Number and Quantity	2. NBT.B. Number & Operations in Base Ten: Use place value understanding and properties of operations to add and subtract.	6. Add up to four two-digit numbers using strategies based on place value and properties of operations. (CCSS: 2.NBT.B.6)	6. Add up to three two-digit numbers using strategies based on place value and properties of operations. a. Limit sums to 50 or less.
Second Grade	1. Number and Quantity	2. NBT.B. Number & Operations in Base Ten: Use place value understanding and properties of operations to add and subtract.	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. (CCSS: 2.NBT.B.7)	7. Add and subtract within 50, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. a. Relate the strategy to a written method. b. Understand that in adding or subtracting two-digit numbers, one adds or subtracts tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens.
Second Grade	1. Number and Quantity	2. NBT.B. Number & Operations in Base Ten: Use place value understanding and properties of operations to add and subtract.	8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. (CCSS: 2.NBT.B.8)	8. Mentally add 1 or 10 to a given number 1-50, and mentally subtract 1 or 10 from a given number 1-50.
Second Grade	1. Number and Quantity	2. NBT.B. Number & Operations in Base Ten: Use place value understanding and properties of operations to add and subtract.	9. Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects.) (CCSS: 2.NBT.B.9)	9. Demonstrate an understanding of the meanings of symbols in addition and subtraction situations, including the "+" sign (i.e., combine, plus, add), "-" sign (i.e., separate, subtract, take away), and the "=" sign (equal).

MATH

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Second Grade	2. Algebra and Functions	2. OA.A. Operations & Algebraic Thinking: Represent and solve problems involving addition and subtraction.	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. (see Appendix, Table 1) (CCSS: 2.OA.A.1)	1. Use addition and subtraction within 20 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing by using objects, drawings, or other written methods.
Second Grade	2. Algebra and Functions	2. OA.B. Operations & Algebraic Thinking: Add and subtract within 20.	2. Fluently add and subtract within 20 using mental strategies. (See 1.OA.C.6 for a list of strategies.) By end of Grade 2, know from memory all sums of two one-digit numbers. (CCSS: 2.OA.B.2)	2. Add and subtract within 10 using mental strategies.
Second Grade	2. Algebra and Functions	2. OA.C. Operations & Algebraic Thinking: Work with equal groups of objects to gain foundations for multiplication.	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. (CCSS: 2.OA.C.3)	3. Determine whether a group of objects (up to 10) has an odd or even number of members, e.g., by pairing objects or counting them by 2s.
Second Grade	2. Algebra and Functions	2. OA.C. Operations & Algebraic Thinking: Work with equal groups of objects to gain foundations for multiplication.	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. (CCSS: 2.OA.C.4)	4. Use addition to find the total number of objects arranged within equal groups up to a total of 10.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Second Grade	3. Data, Statistics, and Probability	2. MD.A. Measurement & Data: Measure and estimate lengths in standard units.	1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. (CCSS: 2.MD.A.1)	1. Identify appropriate tools for measuring length, such as rulers, yardsticks, meter sticks, and measuring tapes.
Second Grade	3. Data, Statistics, and Probability	2. MD.A. Measurement & Data: Measure and estimate lengths in standard units.	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. (CCSS: 2.MD.A.2)	2. Measure the length of an object using a tool marked with whole-number standard units, such as a ruler marked only for whole inches.
Second Grade	3. Data, Statistics, and Probability	2. MD.A. Measurement & Data: Measure and estimate lengths in standard units.	3. Estimate lengths using units of inches, feet, centimeters, and meters. (CCSS: 2.MD.A.3)	3. Estimate lengths using non-standard units. Examples: "I think the student is about 5 books tall." "I'm guessing the desk is 3 pieces of paper wide."
Second Grade	3. Data, Statistics, and Probability	2. MD.A. Measurement & Data: Measure and estimate lengths in standard units.	4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. (CCSS: 2.MD.A.4)	4. Compare the lengths of two objects indirectly by using a third object.
Second Grade	3. Data, Statistics, and Probability	2. MD.B. Measurement & Data: Relate addition and subtraction to length.	5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. (CCSS: 2.MD.B.5)	5. Use addition and subtraction within 20 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Second Grade	3. Data, Statistics, and Probability	2. MD.B. Measurement & Data: Relate addition and subtraction to length.	6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, \lots, and represent whole-number sums and differences within 100 on a number line diagram. (CCSS: 2.MD.B.6)	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 20 on a number line diagram.
Second Grade	3. Data, Statistics, and Probability	2. MD.C. Measurement & Data: Work with time and money.	7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. (CCSS: 2.MD.C.7)	7. Tell time on analog and digital clocks to the nearest hour.
Second Grade	3. Data, Statistics, and Probability	2. MD.C. Measurement & Data: Work with time and money.	8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using and ¢ symbols appropriately. Example: If you have two dimes and three pennies, how many cents do you have? (CCSS: 2.MD.C.8)	8. Identify and sort coins (quarters, dimes, nickels, and pennies) and understand that money has value.
Second Grade	3. Data, Statistics, and Probability	2. MD.D. Measurement & Data: Represent and interpret data.	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. (CCSS: 2.MD.D.9)	9. Generate measurement data by measuring lengths of several objects to the nearest whole unit. a. Match the measurement data to a given line plot, where the horizontal scale is marked off in whole-number units.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Second Grade	3. Data, Statistics, and Probability	2. MD.D. Measurement & Data: Represent and interpret data.	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 (see Appendix, Table 1) using information presented in a bar graph. (CCSS: 2.MD.D.10)	10. Create a picture graph to represent a data set with two categories.
Second Grade	4. Geometry	2. G.A. Geometry: Reason with shapes and their attributes.	1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. (Sizes are compared directly or visually, not compared by measuring.) Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (CCSS: 2.G.A.1)	1. Recognize and create circles, squares, rectangles, and triangles having specified attributes, such as a given number of angles or a given number of faces. Example: Draw and name a shape that has three angles and three sides.
Second Grade	4. Geometry	2. G.A. Geometry: Reason with shapes and their attributes.	2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. (CCSS: 2.G.A.2)	2. Partition a rectangle into up to 5 rows and up to 5 columns of same-size squares and count to find the total number of them.
Second Grade	4. Geometry	2. G.A. Geometry: Reason with shapes and their attributes.	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. (CCSS: 2.G.A.3)	3. Partition circles and rectangles into two or four equal shares, describe the shares using the words halves and quarters, and describe the whole as two halves.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	1. Number and Quantity	3. NBT.A. Number & Operations in Base Ten: Use place value understanding and properties of operations to perform multi-digit arithmetic. A range of algorithms may be used.	1. Use place value understanding to round whole numbers to the nearest 10 or 100. (CCSS: 3.NBT.A.1)	1. Use place value understanding to round whole numbers 1-50 to the nearest 10.
Third Grade	1. Number and Quantity	3. NBT.A. Number & Operations in Base Ten: Use place value understanding and properties of operations to perform multi-digit arithmetic. A range of algorithms may be used.	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. (CCSS: 3.NBT.A.2)	2. Add and subtract within 50 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
Third Grade	1. Number and Quantity	3. NBT.A. Number & Operations in Base Ten: Use place value understanding and properties of operations to perform multi-digit arithmetic. A range of algorithms may be used.	3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9 x 80, 5 x 60) using strategies based on place value and properties of operations. (CCSS: 3.NBT.A.3)	3. Multiply one-digit whole numbers by 10 to produce products in the range 10-100 (e.g., 4 x 10, 10 x 10) using strategies based on place value and properties of operations.
Third Grade	1. Number and Quantity	3. NF.A. Number & Operations—Fractions: Develop understanding of fractions as numbers.	1. Describe 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. (CCSS: 3.NF.A.1)	1. Describe a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b parts. a. Limit b to be 2, 3, or 4 parts.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	1. Number and Quantity	3. NF.A. Number & Operations—Fractions: Develop understanding of fractions as numbers.	2. Describe a fraction as a number on the number line; represent fractions on a number line diagram. (CCSS: 3.NF.A.2)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. (CCSS: 3.NF.A.2.a) 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. (CCSS: 3.NF.A.2.b)	2. Describe a fraction as a number on the number line. a. Represent 1/2, 1/3, 2/3, 1/4, and 3/4 on the number line.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	1. Number and Quantity	3. NF.A. Number & Operations—Fractions: Develop understanding of fractions as numbers.	3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. (CCSS: 3.NF.A.3)Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. (CCSS: 3.NF.A.3.a) 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. (CCSS: 3.NF.A.3.b) 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. (CCSS: 3.NF.A.3.c) 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. (CCSS: 3.NF.A.3.d)	3. Explain equivalence of 1/2 and 2/4 using a number line as well as part/whole models.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	2. Algebra and Functions	3. OA.A. Operations & Algebraic Thinking: Represent and solve problems involving multiplication and division.	1. Interpret products of whole numbers, e.g., interpret 5 x 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 x 7. (CCSS: 3.OA.A.1)	1. Interpret products of whole numbers, e.g., interpret 2 x 4 as the total number of objects in 2 groups of 4 objects each. Limit the whole numbers to numbers less than or equal to 5.
Third Grade	2. Algebra and Functions	3. OA.A. Operations & Algebraic Thinking: Represent and solve problems involving multiplication and division.	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. (CCSS: 3.OA.A.2)	2. Interpret whole-number quotients of whole numbers, (e.g., interpret 10 divided by 2 as the number of objects in each share when 10 objects are partitioned equally into 2 groups, or as a number of shares when 10 objects are partitioned into equal shares of 2 objects each). a. Limit dividends to numbers less than or equal to 12 and divisors less than or equal to 6.
Third Grade	2. Algebra and Functions	3. OA.A. Operations & Algebraic Thinking: Represent and solve problems involving multiplication and division.	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. (see Appendix, Table 2) (CCSS: 3.OA.A.3)	3. Use multiplication and division within 12 to solve problems in situations involving equal groups, arrays, and measurement quantities (e.g., by using objects, drawings, and other written ways to represent the problem). a. Use repeated addition as a multiplication strategy and repeated subtraction as a division strategy.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	2. Algebra and Functions	3. OA.A. Operations & Algebraic Thinking: Represent and solve problems involving multiplication and division.	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 x ___= 48, 5= ___ ÷ 3, 6 x 6 = ___(CCSS: 3.OA.A.4)	4. Determine the unknown whole number in a multiplication or division equation given a rectangular array with either an unknown number of rows or columns or an unknown total. a. Limit the product to 12 or fewer.
Third Grade	2. Algebra and Functions	3. OA.B. Operations & Algebraic Thinking: Apply properties of multiplication and the relationship between multiplication and division.	5. Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties.) Examples: If 6 x 4 = 24 is known, then 4 x 6 = 24 is also known. (Commutative property of multiplication.) 3 x 5 x 2 can be found by 3 x 5 = 15, then 15 x 2 = 30, or by 5 x 2 = 10, then 3 x times 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.) (CCSS: 3.OA.B.5)	5. Apply properties of operations as strategies to multiply and divide. (Students need not use formal terms for these properties). a. Examples: If 3 x 2 = 6 is known, then 2 x 3 = 6 is also known. (Commutative property of multiplication). 2 x 3 x 1 can be found by 2 x 3 = 6, then 6 x 1 = 6, or by 3 x 1 = 3, then 2 x 3 = 6. (Associative property of multiplication).
Third Grade	2. Algebra and Functions	3. OA.B. Operations & Algebraic Thinking: Apply properties of multiplication and the relationship between multiplication and division.	6. Interpret division as an unknown-factor problem. For example, find 32 ÷ 8 by finding the number that makes 32 when multiplied by 8. (CCSS: 3.OA.B.6)	6. Interpret division as an unknown factor problem. a. For example, find 12 divided by 3 by finding the number that makes 12 when multiplied by 3.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	2. Algebra and Functions	3. OA.C. Operations & Algebraic Thinking: Multiply and divide within 100.	7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 x times 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers. (CCSS: 3.OA.C.7)	7. Multiply and divide within 12, using strategies such as the relationship between multiplication and division (e.g., knowing that 2 x 6 = 12, one knows 12 divided by 2 is 6) or properties of operations.
Third Grade	2. Algebra and Functions	3. OA.D. Operations & Algebraic Thinking: Solve problems involving the four operations, and identify and explain patterns in arithmetic.	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. (This evidence outcome is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order of operations when there are no parentheses to specify a particular order). (CCSS: 3.OA.D.8)	8. Use addition and subtraction within 50 to solve one- and two-step word problems. Use multiplication and subtraction within 12 to solve one-step word problems. (This EEO includes problems involving whole number calculations.)

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	2. Algebra and Functions	3. OA.D. Operations & Algebraic Thinking: Solve problems involving the four operations, and identify and explain patterns in arithmetic.	9. Identify arithmetic patterns (including patterns in the addition table or multiplication table) and explain those 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. (CCSS: 3.OA.D.9)	9. Identify arithmetic patterns (including patterns in the addition table or multiplication table) equivalent to counting by 2s, 3s, 4s, 5s, and 10s (EE:3.A.D.9).
Third Grade	3. Data, Statistics, and Probability	3. MD.A. Measurement & Data: Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	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. (CCSS: 3.MD.A.1)	1. Tell time to the nearest half hour on analog and digital clocks.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	3. Data, Statistics, and Probability	3. MD.A. Measurement & Data: Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). (This excludes compound units such as command finding the geometric volume of a container.) 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. (This excludes multiplicative comparison problems, such as problems involving notions of "times as much." See Appendix, Table 2.) (CCSS: 3.MD.A.2)	2. Identify appropriate tools for measuring liquid volumes, like measuring cups and spoons, and for measuring masses, such as scales and balances.
Third Grade	3. Data, Statistics, and Probability	3. MD.B. Measurement & Data: Represent and interpret data.	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. (CCSS: 3.MD.B.3)	3. Use a scaled picture graph and a scaled bar graph to answer "how many" or "how many more/less" questions.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	3. Data, Statistics, and Probability	3. MD.B. Measurement & Data: Represent and interpret data.	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. (CCSS: 3.MD.B.4)	4. Generate measurement data by measuring lengths using rulers, yardsticks, meter sticks, and measuring tapes marked with units and half-units. a. Match the measurement data to a given line plot, where the horizontal scale is marked off in whole-number and half-number units.
Third Grade	3. Data, Statistics, and Probability	3. MD.C. Measurement & Data: Geometric measurement: Use concepts of area and relate area to multiplication and to addition.	5. Recognize area as an attribute of plane figures and understand concepts of area measurement. (CCSS: 3.MD.C.5)A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. (CCSS: 3.MD.C.5.a) A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units. (CCSS: 3.MD.C.5.b)	5. Recognize area as an attribute of plane figures and associate unit square grids with measuring area.
Third Grade	3. Data, Statistics, and Probability	3. MD.C. Measurement & Data: Geometric measurement: Use concepts of area and relate area to multiplication and to addition.	6. Measure areas by counting unit squares (square cm, square m, square in, square ft., and improvised units). (CCSS: 3.MD.C.6)	6. Measure areas by counting unit squares (square cm, square in) marked on a figure to measure.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	3. Data, Statistics, and Probability	3. MD.C. Measurement & Data: Geometric measurement: Use concepts of area and relate area to multiplication and to addition.	7. Use concepts of area and relate area to the operations of multiplication and addition. (CCSS: 3.MD.C.7)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. (CCSS: 3.MD.C.7.a) Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems and represent whole-number products as rectangular areas in mathematical reasoning. (CCSS: 3.MD.C.7.b) 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 x b and a x c. Use area model to represent the distributive property in mathematical reasoning. (CCSS: 3.MD.C.7.c) Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems. (CCSS: 3.MD.C.7.d)	7. Use concepts of area and relate area to the operations of multiplication and addition. a. Find the area of a rectangle by tiling it, and show that the area is the same as would be found by multiplying the side lengths. b. Find the area of the rectangle should not exceed 12 square units.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Third Grade	3. Data, Statistics, and Probability	3. MD.D. Measurement & Data: Geometric measurement: Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	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. (CCSS: 3.MD.D.8)	8. Solve real-world and mathematical problems involving perimeters of squares, rectangles, and triangles, including finding the perimeter given the side lengths.
Third Grade	4. Geometry	3. G.A. Geometry: Reason with shapes and their attributes.	1. Explain that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. (CCSS: 3.G.A.1)	1. Identify examples of shapes that share some attributes (e.g., squares and rectangles have four sides) but do not share other attributes (e.g., squares have four equal sides but rectangles don't necessarily have four equal sides).
Third Grade	4. Geometry	3. G.A. Geometry: Reason with shapes and their attributes.	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 \frac{1}{4} of the area of the shape. (CCSS: 3.G.A.2)	2. Partition circles and rectangles into parts with 2, 3, or 4 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 1/4 of the area of the shape.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	1. Number and Quantity	4. NBT.A. Number & Operations in Base Ten: Generalize place value understanding for multi-digit whole numbers.	1. Explain 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. (CCSS: 4.NBT.A.1)	1. Recognize that in a two-digit whole number, a digit in the tens place represents ten times what it represents in the place to its right. a. For example, in the number 55 the five in the tens place (50) is ten times the value of the five in the ones place (5).
Fourth Grade	1. Number and Quantity	4. NBT.A. Number & Operations in Base Ten: Generalize place value understanding for multi-digit whole numbers.	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. (CCSS: 4.NBT.A.2)	2. Indicate an understanding of two-digit whole numbers using base-ten numerals, number names, and expanded form. a. Compare two two-digit whole numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
Fourth Grade	1. Number and Quantity	4. NBT.A. Number & Operations in Base Ten: Generalize place value understanding for multi-digit whole numbers.	3. Use place value understanding to round multi-digit whole numbers to any place. (CCSS: 4.NBT.A.3)	3. Use place value understanding to round whole numbers 1-100 to the nearest 10.
Fourth Grade	1. Number and Quantity	4. NBT.B. Number & Operations in Base Ten: Use place value understanding and properties of operations to perform multi-digit arithmetic.	4. Fluently add and subtract multi-digit whole numbers using the standard algorithm. (CCSS: 4.NBT.B.4)	4. Add and subtract within 100 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	1. Number and Quantity	4. NBT.B. Number & Operations in Base Ten: Use place value understanding and properties of operations to perform multi-digit arithmetic.	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. (CCSS: 4.NBT.B.5)	5. Multiply one-digit whole numbers using models and illustrations using equations, rectangular arrays, and/or area models. a. Products should include values up to at least 25.
Fourth Grade	1. Number and Quantity	4. NBT.B. Number & Operations in Base Ten: Use place value understanding and properties of operations to perform multi-digit arithmetic.	6. Find whole-number quotients and remainders with up to four-digit 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. (CCSS: 4.NBT.B.6)	6. Find whole-number quotients with dividends up to at least 25 and one-digit divisors, using strategies based on the concept of division using fair and equal shares. a. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Fourth Grade	1. Number and Quantity	4. NF.A. Number & Operations—Fractions: Extend understanding of fraction equivalence and ordering.	1. Explain why a fraction a/b is equivalent to a nxa /nxb 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. (CCSS: 4.NF.A.1)	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. a. Equivalent fractions should include 1/2 = 2/4 and 1/3 = 2/6.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	1. Number and Quantity	4. NF.A. Number & Operations—Fractions: Extend understanding of fraction equivalence and ordering.	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. (CCSS: 4.NF.A.2)	2. Differentiate between whole and half.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	1. Number and Quantity	4. NF.B. Number & Operations—Fractions: Build fractions from unit fractions.	3.Understand a fraction a/b with a > 1 as a sum of fractions 1/b. (CCSS: 4. NF.B.3) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. (CCSS: 4. NF.B.3. a) Decompose a fraction into a sum of fractions with like denominators 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, 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8. (CCSS: 4.NF.B.3.b) Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. (CCSS: 4.NF.B.3.c) 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. (CCSS: 4.NF.B.3.d)	3. Understand the following additive fraction relationships: 2/2 as a sum of 1/2 and 1/2; 2/3 as a sum of 1/3 and 1/3; 3/3 as a sum of 1/3, 1/3, and 1/3; 2/4 as a sum of 1/4 and 1/4; 3/4 as the sum of 1/4, 1/4, and 1/4; and 4/4 as the sum of 1/4, 1/4, 1/4, and 1/4. a. Compose and decompose visual fraction models to illustrate these relationships. b. Solve word problems involving addition and subtraction of these fractions by using visual fraction models to represent the problem.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	1. Number and Quantity	4. NF.B. Number & Operations—Fractions: Build fractions from unit fractions.	4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. (CCSS: 4.NF.B.4)Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product 5 x 1/4, recording the conclusion by the equation 5/4 = 5 x 1/4. (CCSS: 4.NF.B.4.a) Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express 3 x 2/5 as 6 x 1/5}, recognizing this product as 6/5. (In general, n x a/b = nxa/b.) (CCSS: 4.NF.B.4.b) Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie? (CCSS: 4.NF.B.4.c)	4. Apply and extend previous understandings of multiplication to understand the following multiplicative relationships involving fractions and whole numbers: 1/2 x 2, 1/3 x 2, and 1/3 x 3, 1/4 x 2, 1/4 x 3, and 1/4 x 4. a. Compose and decompose visual fraction models to illustrate these relationships. b. Solve word problems involving multiplication of these fractions by using visual fraction models to represent the problem. For example, if two people equally share 2/3 of a pizza, how much of the pizza will each person get?

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	1. Number and Quantity	4. NF.C. Number & Operations—Fractions: Use decimal notation for fractions, and compare decimal fractions.	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. (Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.) For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100. (CCSS: 4.NF.C.5)	5. Add two fractions with denominators of 10. For example, 2/10 + 4/10 = 6/10.
Fourth Grade	1. Number and Quantity	4. NF.C. Number & Operations—Fractions: Use decimal notation for fractions, and compare decimal fractions.	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. (CCSS: 4.NF.C.6)	6. Represent a fraction < 1 with a denominator of 10 as a decimal number. For example, 2/10 = 0.2. Locate 0.2 on a number line diagram.
Fourth Grade	1. Number and Quantity	4. NF.C. Number & Operations—Fractions: Use decimal notation for fractions, and compare decimal fractions.	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. (CCSS: 4.NF.C.7)	7. Compare two visual representations of decimals to tenths by reasoning about their size. a. Recognize that comparisons are valid only when the two decimals refer to the same whole.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	2. Algebra and Functions	4. OA.A. Operations & Algebraic Thinking: Use the four operations with whole numbers to solve problems.	1. Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 x 7 as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. (CCSS: 4.OA.A.1)	1. Interpret a multiplication equation (with a product up to at least 25) as a comparison, e.g., interpret 12 = 3 x 4 as a statement that 12 is 3 times as many as 4 and 4 times as many as 3. a. Match verbal statements of multiplicative comparisons to multiplication equations and models.
Fourth Grade	2. Algebra and Functions	4. OA.A. Operations & Algebraic Thinking: Use the four operations with whole numbers to solve problems.	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. (See Appendix, Table 2) (CCSS: 4.OA.A.2)	2. Multiply or divide to solve one-step word problems involving multiplicative comparison for products up to at least 25. a. Examples: If it takes you 3 minutes to drink your milk and takes your friend 2 times as long, how long does it take your friend to drink their milk?
Fourth Grade	2. Algebra and Functions	4. OA.A. Operations & Algebraic Thinking: Use the four operations with whole numbers to solve problems.	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. (CCSS: 4.OA.A.3)	3. Solve one- and two-step addition and subtraction problems within 100 with whole numbers and having whole-number answers. a. Solve one-step multiplication and division problems within 25 with whole numbers and having whole number answers.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	2. Algebra and Functions	4. OA.B. Operations & Algebraic Thinking: Gain familiarity with factors and multiples.	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. (CCSS: 4.OA.B.4)	4. Find all factor pairs for a whole number in the range 1-12. Recognize that a whole number is a multiple of each of its factors. a. Determine whether a number in the range 1-12 is a multiple of a given one-digit number.
Fourth Grade	2. Algebra and Functions	4. OA.C. Operations & Algebraic Thinking: Generate and analyze patterns.	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. (CCSS: 4.OA.C.5)	5. Use an arithmetic pattern to predict what terms are next in the sequence. a. For example, in the pattern 4, 8, 12, 16, generate the next terms 20 and 24.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	3. Data, Statistics, and Probability	4. MD.A. Measurement & Data: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	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), … (CCSS: 4.MD.A.1)	1. Within a single system of measurement, identify the smaller measurement unit (e.g., an inch is smaller than a foot, a minute is shorter than an hour).
Fourth Grade	3. Data, Statistics, and Probability	4. MD.A. Measurement & Data: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	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. (CCSS: 4.MD.A.2)	2. Tell time using a digital clock. a. Tell time to the nearest quarter hour using an analog clock. b. Measure mass or volume using standard tools. c. Use standard measurements to compare lengths of objects. d. Identify coins (penny, nickel, dime, quarter) and their values.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	3. Data, Statistics, and Probability	4. MD.A. Measurement & Data: Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	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. (CCSS: 4.MD.A.3)	3. Apply repeated addition or multiplication to find area of rectangles up to at least 25 square units in real-world and mathematical problems for which unit squares are given or defined. a. For example, find the area of the floor of a room that has been drawn on graph paper.
Fourth Grade	3. Data, Statistics, and Probability	4. MD.B. Measurement & Data: Represent and interpret data.	4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, ¼, 1/8). 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. (CCSS: 4.MD.B.4)	4. Make a line plot displaying a data set of measurements in whole units. a. Solve problems involving addition and subtraction by using information presented in line plots.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	3. Data, Statistics, and Probability	4. MD.C. Measurement & Data: Geometric measurement: Understand concepts of angle and measure angles.	5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: (CCSS: 4.MD.C.5) An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles. (CCSS: 4.MD.C.5.a) An angle that turns through *n* one-degree angles is said to have an angle measure of n degrees. (CCSS: 4.MD.C.5.b)	5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint (EE.4.MD.C.5.b).
Fourth Grade	3. Data, Statistics, and Probability	4. MD.C. Measurement & Data: Geometric measurement: Understand concepts of angle and measure angles.	6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure. (CCSS: 4.MD.C.6)	6. Identify right angles.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	3. Data, Statistics, and Probability	4. MD.C. Measurement & Data: Geometric measurement: Understand concepts of angle and measure angles.	7. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real-world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure. (CCSS: 4.MD.C.7)	7. Compare angles, using >, =, and < symbols to record the results of comparisons. a. Example: Given obviously obtuse angle A and obviously acute angle B, A > B.
Fourth Grade	4. Geometry	4. G.A. Geometry: Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. (CCSS: 4.G.A.1)	1. Identify points, lines, line segments, intersecting lines, and parallel lines in two-dimensional figures.
Fourth Grade	4. Geometry	4. G.A. Geometry: Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	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 triangles as a category, and identify right triangles. (CCSS: 4.G.A.2)	2. Identify and sort two-dimensional figures based on the presence or absence of parallel lines and/or right angles.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fourth Grade	4. Geometry	4. G.A. Geometry: Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	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. (CCSS: 4.G.A.3)	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. a. Identify line-symmetric figures and indicate lines of symmetry by drawing or folding.
Fifth Grade	1. Number and Quantity	5. NBT.A. Number & Operations in Base Ten: Understand the place value system.	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. (CCSS: 5.NBT.A.1)	1. Recognize that in a multi-digit number with tenths or hundredths, a digit in one place represents 10 times what it represents in the place to its right. a. For example, in an amount of money written as $19.99, the nine in the tenths place (90 cents) is ten times as much as the 9 in the hundredths place (9 cents).
Fifth Grade	1. Number and Quantity	5. NBT.A. Number & Operations in Base Ten: Understand the place value system.	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. (CCSS: 5.NBT.A.2)	2. Use patterns in the number of zeros of the product when multiplying a one- or two-digit numbers by 10 or one-digit numbers by 100. a. Understand that multiplying by 10 twice is the same as multiplying by 100 once because 10x10 = 100.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	1. Number and Quantity	5. NBT.A. Number & Operations in Base Ten: Understand the place value system.	3. Read, write, and compare decimals to thousandths. (CCSS: 5.NBT.A.3)Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 x 100 + 4 × 10 + 7 x 1 + 3 x 1/10 + 9 x 1/100 + 2 x 1/1000. (CCSS: 5.NBT.A.3.a) Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. (CCSS: 5.NBT.A.3.b)	3. Compare two three-digit whole numbers based on the meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. a. Read and write decimals to hundredths using base-ten numerals, number names, and expanded form, e.g., 4.57 = 4 + 5 x (1/10) + 7 x (1/100). b. Compare two decimals to hundredths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
Fifth Grade	1. Number and Quantity	5. NBT.A. Number & Operations in Base Ten: Understand the place value system.	4. Use place value understanding to round decimals to any place. (CCSS: 5.NBT.A.4)	4. Use place value understanding to round whole numbers 1-1000 to any place.
Fifth Grade	1. Number and Quantity	5. NBT.B. Number & Operations in Base Ten: Perform operations with multi-digit whole numbers and with decimals to hundredths.	5. Fluently multiply multi-digit whole numbers using the standard algorithm. (CCSS: 5.NBT.B.5)	5. Multiply one-digit whole numbers using models and illustrations using equations, rectangular arrays, and/or area models. a. Products should include values up to at least 50.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	1. Number and Quantity	5. NBT.B. Number & Operations in Base Ten: Perform operations with multi-digit whole numbers and with decimals to hundredths.	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. (CCSS: 5.NBT.B.6)	6. Find whole-number quotients with dividends up to at least 50 and one-digit divisors, using strategies based on the concept of division using fair and equal shares. a. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Fifth Grade	1. Number and Quantity	5. NBT.B. Number & Operations in Base Ten: Perform operations with multi-digit whole numbers and with decimals to hundredths.	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. (CCSS: 5.NBT.B.7)	7. Add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
Fifth Grade	1. Number and Quantity	5. NF.A. Number & Operations—Fractions: Use equivalent fractions as a strategy to add and subtract fractions.	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 + 5/12 = 23/12. (In general, a/b + c/d = ad +bc /bd.) (CCSS: 5.NF.A.1)	1. Add and subtract fractions with single-digit numerators and like denominators up to at least 12.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	1. Number and Quantity	5. NF.A. Number & Operations—Fractions: Use equivalent fractions as a strategy to add and subtract fractions.	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. (CCSS: 5.NF.A.2)	2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of like denominators up to at least 12, e.g., by using visual fraction models or equations to represent the problem. a. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example: A pizza is cut evenly into 8 slices. If you eat 2/8 of the pizza and I eat 3/8 of the pizza, what fraction did we eat all together?

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	1. Number and Quantity	5. NF.B. Number & Operations—Fractions: Apply and extend previous understandings of multiplication and division.	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? (CCSS: 5.NF.B.3)	3. Interpret a fraction as division of the numerator by the denominator (a/b = a divided by b). Solve word problems involving division of whole numbers up to at least 12 leading to answers in the form of fractions, e.g., by using visual fraction models or equations to represent the problem. For example, interpret the problem of dividing two sandwiches equally amongst 3 people as the fraction 2/3, meaning that each person should get 2/3 of a sandwich.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	1. Number and Quantity	5. NF.B. Number & Operations—Fractions: Apply and extend previous understandings of multiplication and division.	4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. (CCSS: 5.NF.B.4)Interpret the product a/b x *q* as a parts of a partition of *q* into *b* equal parts; equivalently, as the result of a sequence of operations a x q ÷ b. For example, use a visual fraction model to show 2/3 x 4 = 8/3, and create a story context for this equation. Do the same with 2/3 x 4/5= 8/15. (In general, a/b x c/d = ac/bd.) (CCSS: 5.NF.B.4.a) 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. (CCSS: 5.NF.B.4.b)	4. Apply and extend previous understandings of multiplication to multiply the following fractions: 1/2 x 1/2, 1/3 x 1/2, 1/4 x 1/2, and 2/3 x 1/2. a. Compose and decompose visual fraction models to illustrate these relationships. b. Solve word problems involving multiplication of these fractions by using visual fraction models to represent the problem. For example, what is 1/2 of 1/2 of a pizza?

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	1. Number and Quantity	5. NF.B. Number & Operations—Fractions: Apply and extend previous understandings of multiplication and division.	5. Interpret multiplication as scaling (resizing), by: (CCSS: 5.NF.B.5) 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. (CCSS: 5.NF.B.5.a) 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 = nxa/nxb to the effect of multiplying a/b by 1. (CCSS: 5.NF.B.5.b)	5. Interpret multiplication as scaling (resizing) by understanding how 8 x 1/2 makes sense when described as "scale 8 so it is half as big," but does not make sense when described as repeated addition, such as "add 8 to itself half a time." a. Recognize that multiplying by a fraction <1 makes a factor smaller.
Fifth Grade	1. Number and Quantity	5. NF.B. Number & Operations—Fractions: Apply and extend previous understandings of multiplication and division.	6. Solve real-world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem. (CCSS: 5.NF.B.6)	6. Solve real-world problems involving multiplication of fractions, e.g., by using visual fraction models or equations to represent the problem. Fractions should include single-digit numerators and denominators up to at least 12.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	1. Number and Quantity	5. NF.B. Number & Operations—Fractions: Apply and extend previous understandings of multiplication and division.	7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.) (CCSS: 5.NF.B.7)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 x 4 = 1/3. (CCSS: 5.NF.B.7.a) 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 x 1/5= 4. (CCSS: 5.NF.B.7.b) Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole	7. Apply and extend previous understandings of division to divide unit fractions (1/2, 1/3, 1/4) by whole numbers (2, 3, 4) and whole numbers by unit fractions, e.g., by using visual fraction models or equations to represent the problem. a. For example, students should understand that dividing 1/2 of a pie into 3 equal pieces yields pieces that are 1/6 of the whole pie. Similarly, students should understand that dividing 2 pies into pieces the size of 1/4 of each pie yields a total of 8 pieces.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
			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? (CCSS: 5.NF.B.7.c)	

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	2. Algebra and Functions	5. OA.A. Operations & Algebraic Thinking: Write and interpret numerical expressions.	1. Use grouping symbols (parentheses, brackets, or braces) in numerical expressions, and evaluate expressions with these symbols. (CCSS: 5.OA.A.1)	1. Use one set of parentheses in numerical expressions, and evaluate expressions with these symbols. a. For example, in the expression (2 + 4)/3, 2 should be added to 4 before dividing by 3.
Fifth Grade	2. Algebra and Functions	5. OA.A. Operations & Algebraic Thinking: Write and interpret numerical expressions.	2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 x (8 + 70. Recognize that 3 x (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product. (CCSS: 5.OA.A.2)	2. Identify simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. a. For example, express the calculation "add 8 and 7, then multiply by 2 as 2 x (8 + 7).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	2. Algebra and Functions	5. OA.B. Operations & Algebraic Thinking: Analyze patterns and relationships.	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. (CCSS: 5.OA.B.3)	3. Generate a number pattern that follows a given rule. a. Identify a relationship between the sequence number and the number in the pattern. For example, given the rule "add 3," write the number pattern 3, 6, 9, 12, ... and describe 3 as the first number, 9 as the third number, etc.
Fifth Grade	3. Data, Statistics, and Probability	5. MD.A. Measurement & Data: Convert like measurement units within a given measurement system.	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. (CCSS: 5.MD.A.1)	1. Convert among different-sized standard measurement units within a given measurement system where the quantities yield whole units (e.g., convert 24 inches to 2 feet).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	3. Data, Statistics, and Probability	5. MD.B. Measurement & Data: Represent and interpret data.	2. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in 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. (CCSS: 5.MD.B.2)	2. Make a line plot to display a data set of measurements in whole and half units. a. Use operations to solve problems involving information presented in line plots.
Fifth Grade	3. Data, Statistics, and Probability	5. MD.C. Measurement & Data: Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.	3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement. (CCSS: 5.MD.C.3)A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume and can be used to measure volume. (CCSS: 5.MD.C.3.a) A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. (CCSS: 5.MD.C.3.b)	3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement by filling rectangular prisms with unit cubes.
Fifth Grade	3. Data, Statistics, and Probability	5. MD.C. Measurement & Data: Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.	4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft., and improvised units. (CCSS: 5.MD.C.4)	4. Measure volumes by counting unit cubes.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	3. Data, Statistics, and Probability	5. MD.C. Measurement & Data: Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.	5. Relate volume to the operations of multiplication and addition and solve real-world and mathematical problems involving volume. (CCSS: 5.MD.C.5) Model 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. (CCSS: 5.MD.C.5.a) Apply the formulas V = I x w x h and V = b x 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. (CCSS: 5.MD.C.5.b) Use the additive nature of volume to find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems. (CCSS: 5.MD.C.5.c)	5. Solve real-world problems involving volume. a. For example, find out how many smaller boxes will fit inside a larger box.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	4. Geometry	5. G.A. Geometry: Graph points on the coordinate plane to solve real-world and mathematical problems.	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 0 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). (CCSS: 5.G.A.1)	1. Use a pair of perpendicular lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. a. 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).
Fifth Grade	4. Geometry	5. G.A. Geometry: Graph points on the coordinate plane to solve real-world and mathematical problems.	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 the context of the situation. (CCSS: 5.G.A.2)	2. Interpret real-world and mathematical problems using given single-digit, first-quadrant coordinate values of points in the context of a situation. a. For example, a map aligned with a coordinate plane might indicate a point 1 block east and two blocks north of the origin can be labeled (1, 2).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Fifth Grade	4. Geometry	5. G.B. Geometry: Classify two-dimensional figures into categories based on their properties.	3. Explain 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. (CCSS: 5.G.B.3)	3. Demonstrate an understanding that the attributes of some shapes allow the shape to belong to two categories of shapes. a. For example, a square is both a square and a rectangle, while a triangle can be both right and isosceles.
Fifth Grade	4. Geometry	5. G.B. Geometry: Classify two-dimensional figures into categories based on their properties.	4. Classify two-dimensional figures in a hierarchy based on properties. (CCSS: 5.G.B.4)	4. Identify and sort two-dimensional figures using the presence or absence of angles of a specified size. A. For example, sort right triangles from a group of all triangles.
Sixth Grade	1. Number and Quantity	6. RP.A. Ratios & Proportional Relationships: Understand ratio concepts and use ratio reasoning to solve problems.	1. Apply 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." (CCSS: 6.RP.A.1)	1. Apply the concept of a ratio and use ratio language or actions to describe a ratio relationship between two quantities up to at least 5 each. For example, count out two shoes for each one person, or indicate there are four wheels for each car in the parking lot.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	1. Number and Quantity	6. RP.A. Ratios & Proportional Relationships: Understand ratio concepts and use ratio reasoning to solve problems.	2. Apply 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 ¾ cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger." (Expectations for unit rates in this grade are limited to non-complex fractions.) (CCSS: 6.RP.A.2)	2. Apply the concept of a unit rate and use rate language and/or written representations in the context of a ratio relationship. a. For example, student uses 'per' and 'for each' language, such as "There are 24 hours for each day" or "There are two gloves per student" (Expectations for unit rates in this grade are limited to non-complex fractions.).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	1. Number and Quantity	6. RP.A. Ratios & Proportional Relationships: Understand ratio concepts and use ratio reasoning to solve problems.	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. (CCSS: 6.RP.A.3)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. (CCSS: 6.RP.A.3.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? (CCSS: 6.RP.A.3.b) 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. (CCSS: 6.RP.A.3.c) Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. (CCSS: 6.RP.A.3.d)	3. Use ratio and rate reasoning to solve real-world problems, e.g., by reasoning about tables of equivalent ratios. a. Equivalent ratios should be simple, like 1:2 is equivalent to 2:4, or 2:3 is equivalent to 4:6. b. For example, students should be able to make a table relating the two socks they wear each day and use that to find the number of socks they need for a 3-day trip.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	1. Number and Quantity	6. NS.A. The Number System: Apply and extend previous understandings of multiplication and division to divide fractions by fractions.	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 ½ square mi? (CCSS: 6.NS.A.1)	1. Illustrate quotients of fractions, and solve word problems involving division of a larger benchmark fraction by a smaller benchmark fraction resulting in whole-number quotients, e.g., by using visual fraction models to represent division in problems like 3/4 divided by 1/4.
Sixth Grade	1. Number and Quantity	6. NS.B. The Number System: Compute fluently with multi-digit numbers and find common factors and multiples.	2. Fluently divide multi-digit numbers using the standard algorithm. (CCSS: 6.NS.B.2)	2. Divide multi-digit numbers using illustrations or demonstrations of fair share and equal share strategies. a. For example, students can divide 36 cookies into 12 boxes by counting out one cookie per box until there are 3 in each box.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	1. Number and Quantity	6. NS.B. The Number System: Compute fluently with multi-digit numbers and find common factors and multiples.	2. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. (CCSS: 6.NS.B.3)	3. Add, subtract, multiply, and divide numbers less than ten with one or two decimal places using appropriate strategies for each operation and/or a calculator. a. For example, do simple calculations with amounts of money.
Sixth Grade	1. Number and Quantity	6. NS.B. The Number System: Compute fluently with multi-digit numbers and find common factors and multiples.	4. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1 – 100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2). (CCSS: 6.NS.B.4)	4. Find common factors of two whole numbers less than or equal to 20 and common multiples of two whole numbers less than or equal to 10. a. For example, if there are 8 hot dogs in a package and 6 buns in a package, how many packages of each do you buy to not have hot dogs or buns left over?
Sixth Grade	1. Number and Quantity	6. NS.C. The Number System: Apply and extend previous understandings of numbers to the system of rational numbers.	5. Explain why 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. (CCSS: 6.NS.C.5)	5. Identify positive and negative numbers that 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).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	1. Number and Quantity	6. NS.C. The Number System: Apply and extend previous understandings of numbers to the system of rational numbers.	6. Describe 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. (CCSS: 6.NS.C.6)Use opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; identify that the opposite of the opposite of a number is the number itself, e.g., -(-3) = 3 , and that 0 is its own opposite. (CCSS: 6.NS.C.6.a) Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; explain that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. (CCSS: 6.NS.C.6.b) 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. (CCSS: 6.NS.C.6.c)	6. Identify integers on a number line. a. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative integer coordinates. b. Use opposite signs of numbers indicating locations on opposite sides of 0 on the number line. c. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane. d. Find and position integers on a horizontal or vertical number line diagram. e. Find and position pairs of integers on a coordinate plane.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	1. Number and Quantity	6. NS.C. The Number System: Apply and extend previous understandings of numbers to the system of rational numbers.	7. Order and find absolute value of rational numbers. (CCSS: 6.NS.C.7)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. (CCSS: 6.NS.C.7.a) Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write -3°C > -7°C to express the fact that -3°C is warmer than -7°C. (CCSS: 6.NS.C.7.b) Define 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. (CCSS: 6.NS.C.7.c) Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars. (CCSS: 6.NS.C.7.d)	7. Order and find absolute value of integers between -10 and 10. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. b. For example, identify that -2 is greater than -5 because -2 is located to the right of -5 on the number line. c. Relate negative values to a real-world situation, such as -2 could represent owing someone two dollars.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	1. Number and Quantity	6. NS.C. The Number System: Apply and extend previous understandings of numbers to the system of rational numbers.	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. (CCSS: 6.NS.C.8)	8. Solve real-world and mathematical problems represented by graphed integer-coordinate points in all four quadrants of the coordinate plane. a. Find distances between points with the same first coordinate or the same second coordinate. b. For example, if Shelby lives at 1st St. and 6th Ave., and Lisa lives at 4th St. and 6th Ave., how many blocks away from each other do they live?
Sixth Grade	2. Algebra and Functions	6. EE.A. Expressions & Equations: Apply and extend previous understandings of arithmetic to algebraic expressions.	1. Write and evaluate numerical expressions involving whole-number exponents. (CCSS: 6.EE.A.1)	1. Write and evaluate numerical expressions involving single-digit integer factors, like -4 x 3 can mean 3 groups of -4, which totals -12.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	2. Algebra and Functions	6. EE.A. Expressions & Equations: Apply and extend previous understandings of arithmetic to algebraic expressions.	Write, read, and evaluate expressions in which letters stand for numbers. (CCSS: 6.EE.A.2)Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as 5 - y. (CCSS: 6.EE.A.2.a) Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2(8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms. (CCSS: 6.EE.A.2.b) 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 $s = ½$.	2. Read and evaluate expressions in which letters stand for numbers. a. Identify parts of an expression that indicate operations (add, subtract, multiply, divide). b. Evaluate expressions at specific values of their variables. c. Perform arithmetic operations in the conventional order. d. For example, if x = 4, x + 1 should be interpreted as 4 + 1, which has a value of 5.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	2. Algebra and Functions	6. EE.A. Expressions & Equations: Apply and extend previous understandings of arithmetic to algebraic expressions.	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. (CCSS: 6.EE.A.3)	3. Apply the properties of operations to identify given equivalent expressions using single-digit integers. a. For example, apply the distributive property to the expression 3(2+4) to identify the equivalent expression 6 + 12.
Sixth Grade	2. Algebra and Functions	6. EE.A. Expressions & Equations: Apply and extend previous understandings of arithmetic to algebraic expressions.	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. (CCSS: 6.EE.A.4)	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). a. For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.
Sixth Grade	2. Algebra and Functions	6. EE.B. Expressions & Equations: Reason about and solve one-variable equations and inequalities.	5. Describe solving an equation or inequality as a process of answering a question: Which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. (CCSS: 6.EE.B.5)	5. Answer the question: Which values from a specified set make the equation true? a. Use substitution to determine whether a given number in s specified set makes an equation true. b. For example, for the equation 5x = 10, does x = 1 make the equation true? Does x = 2? x = 3? x = 4?

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	2. Algebra and Functions	6. EE.B. Expressions & Equations: Reason about and solve one-variable equations and inequalities.	6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; recognize that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (CCSS: 6.EE.B.6)	6. Identify or match an expression using variables to a real-world problem. a. For example, a number of apples plus a number of bananas could match the expression a + b.
Sixth Grade	2. Algebra and Functions	6. EE.B. Expressions & Equations: Reason about and solve one-variable equations and inequalities.	7. Solve real-world and mathematical problems by writing and solving equations of the form $x \pm p = q$ and $px=q$ for cases in which p, q and x are all nonnegative rational numbers. (CCSS: 6.EE.B.7)	7. Solve real-world and mathematical problems by solving equations of the form $x \pm p = q$ and $px=q$ for cases in which p, q and x are all whole numbers.
Sixth Grade	2. Algebra and Functions	6. EE.B. Expressions & Equations: Reason about and solve one-variable equations and inequalities.	8. Write an inequality of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$ to represent a constraint or condition in a real-world or mathematical problem. Show that inequalities of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams. (CCSS: 6.EE.B.8)	8. Evaluate an inequality of the form $x > c$ or $x < c$ that represents a real-world or mathematical problem. a. For example, if you have more than 8 dollars, the inequality $x > 8$ would be true for any amount of money (x) greater than 8 dollars.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	2. Algebra and Functions	6. EE.C. Expressions & Equations: Represent and analyze quantitative relationships between dependent and independent variables.	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. (CCSS: 6.EE.C.9)	9. Use variables to represent two quantities in a real-world problem that change in relationship to one another. a. Analyze the relationship between the variables using a table, such as a 2-column table with one column labeled with each variable. b. For example, a table of people and shoes in the classroom might have a column p, for people, and a column s, for shoes, and although the number of people and shoes can vary, there is always twice as many people as shoes.
Sixth Grade	3. Data, Statistics, and Probability	6. SP.A. Statistics & Probability: Develop understanding of statistical variability.	1. Identify 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. (CCSS: 6.SP.A.1)	1. Match statistical questions to appropriate sources of data. For example, match the question, "How tall are 6th graders?" to a sample of 6th grade students.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	3. Data, Statistics, and Probability	6. SP.A. Statistics & Probability: Develop understanding of statistical variability.	2. Demonstrate that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape. (CCSS: 6.SP.A.2)	2. Match statistical questions to a distribution of data that can be described by its center, spread, and overall shape.
Sixth Grade	3. Data, Statistics, and Probability	6. SP.A. Statistics & Probability: Develop understanding of statistical variability.	3. Explain 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. (CCSS: 6.SP.A.3)	3. Match given measures of center (mean or median) and variation (range) to a display of a data distribution.
Sixth Grade	3. Data, Statistics, and Probability	6. SP.B. Statistics & Probability: Summarize and describe distributions.	4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots. (CCSS: 6.SP.B.4)	4. Display data in plots on a number line, including dot plots and histograms.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	3. Data, Statistics, and Probability	6. SP.B. Statistics & Probability: Summarize and describe distributions.	5. Summarize numerical data sets in relation to their context, such as by: (CCSS: 6.SP.B.5) Reporting the number of observations. (CCSS: 6.SP.B.5.a) Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. (CCSS: 6.SP.B.5.b) 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. (CCSS: 6.SP.B.5.c) Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. (CCSS: 6.SP.B.5.d)	5. Summarize numerical data sets by counting the number of observations, identifying the largest and smallest observations, and informally identifying observations near the center. a. Interpret these values in a real-world context.
Sixth Grade	4. Geometry	6. G.A. Geometry: Solve real-world and mathematical problems involving area, surface area, and volume.	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. (CCSS: 6.G.A.1)	1. Find the area of right triangles, other triangles, parallelograms, and trapezoids by composing into rectangles or decomposing into triangles and other shapes. a. Apply these techniques in the context of solving real-world and mathematical problems.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Sixth Grade	4. Geometry	6. G.A. Geometry: Solve real-world and mathematical problems involving area, surface area, and volume.	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 $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. (CCSS: 6.G.A.2)	2. Find the volume of a right rectangular prism with whole number edge lengths by packing it with unit cubes and show that the volume is the same as would be found by multiplying the edge lengths of the prism.
Sixth Grade	4. Geometry	6. G.A. Geometry: Solve real-world and mathematical problems involving area, surface area, and volume.	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. (CCSS: 6.G.A.3)	3. Create polygons in the coordinate plane given coordinates for the vertices.
Sixth Grade	4. Geometry	6. G.A. Geometry: Solve real-world and mathematical problems involving area, surface area, and volume.	4. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. (CCSS: 6.G.A.4)	4. Represent three-dimensional figures using nets made up of rectangles, and use the nets to find the surface area of these figures.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	1. Number and Quantity	7. RP.A. Ratios & Proportional Relationships: Analyze proportional relationships and use them to solve real-world and mathematical problems.	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 ¼ hour, compute the unit rate as the complex fraction1/2 over 1/4miles per hour, equivalently 2 miles per hour. (CCSS: 7.RP.A.1)	1. Compute unit rates associated with ratios of whole numbers, including ratios of lengths, areas, and other quantities measured in like or different units. a. For example, if a person walks 6 miles in 2 hours, compute the unit rate as the fraction 6/2, equivalently 3 miles per hour.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	1. Number and Quantity	7. RP.A. Ratios & Proportional Relationships: Analyze proportional relationships and use them to solve real-world and mathematical problems.	2. Identify and represent proportional relationships between quantities. (CCSS: 7.RP.A.2)Determine 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. (CCSS: 7.RP.A.2.a) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. (CCSS: 7.RP.A.2.b) 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 $t = pn$. (CCSS: 7.RP.A.2.c) 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. (CCSS: 7.RP.A.2.d)	2. Represent proportional relationships between quantities using a table.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	1. Number and Quantity	7. RP.A. Ratios & Proportional Relationships: Analyze proportional relationships and use them to solve real-world and mathematical problems.	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. (CCSS: 7.RP.A.3)	3. Use proportional relationships to solve simple ratio and percent problems. a. Examples: simple interest, tax, markups and markdowns, and gratuities.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	1. Number and Quantity	7. NS.A. The Number System: Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	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. (CCSS: 7.NS.A.1) Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged. (CCSS: 7.NS.A.1.a) Demonstrate $p + q$ 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. (CCSS: 7.NS.A.1.b) Demonstrate 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. (CCSS: 7.NS.A.1.c) Apply properties of operations as strategies to add and subtract rational numbers. (CCSS: 7.NS.A.1.d)	1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers with single-digit numerators and denominators up to at least 12. a. Represent addition and subtraction on a horizontal or vertical number line diagram. For example, add -1/4 + 3/4 to get 1/2.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	1. Number and Quantity	7. NS.A. The Number System: Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. (CCSS: 7.NS.A.2)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. (CCSS: 7.NS.A.2.a) 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. (CCSS: 7.NS.A.2.b) Apply properties of operations as strategies to multiply and divide rational numbers. (CCSS: 7.NS.A.2.c) Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0 s or eventually repeats. (CCSS: 7.NS.A.2.d)	2. Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers with single-digit numerators and denominators up to at least 12, e.g., by using visual fraction models or equations to represent the problem. a. For example, dividing 3/4 of a pizza into pieces the size of 1/4 of the whole pizza can be written as 3/4 divided by 1/4, and it yields 3 pieces.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	1. Number and Quantity	7. NS.A. The Number System: Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.	3. Solve real-world and mathematical problems involving the four operations with rational numbers. *(Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)* (CCSS: 7.NS.A.3)	3. Solve real-world and mathematical problems involving the four operations.
Seventh Grade	2. Algebra and Functions	7. EE.A. Expressions & Equations: Use properties of operations to generate equivalent expressions.	1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. (CCSS: 7.EE.A.1)	1. Apply properties of operations as strategies to add and subtract linear expressions with whole number coefficients. For example, $2x + 3x$ is $5x$.
Seventh Grade	2. Algebra and Functions	7. EE.A. Expressions & Equations: Use properties of operations to generate equivalent expressions.	2. Demonstrate that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a + 0.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05." (CCSS: 7.EE.A.2)	2. Demonstrate that rewriting an expression in different forms can shed light on the problem and how the quantities in it are related. a. For example, if 3 people at lunch spend \$21 for sandwiches, the expression \$7 x 3 tells us that it was 7 dollars for each of the 3 sandwiches.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	2. Algebra and Functions	7. EE.B. Expressions & Equations: Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	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 3/4 inches long in the center of a door that is 27 1/2 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. (CCSS: 7.EE.B.3)	3. Solve multi-step real-life and mathematical problems posed with whole numbers, benchmark fractions, and/or decimals to two decimal places. Numbers should combine cleanly for simpler calculations. a. For example, if a sandwich costs $6.50 and a drink costs $1.50, but you have a coupon to save 1/4 off the total, how much will you spend for the sandwich and the drink?

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	2. Algebra and Functions	7. EE.B. Expressions & Equations: Solve real-life and mathematical problems using numerical and algebraic expressions and equations.	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. (CCSS: 7.EE.B.4)Solve word problems leading to equations of the form $px \pm q = r$ and $p(x \pm q) = r$ 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? (CCSS: 7.EE.B.4.a) Solve word problems leading to inequalities of the form $px \pm q > r$ and $px \pm q \geq r$, $px \pm q < r$, $px \pm q \leq r$ 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. (CCSS: 7.EE.B.4.b)	4. Solve real-world or mathematical problems using simple equations containing variables. a. For example, if x number of glasses of water plus 2 glasses of water makes 8 glasses of water total, then x must be 6 glasses of water. Represent the problems using objects or drawings and match the situations to equations (in this case, x + 2 = 8).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	3. Data, Statistics, and Probability	7. SP.A. Statistics & Probability: Use random sampling to draw inferences about a population.	1. Understand that statistics can be used to gain information about a population by examining a sample of the population; explain that generalizations about a population from a sample are valid only if the sample is representative of that population. Explain that random sampling tends to produce representative samples and support valid inferences. (CCSS: 7.SP.A.1)	1. Understand that statistics usually involves measuring something about a sample to learn something about a population.
Seventh Grade	3. Data, Statistics, and Probability	7. SP.A. Statistics & Probability: Use random sampling to draw inferences about a population.	2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be. (CCSS: 7.SP.A.2)	2. Use data from a sample to answer a statistical question. a. For example, conclude from a sample of the class that most students like chocolate ice cream.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	3. Data, Statistics, and Probability	7. SP.B. Statistics & Probability: Draw informal comparative inferences about two populations.	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. (CCSS: 7.SP.B.3)	3. Informally compare two sets of data within a single data display, such as a picture graph, line plot, or bar graph.
Seventh Grade	3. Data, Statistics, and Probability	7. SP.B. Statistics & Probability: Draw informal comparative inferences about two populations.	4. Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about 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. (CCSS: 7.SP.B.4)	4. Use given measures of center and given measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. a. For example, if the average height of a class of 8th graders is 5 feet 5 inches, and the average height of a class of 7th graders is 5 feet 2 inches, which population is more likely taller on average, 8th graders or 7th graders?

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	3. Data, Statistics, and Probability	7. SP.C. Statistics & Probability: Investigate chance processes and develop, use, and evaluate probability models.	5. Explain 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 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. (CCSS: 7.SP.C.5)	5. Indicate an understanding that the probability of a chance event can be 0, for things that never happen, between 0 and 1, for things that sometimes happen, or 1, for things that always happen.
Seventh Grade	3. Data, Statistics, and Probability	7. SP.C. Statistics & Probability: Investigate chance processes and develop, use, and evaluate probability models.	6. Approximate the probability of a chance event by collecting data on the chance process that produces 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. (CCSS: 7.SP.C.6)	6. Collect data on a chance process (e.g., flipping a coin, rolling a die) and observe its long-run relative frequency.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	3. Data, Statistics, and Probability	7. SP.C. Statistics & Probability: Investigate chance processes and develop, use, and evaluate probability models.	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. (CCSS: 7.SP.C.7)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. (CCSS: 7.SP.C.7.a) 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? (CCSS: 7.SP.C.7.b)	7. Compare probabilities from a model to observed frequencies and identify when agreement is not good. a. For example, given that the probability of flipping heads is 0.5, getting 8 heads out of 10 flips is not good agreement with the model.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	3. Data, Statistics, and Probability	7. SP.C. Statistics & Probability: Investigate chance processes and develop, use, and evaluate probability models.	8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. (CCSS: 7.SP.C.8)Explain 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. (CCSS: 7.SP.C.8.a) 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. (CCSS: 7.SP.C.8.b) 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? (CCSS: 7.SP.C.8.c)	8. Find probabilities of compound events using organized lists and tree diagrams.

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Seventh Grade	4. Geometry	7. G.A. Geometry: Draw, construct, and describe geometrical figures and describe the relationships between them.	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. (CCSS: 7.G.A.1)	1. Match corresponding parts of scale drawings of geometric figures and compare given lengths and areas.
Seventh Grade	4. Geometry	7. G.A. Geometry: Draw, construct, and describe geometrical figures and describe the relationships between them.	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. (CCSS: 7.G.A.2)	2. Create triangles with given conditions and recognize that some combinations of side lengths and/or angles cannot be made into a triangle.
Seventh Grade	4. Geometry	7. G.A. Geometry: Draw, construct, and describe geometrical figures and describe the relationships between them.	3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in cross sections of right rectangular prisms and right rectangular pyramids. (CCSS: 7.G.A.3)	3. Describe rectangular cross-sections from right rectangular prisms.
Seventh Grade	4. Geometry	7. G.B. Geometry: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	4. State 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. (CCSS: 7.G.B.4)	4. Use the formula for the area and circumference of a circle to solve problems.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Seventh Grade	4. Geometry	7. G.B. Geometry: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	5. Use facts about supplementary, complementary, vertical, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure. (CCSS: 7.G.B.5)	5. Recognize angles that are acute, obtuse, and right (EE.7.G.B.5).
Seventh Grade	4. Geometry	7. G.B. Geometry: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	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. (CCSS: 7.G.B.6)	6. Solve real-world and mathematical problems involving the area of triangles, rectangles, and circles, and the volume and surface area of right rectangular prisms.
Eighth Grade	1. Number and Quantity	8. NS.A. The Number System: Know that there are numbers that are not rational, and approximate them by rational numbers.	1. Demonstrate 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. Define irrational numbers as numbers that are not rational. (CCSS: 8.NS.A.1)	1. Calculate or identify the equivalent decimal values for common fractions less than 1, such as those expressed as halves, thirds, fourths, and fifths.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	1. Number and Quantity	8. NS.A. The Number System: Know that there are numbers that are not rational, and approximate them by rational numbers.	2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). 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. (CCSS: 8.NS.A.2)	2. Compare the size of rational numbers by locating them approximately on a number line diagram.
Eighth Grade	2. Algebra and Functions	8. EE.A. Expressions & Equations: Work with radicals and integer exponents.	1. Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$. (CCSS: 8.EE.A.1)	1. Know that an integer exponent of 2 is called "squared" and an integer exponent of 3 is called "cubed" and that these numbers indicate how many times to use a number as a factor. For example, 4^2 means 4 times 4 and 4^3 means 4 times 4 times 4.
Eighth Grade	2. Algebra and Functions	8. EE.A. Expressions & Equations: Work with radicals and integer exponents.	2. Use square root and cube root symbols to represent solutions to equations of the form x^2=p and x^3=p, where p is a positive rational number. Evaluate square roots of small perfect squares (up to 100) and cube roots of small perfect cubes (up to 64). Know that √2 is irrational. (CCSS: 8.EE.A.2	2. Evaluate square roots of small perfect squares (up to 100).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	2. Algebra and Functions	8. EE.A. Expressions & Equations: Work with radicals and integer exponents.	3. Use numbers expressed in the form of a single digit times an integer 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 10^8 and the population of the world as 7 times 10^9, and determine that the world population is more than 20 times larger. (CCSS: 8.EE.A.3)	3. Use numbers expressed in the form of a single digit times a 2nd or 3rd power of 10 to estimate large quantities. For example, 5000 can be expressed as 5×10^3.
Eighth Grade	2. Algebra and Functions	8. EE.A. Expressions & Equations: Work with radicals and integer exponents.	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. (CCSS: 8.EE.A.4)	4. Perform addition with numbers expressed in scientific notation, including problems where whole numbers are used as a factor times 10^2 and 10^3. For example, 5×10^2 plus 3×10^2 is 8×10^2 (five ten-squared plus three ten-squared is 8 ten-squared).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	2. Algebra and Functions	8. EE.B. Expressions & Equations: Understand the connections between proportional relationships, lines, and linear equations.	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. (CCSS: 8.EE.B.5)	5. Graph simple proportional relationships by connecting the origin to a point representing the ratio in the form y/x. a. For example, given a ratio of 3 miles per 1 hour, plot the point (1, 3) and draw a line through it and the origin in the first quadrant.
Eighth Grade	2. Algebra and Functions	8. EE.B. Expressions & Equations: Understand the connections between proportional relationships, lines, and linear equations.	6. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b . (CCSS: 8.EE.B.6)	6. Measure the slope of a graph by drawing or using given slope triangles.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	2. Algebra and Functions	8. EE.C. Expressions & Equations: Analyze and solve linear equations and pairs of simultaneous linear equations.	7. Solve linear equations in one variable. (CCSS: 8.EE.C.7)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 numbers). (CCSS: 8.EE.C.7.a) Solve linear equations with rational number coefficients, including equations with variables on both sides and whose solutions require expanding expressions using the distributive property and collecting like terms. (CCSS: 8.EE.C.7.b)	7. Solve two-step linear equations in one variable. For example, if 6x - 3 = 9, then x = 2.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	2. Algebra and Functions	8. EE.C. Expressions & Equations: Analyze and solve linear equations and pairs of simultaneous linear equations.	8. Analyze and solve pairs of simultaneous linear equations. (CCSS: 8.EE.C.8)Explain 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. (CCSS: 8.EE.C.8.a) 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. (CCSS: 8.EE.C.8.b) 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. (CCSS: 8.EE.C.8.c)	8. Match a pair of simultaneous linear equations to a real-world context.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	2. Algebra and Functions	8. F.A. Functions: Define, evaluate, and compare functions.	1. Define a function as a rule that assigns to each input exactly one output. Show that the graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required for Grade 8.) (CCSS: 8.F.A.1)	1. Given a function table containing at least 2 ordered pairs, identify a missing number that completes another ordered pair (limited to linear functions) (EE.F.1-3).
Eighth Grade	2. Algebra and Functions	8. F.A. Functions: Define, evaluate, and compare functions.	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. (CCSS: 8.F.A.2)	2. Compare properties of two functions each represented by verbal descriptions. For example, compare the amount of money received if your allowance is $10 per week instead of $6 per week.
Eighth Grade	2. Algebra and Functions	8. F.A. Functions: Define, evaluate, and compare functions.	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 $A = s^2$ 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. (CCSS: 8.F.A.3)	3. Interpret a function as linear if all of the input/output pairs can be graphed on a single line.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	2. Algebra and Functions	8. F.B. Functions: Use functions to model relationships between quantities.	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. (CCSS: 8.F.B.4)	4. Determine the values or rule of a function using a graph or a table (EE: 8.F.B.4).
Eighth Grade	2. Algebra and Functions	8. F.B. Functions: Use functions to model relationships between quantities.	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. (CCSS: 8.F.B.5)	5. Describe qualitatively how a graph represents a relationship between two quantities (EE.8.F.B.5).
Eighth Grade	3. Data, Statistics, and Probability	8. SP.A. Statistics & Probability: Investigate patterns of association in bivariate data.	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 nonlinear association. (CCSS: 8.SP.A.1)	1. Interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. a. Describe patterns such as positive or negative association and linear association.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	3. Data, Statistics, and Probability	8. SP.A. Statistics & Probability: Investigate patterns of association in bivariate data.	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. (CCSS: 8.SP.A.2)	2. Informally fit a straight line to a scatterplot and assess the model fit by judging the closeness of the data points to the graph of the line.
Eighth Grade	3. Data, Statistics, and Probability	8. SP.A. Statistics & Probability: Investigate patterns of association in bivariate data.	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. (CCSS: 8.SP.A.3)	3. Use a graph of a linear model in the context of bivariate measurement data to interpret the slope and intercept. (EE.8.SP.4)

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	3. Data, Statistics, and Probability	8. SP.A. Statistics & Probability: Investigate patterns of association in bivariate data.	4. Explain 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? (CCSS: 8.SP.A.4)	4. Construct a graph or table from given categorical data and compare the data categorized in the graph or table.
Eighth Grade	4. Geometry	8. G.A. Geometry: Understand congruence and similarity using physical models, transparencies, or geometry software.	1. Verify experimentally the properties of rotations, reflections, and translations: (CCSS: 8.G.A.1) Lines are taken to lines, and line segments to line segments of the same length. (CCSS: 8.G.A.1.a) Angles are taken to angles of the same measure. (CCSS: 8.G.A.1.b) Parallel lines are taken to parallel lines. (CCSS: 8.G.A.1.c)	1. Recognize rotations, reflections, and translations (EE.8.G.1).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	4. Geometry	8. G.A. Geometry: Understand congruence and similarity using physical models, transparencies, or geometry software.	2. Demonstrate that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. (CCSS: 8.G.A.2)	2. Demonstrate congruence of two-dimensional shapes by rotating, reflecting, and/or translating one shape onto another.
Eighth Grade	4. Geometry	8. G.A. Geometry: Understand congruence and similarity using physical models, transparencies, or geometry software.	3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. (CCSS: 8.G.A.3)	3. Describe the effect of a translation, rotation, or reflection in the coordinate plane by matching a point on the figure with the corresponding point on the image of the figure.
Eighth Grade	4. Geometry	8. G.A. Geometry: Understand congruence and similarity using physical models, transparencies, or geometry software.	4. D251:D252Demonstrate 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. (CCSS: 8.G.A.4)	4. Recognize 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.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
Eighth Grade	4. Geometry	8. G.A. Geometry: Understand congruence and similarity using physical models, transparencies, or geometry software.	5. Use informal arguments to establish facts about the angle sum and exterior angle of 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 give an argument in terms of transversals why this is so. (CCSS: 8.G.A.5)	5. Use angle measurements to establish facts about the angle sum of triangles and about the angles created when parallel lines are cut by a transversal.
Eighth Grade	4. Geometry	8. G.B. Geometry: Understand and apply the Pythagorean Theorem.	6. Explain a proof of the Pythagorean Theorem and its converse. (CCSS: 8.G.B.6)	6. Explain or otherwise demonstrate how the areas of the squares constructed on the sides of a 3-4-5 right triangle correspond to the parts of the formula for the Pythagorean Theorem.
Eighth Grade	4. Geometry	8. G.B. Geometry: Understand and apply the Pythagorean Theorem.	7. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. (CCSS: 8.G.B.7)	7. Represent a right triangle on a coordinate plane and measure to find missing side lengths.
Eighth Grade	4. Geometry	8. G.B. Geometry: Understand and apply the Pythagorean Theorem.	8. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. (CCSS: 8.G.B.8)	8. Measure to find the distance between two points on a coordinate plane.
Eighth Grade	4. Geometry	8. G.C. Geometry: Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.	9. State the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. (CCSS: 8.G.C.9)	9. Use the formulas for the volumes of cylinders to solve real-world and mathematical problems.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	1. Number and Quantity	HS.N-RN.A. The Real Number System: Extend the properties of exponents to rational exponents.	1. Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define 5^(1/3) to be the cube root of 5 because we want (5^(1/3))^3=5^(1/3)3 to hold, so (5^(1/3))^3 must equal 5. (CCSS: HS.N-RN.A.1)	1. Write and evaluate numerical expressions involving whole-number exponents of 2 or 3 (squared and cubed).
High School	1. Number and Quantity	HS.N-RN.A. The Real Number System: Extend the properties of exponents to rational exponents.	2. Rewrite expressions involving radicals and rational exponents using the properties of exponents. (CCSS: HS.N-RN.A.2)	2. Rewrite expressions involving whole number exponents using expanded form, e.g., y^3 = y times y times y.
High School	1. Number and Quantity	HS.N-RN.B. The Real Number System: Use properties of rational and irrational numbers.	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 nonzero rational number and an irrational number is irrational. (CCSS: HS.N-RN.A.3)	3. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	1. Number and Quantity	HS.N-Q.A. Quantities: Reason quantitatively and use units to solve problems.	1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. (CCSS: HS.N-Q.A.1)	1. Use units as a way to understand problems and to guide the solution of multi-step problems. a. For example, a problem asking "How many eggs will I use today if I'm using half of three dozen eggs today and the other half tomorrow?" requires a student to make sense of "dozen" either at the beginning (3 dozen is 36 eggs, and half is 18 eggs) or at the end (half of 3 dozen is 1.5 dozen, which is 18 eggs) of their solution.
High School	1. Number and Quantity	HS.N-Q.A. Quantities: Reason quantitatively and use units to solve problems.	2. Define appropriate quantities for the purpose of descriptive modeling. (CCSS: HS.N-Q.A.2)	2. Define appropriate quantities for the purpose of descriptive modeling. a. For example, fuel economy can be described as miles per gallon (instead of feet per barrel of gasoline) because miles and gallons are the way we typically measure driving distances and fuel use.
High School	1. Number and Quantity	HS.N-Q.A. Quantities: Reason quantitatively and use units to solve problems.	3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (CCSS: HS.N-Q.A.3)	3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. a. For example, students should be able to give an example of when knowing time to a fraction of a second (like running in a race) versus the nearest year (like giving your age).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	1. Number and Quantity	HS.N-CN.A. The Complex Number System: Perform arithmetic operations with complex numbers.	1. Define complex number *i* such that $i^2 = -1$, and show that every complex number has the form $a + bi$ where *a* and *b* are real numbers. (CCSS: HS.N-CN.A.1)	1. Know that different kinds of numbers are needed to represent different quantities. a. For example, we need the counting numbers to count whole things, fractions and decimals to represent parts of wholes (or between wholes on the number line), and negative numbers to represent quantities less than zero.
High School	1. Number and Quantity	HS.N-CN.A. The Complex Number System: Perform arithmetic operations with complex numbers.	2. Use the relation $i^2 = –1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers. (CCSS: HS.N-CN.A.2)	2. Use the commutative, associative, and distribute properties to add, subtract, and multiply real (whole) numbers. (EE.N-CN.2.a.)
High School	1. Number and Quantity	HS.N-CN.A. The Complex Number System: Perform arithmetic operations with complex numbers.	3. (+) Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers. (CCSS: HS.N-CN.A.3)	3. N/A
High School	1. Number and Quantity	HS.N-CN.B. The Complex Number System: Represent complex numbers and their operations on the complex plane.	4. (+) Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number. (CCSS: HS.N-CN.B.4)	4. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	1. Number and Quantity	HS.N-CN.B. The Complex Number System: Represent complex numbers and their operations on the complex plane.	5. (+) Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. For example, (-1+√3i)^3=8 because (-1+√3i) has modulus 2 and argument 〖120〗^∘. (CCSS: HS.N-CN.B.5)	5. N/A
High School	1. Number and Quantity	HS.N-CN.B. The Complex Number System: Represent complex numbers and their operations on the complex plane.	6. (+) Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints. (CCSS: HS.N-CN.B.6)	6. N/A
High School	1. Number and Quantity	HS.N-CN.C. The Complex Number System: Use complex numbers in polynomial identities and equations.	7. Solve quadratic equations with real coefficients that have complex solutions. (CCSS: HS.N-CN.C.7)	7. Solve real-world problems with real coefficients that have real number solutions.
High School	1. Number and Quantity	HS.N-CN.C. The Complex Number System: Use complex numbers in polynomial identities and equations.	8. (+) Extend polynomial identities to the complex numbers. For example, rewrite as x^2+4 as (x+2i)(x-2i). (CCSS: HS.N-CN.C.8)	8. N/A
High School	1. Number and Quantity	HS.N-CN.C. The Complex Number System: Use complex numbers in polynomial identities and equations.	9. (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials. (CCSS: HS.N-CN.C.9	9. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	1. Number and Quantity	HS.N-VM.A. Vector & Matrix Quantities: Represent and model with vector quantities.	1. (+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., v, |v|, ‖v‖,v). (CCSS: HS.N-VM.A.1)	1. N/A
High School	1. Number and Quantity	HS.N-VM.A. Vector & Matrix Quantities: Represent and model with vector quantities.	2. +) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point. (CCSS: HS.N-VM.A.2)	2. N/A
High School	1. Number and Quantity	HS.N-VM.A. Vector & Matrix Quantities: Represent and model with vector quantities.	3. (+) Solve problems involving velocity and other quantities that can be represented by vectors. (CCSS: HS.N-VM.A.3)	3. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	1. Number and Quantity	HS.N-VM.B. Vector & Matrix Quantities: Perform operations on vectors.	4. (+) Add and subtract vectors. (CCSS: HS.N-VM.B.4) Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes. (CCSS: HS.N-VM.B.4.a) b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. (CCSS: HS.N-VM.B.4.b) Understand vector subtraction v-w as v+(-w), where -w is the additive inverse of w, with the same magnitude as w and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise. (CCSS: HS.N-VM.B.4.c)	4. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	1. Number and Quantity	HS.N-VM.B. Vector & Matrix Quantities: Perform operations on vectors.	5. (+) Multiply a vector by a scalar. (CCSS: HS.N-VM.B.5) Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g. as c(v_x,v_y)=(cv_x,cv_y). (CCSS: HS.N-VM.B.5.a) Compute the magnitude of a scalar multiple cv using ‖cv‖=|c|v. Compute the direction of cv knowing that when |c|v≠0, the direction of cv is either along v (for c>0) or against v (for c<0). (CCSS: HS.N-VM.B.5.b)	5. N/A
High School	1. Number and Quantity	HS.N-VM.C. Vector & Matrix Quantities: Perform operations on matrices and use matrices in applications.	6. (+) Use matrices to represent and manipulate data, e.g., as when all of the payoffs or incidence relationships in a network. (CCSS: HS.N-VM.C.6)	6. N/A
High School	1. Number and Quantity	HS.N-VM.C. Vector & Matrix Quantities: Perform operations on matrices and use matrices in applications.	7. (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled. (CCSS: HS.N-VM.C.7)	7. N/A
High School	1. Number and Quantity	HS.N-VM.C. Vector & Matrix Quantities: Perform operations on matrices and use matrices in applications.	8. (+) Add, subtract, and multiply matrices of appropriate dimensions. (CCSS: HS.N-VM.C.8)	8. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	1. Number and Quantity	HS.N-VM.C. Vector & Matrix Quantities: Perform operations on matrices and use matrices in applications.	9. (+) Understand that, unlike the multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties. (CCSS: HS.N-VM.C.9)	9. N/A
High School	1. Number and Quantity	HS.N-VM.C. Vector & Matrix Quantities: Perform operations on matrices and use matrices in applications.	10. (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse. (CCSS: HS.N-VM.C.10)	10. N/A
High School	1. Number and Quantity	HS.N-VM.C. Vector & Matrix Quantities: Perform operations on matrices and use matrices in applications.	11. (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimension to produce another vector. Work with matrices as transformations of vectors. (CCSS: HS.N-VM.C.11)	11. N/A
High School	1. Number and Quantity	HS.N-VM.C. Vector & Matrix Quantities: Perform operations on matrices and use matrices in applications.	12. (+) Work with 2×2 matrices as transformations of the plane and interpret the absolute value of the determinant in terms of area. (CCSS: HS.N-VM.C.12)	12. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.A-SSE.A. Seeing Structure in Expressions: Interpret the structure of expressions.	1. Interpret expressions that represent a quantity in terms of its context; (CCSS: HS.A-SSE.A.1) Interpret parts of an expression, such as terms, factors, and coefficients. (CCSS: HS.A-SSE.A.1.a) 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*. (CCSS: HS.A-SSE.A.1.b)	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. For example, the expression 100w + 500 could represent earning $100 per week (w) and a starting balance of $500.
High School	2. Algebra and Functions	HS.A-SSE.A. Seeing Structure in Expressions: Interpret the structure of expressions.	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 $(x^2 - y^2) (x^2 + y^2)$. (CCSS: HS.A-SSE.A.2)	2. Use the structure of a simple expression to identify ways to rewrite it. A. For example, 3x can be written as x + x + x.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.A-SSE.B. Seeing Structure in Expressions: Write expressions in equivalent forms to solve problems.	3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression; (CCSS: HS.A-SSE.B.3) Factor a quadratic expression to reveal the zeros of the function it defines. (CCSS: HS.A-SSE.B.3.a) Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. (CCSS: HS.A-SSE.B.3.b) Use the properties of exponents to transform expressions for exponential functions. For example, the expression 1.15t can be rewritten as $(1.15^{1/12})^{12t}$ approx. 1.012^{12t} to reveal the approximate equivalent monthly interest rate if the annual rate is 15%. (CCSS: HS.A-SSE.B.3.c)	3. Choose and produce an equivalent form of a one-variable expression to reveal and explain properties of the quantity represented by the expression. a. For example, 80w + 20w + 200 + 300 might describe earning $80 per week at one job and $20 per week at another job, as well as one-time gifts of $200 from a parent and $300 from a grandparent. That could be re-written in an equivalent form as 100w + 500, which would then help show the total earned per week ($100) and the sum of the one-time gifts ($500).
High School	2. Algebra and Functions	HS.A-SSE.B. Seeing Structure in Expressions: Write expressions in equivalent forms to solve problems.	4. Use the formula for the sum of a finite geometric series (when the common ratio is not 1) to solve problems. For example, calculate mortgage payments. ★ (CCSS: HS.A-SSE.B.4) (+) Derive the formula for the sum of a finite geometric series (when the common ratio is not 1). (CCSS: HS.A-SSE.B.4)	4. Determine the successive term in a geometric sequence given the common ratio (EE.A-SSE.4).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.A-APR.A. Arithmetic with Polynomials & Rational Expressions: Perform arithmetic operations on polynomials.	1. Explain 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. (CCSS: HS.A-APR.A.1)	1. Add and subtract first-degree polynomials, i.e., combine like terms.
High School	2. Algebra and Functions	HS.A-APR.B. Arithmetic with Polynomials & Rational Expressions: Understand the relationship between zeros and factors of polynomials.	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). (Students need not apply the Remainder Theorem to polynomials of degree greater than 4.) (CCSS: HS.A-APR.B.2)	2. N/A
High School	2. Algebra and Functions	HS.A-APR.B. Arithmetic with Polynomials & Rational Expressions: Understand the relationship between zeros and factors of polynomials.	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. (CCSS: HS.A-APR.B.3)	3. N/A
High School	2. Algebra and Functions	HS.A-APR.C. Arithmetic with Polynomials & Rational Expressions: Use polynomial identities to solve problems.	4. (+) Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity (x^2+y^2)^2=(x^2-y^2)^2+(2xy)^2 can be used to generate Pythagorean triples. (CCSS: HS.A-APR.C.4)	4. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.A-APR.C. Arithmetic with Polynomials & Rational Expressions: Use polynomial identities to solve problems.	5. (+) Know and apply the Binomial Theorem for the expansion of in powers of x and y for a positive integer n, where x and y are any numbers, with coefficients determined for example by Pascal's Triangle. (The Binomial Theorem can be proved by mathematical induction or by a combinatorial argument.) (CCSS: HS.A-APR.C.5)	5. N/A
High School	2. Algebra and Functions	HS.A-APR.D. Arithmetic with Polynomials & Rational Expressions: Rewrite rational expressions.	6. Rewrite simple rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/bx) , 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. (CCSS: HS.A-APR.D.6)	6. N/A
High School	2. Algebra and Functions	HS.A-APR.D. Arithmetic with Polynomials & Rational Expressions: Rewrite rational expressions.	7. (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expressions; add, subtract, multiply, and divide rational expressions. (CCSS: HS.A-APR.D.7)	7. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.A-CED.A. Creating Equations: Create equations that describe numbers or relationships.★	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. (CCSS: HS.A-CED.A.1)	1. Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear functions.
High School	2. Algebra and Functions	HS.A-CED.A. Creating Equations: Create equations that describe numbers or relationships.★	2. Create equations in two or more variables to represent relationships between quantities and graph equations on coordinate axes with labels and scales. (CCSS: HS.A-CED.A.2)	2. Create equations in two variables to represent linear relationships between quantities and graph equations on coordinate axes with labels and scales.
High School	2. Algebra and Functions	HS.A-CED.A. Creating Equations: Create equations that describe numbers or relationships.★	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. (CCSS: HS.A-CED.A.3)	3. Identify solutions as viable or nonviable options in a modeling context. a. For example, if the speed limit is 70 miles per hour and you have 4 hours of travel time, destinations less than or equal to 280 miles away are going to be possible to reach in that time destinations greater than 280 miles away are not.
High School	2. Algebra and Functions	HS.A-CED.A. Creating Equations: Create equations that describe numbers or relationships.★	4. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R. (CCSS: HS.A-CED.A.4)	4. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.A-REI.A. Reasoning with Equations & Inequalities: Understand solving equations as a process of reasoning and explain the reasoning.	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. (CCSS: HS.A-REI.A.1)	1. Explain each step in solving a simple given equation involving one or two operations, such as 3x + 1 = 7 (Step 1), 3x = 6 (Step 2), and x = 2 (Step 3).
High School	2. Algebra and Functions	HS.A-REI.A. Reasoning with Equations & Inequalities: Understand solving equations as a process of reasoning and explain the reasoning.	2. Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. (CCSS: HS.A-REI.A.2)	2. N/A
High School	2. Algebra and Functions	HS.A-REI.B. Reasoning with Equations & Inequalities: Solve equations and inequalities in one variable.	3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. (CCSS: HS.A-REI.B.3)	3. Solve linear equations in one variable.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.A-REI.B. Reasoning with Equations & Inequalities: Solve equations and inequalities in one variable.	4. Solve quadratic equations in one variable. (CCSS: HS.A-REI.B.4)Use the method of completing the square to transform any 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. (CCSS: HS.A-REI.B.4.a) Solve quadratic equations (e.g., for $x^2 = 49$) by inspection, 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 ±bi for real numbers *a* and *b*. (CCSS: HS.A-REI.B.4.b)	4. N/A
High School	2. Algebra and Functions	HS.A-REI.C. Reasoning with Equations & Inequalities: Solve systems of equations.	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. (CCSS: HS.A-REI.C.5)	5. N/A
High School	2. Algebra and Functions	HS.A-REI.C. Reasoning with Equations & Inequalities: Solve systems of equations.	6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. (CCSS: HS.A-REI.C.6)	6. Solve systems of linear equations approximately with graphs, focusing on pairs of linear equations in two variables.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.A-REI.C. Reasoning with Equations & Inequalities: Solve systems of equations.	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 $x^2 + y^2 = 3$. (CCSS: HS.A-REI.C.7)	7. N/A
High School	2. Algebra and Functions	HS.A-REI.C. Reasoning with Equations & Inequalities: Solve systems of equations.	8. (+) Represent a system of linear equations as a single matrix equation in a vector variable. (CCSS: HS.A-REI.C.8)	8. N/A
High School	2. Algebra and Functions	HS.A-REI.C. Reasoning with Equations & Inequalities: Solve systems of equations.	9. (+) Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension 3×3 or greater). (CCSS: HS.A-REI.C.9)	9. N/A
High School	2. Algebra and Functions	HS.A-REI.D. Reasoning with Equations & Inequalities: Represent and solve equations and inequalities graphically.	10. Explain 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). (CCSS: HS.A-REI.D.10)	10. Graph an equation in two variables given a table of values.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.A-REI.D. Reasoning with Equations & Inequalities: Represent and solve equations and inequalities graphically.	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. (CCSS: HS.A-REI.D.11)	11. Confirm that the point of intersection for a given system of linear equations is the point that makes both equations true.
High School	2. Algebra and Functions	HS.A-REI.D. Reasoning with Equations & Inequalities: Represent and solve equations and inequalities graphically.	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. (CCSS: HS.A-REI.D.12)	12. Interpret the meaning of a point on a graphed line in context. A. For example, the line d=50h could represent distance traveled when moving at 50 miles per hour. The point (2,100) represents travelling 100 miles after 2 hours.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-IF.A. Interpreting Functions: Understand the concept of a function and use function notation.	1. Explain that a function is a correspondence from one set (called the domain) to another set (called the range) that assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x). (CCSS: HS.F-IF.A.1)	1. Demonstrate an understanding that a function is a correspondence from one set to another set.
High School	2. Algebra and Functions	HS.F-IF.A. Interpreting Functions: Understand the concept of a function and use function notation.	2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. (CCSS: HS.F-IF.A.2)	2. Evaluate functions for inputs in their domains.
High School	2. Algebra and Functions	HS.F-IF.A. Interpreting Functions: Understand the concept of a function and use function notation.	3. Demonstrate that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by f (0) = f (1) = 1, f (n+1) = f (n) + f (n-1) for n ≥ 1. (CCSS: HS.F-IF.A.3)	3. Match the place in a sequence with the value in the sequence. a. For example, for a sequence defined by the rule "Add 5 starting at 0," match the 3rd place with the value 15.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-IF.B. Interpreting Functions: Interpret functions that arise in applications in terms of the context.	4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. (CCSS: HS.F-IF.B.4)	4. For a function that models a relationship between two quantities, interpret key features of graphs, including intercepts and patterns of increase and decrease.
High School	2. Algebra and Functions	HS.F-IF.B. Interpreting Functions: Interpret functions that arise in applications in terms of the context.	5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function. ★ (CCSS: HS.F-IF.B.5)	5. Relate the domain of a function that models a real-world scenario to its graph and identify appropriate numbers (e.g., real, integer, whole) for the domain. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.
High School	2. Algebra and Functions	HS.F-IF.B. Interpreting Functions: Interpret functions that arise in applications in terms of the context.	6. Calculate and interpret the average rate of change presented symbolically or as a table, of a function over a specified interval. Estimate the rate of change from a graph. ★ (CCSS: HS.F-IF.B.6)	6. Estimate the rate of change from a graph.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-IF.C. Interpreting Functions: Analyze functions using different representations.	7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. ★ (CCSS: HS.F-IF.C.7) Graph linear and quadratic functions and show intercepts, maxima, and minima. (CCSS: HS.F-IF.C.7.a) Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. (CCSS: HS.F-IF.C.7.b) Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. (CCSS: HS.F-IF.C.7.c) (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior. (CCSS: HS.F-IF.C.7.d) Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude. (CCSS: HS.F-IF.C.7.e)	7. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-IF.C. Interpreting Functions: Analyze functions using different representations.	8. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. (CCSS: HS.F-IF.C.8)Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. (CCSS: HS.F-IF.C.8.a) Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as y = $(1.02)^t$, y = $(0.97)^t$, y = $(1.01)12^t$, $y(1.2)^{t/10}$, and classify them as representing exponential growth or decay. (CCSS: HS.F-IF.C.8.b)	8. N/A
High School	2. Algebra and Functions	HS.F-IF.C. Interpreting Functions: Analyze functions using different representations.	9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum. (CCSS: HS.F-IF.C.9)	9. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-BF.A. Building Functions: Build a function that models a relationship between two quantities.	1. Write a function that describes a relationship between two quantities; (CCSS: HS.F-BF.A.1) Determine an explicit expression, a recursive process, or steps for calculation from a context. (CCSS: HS.F-BF.A.1.a) Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model. (CCSS: HS.F-BF.A.1.b) (+) Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h (t) is the height of a weather balloon as a function of time, then T (h (t)) is the temperature at the location of the weather balloon as a function of time. (CCSS: HS.F-BF.A.1.c)	1. Write or select a function that describes a relationship between two quantities.
High School	2. Algebra and Functions	HS.F-BF.A. Building Functions: Build a function that models a relationship between two quantities.	2. Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms. ★; (CCSS: HS.F-BF.A.2)	2. Write or select arithmetic and geometric sequences of whole numbers that match a given recursive rule.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-BF.B. Building Functions: Build new functions from existing functions.	3. Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f (kx), and f(x + k) for specific values of k both positive and negative; find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. (CCSS: HS.F-BF-B.3)	3. N/A
High School	2. Algebra and Functions	HS.F-BF.B. Building Functions: Build new functions from existing functions.	4. Find inverse functions. (CCSS: HS.F-BF.B.4)Solve an equation of the form f(x) = c for a simple function f that has an inverse and write an expression for the inverse. For example, $f(x) = 2x^3$ or f(x) = x+1/x-1 for x ≠ 1. (CCSS: HS.F-BF.B.4.a) (+) Verify by composition that one function is the inverse of another. (CCSS: HS.F-BF.B.4.b) (+) Read values of an inverse function from a graph or table, given that the function has an inverse. (CCSS: HS.F-BF.B.4.c) (+) Produce an invertible function from a non-invertible function by restricting the domain. (CCSS: HS.F-BF.B.4.d)	4. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-BF.B. Building Functions: Build new functions from existing functions.	5. (+) Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents. (CCSS: HS.F-BF.B.5)	5. N/A
High School	2. Algebra and Functions	HS.F-LE.A. Linear, Quadratic & Exponential Models: Construct and compare linear, quadratic, and exponential models and solve problems.★	1. Distinguish between situations that can be modeled with linear functions and with exponential functions. (CCSS: HS.F-LE.A.1)Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. (CCSS: HS.F-LE.A.1.a) Identify situations in which one quantity changes at a constant rate per unit interval relative to another. (CCSS: HS.F-LE.A.1.b) Identify situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. (CCSS: HS.F-LE.A.1.c)	1. Distinguish between situations that can be modeled with linear functions and with exponential functions.
High School	2. Algebra and Functions	HS.F-LE.A. Linear, Quadratic & Exponential Models: Construct and compare linear, quadratic, and exponential models and solve problems.★	2. Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). (CCSS: HS.F-LE.A.2)	2. Construct a linear function such as y = mx to show that these functions increase by equal amounts over equal intervals.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-LE.A. Linear, Quadratic & Exponential Models: Construct and compare linear, quadratic, and exponential models and solve problems.★	3. Use graphs and tables to describe that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function. (CCSS: HS.F-LE.A.3)	3. Use graphs to describe a quantity increasing exponentially eventually exceeds a quantity increasing linearly.
High School	2. Algebra and Functions	HS.F-LE.A. Linear, Quadratic & Exponential Models: Construct and compare linear, quadratic, and exponential models and solve problems.★	4. For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where a, c, and d are numbers and the base b is 2, 10, or e; evaluate the logarithm using technology. (CCSS: HS.F-LE.A.4)	4. N/A
High School	2. Algebra and Functions	HS.F-LE.B. Linear, Quadratic, & Exponential Models: Interpret expressions for functions in terms of the situation they model.★	5. Interpret the parameters in a linear or exponential function in terms of a context. (CCSS: HS.F-LE.B.5)	5. N/A
High School	2. Algebra and Functions	HS.F-TF.A. Trigonometric Functions: Extend the domain of trigonometric functions using the unit circle.	1. (+) Use radian measure of an angle as the length of the arc on the unit circle subtended by the angle. (CCSS: HS.F-TF.A.1)	1. N/A
High School	2. Algebra and Functions	HS.F-TF.A. Trigonometric Functions: Extend the domain of trigonometric functions using the unit circle.	2. (+) Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle. (CCSS: HS.F-TF.A.2)	2. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-TF.A. Trigonometric Functions: Extend the domain of trigonometric functions using the unit circle.	3. (+) Use special triangles to determine geometrically the values to sine, cosine, tangent for π/3, π/4, and π/6 and use the unit circle to express the values sine, cosine, and tangent for x, π+x, and 2π-x and in terms of their values for x where x is any real number. (CCSS: HS.F-TF.A.3)	3. N/A
High School	2. Algebra and Functions	HS.F-TF.A. Trigonometric Functions: Extend the domain of trigonometric functions using the unit circle.	4. (+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions. (CCSS: HS.F-TF.A.4)	4. N/A
High School	2. Algebra and Functions	HS.F-TF.B. Trigonometric Functions: Model periodic phenomena with the trigonometric functions.	5. (+) Model periodic phenomena with trigonometric functions with specified amplitude, frequency, and midline. ★ (CCSS: HS.F-TF.B.5)	5. N/A
High School	2. Algebra and Functions	HS.F-TF.B. Trigonometric Functions: Model periodic phenomena with the trigonometric functions.	6. (+) Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed. (CCSS: HS.F-TF.B.6)	6. N/A
High School	2. Algebra and Functions	HS.F-TF.B. Trigonometric Functions: Model periodic phenomena with the trigonometric functions.	7. (+) Use inverse function to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.★ (CCSS: HS.F-TF.B.7)	7. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	2. Algebra and Functions	HS.F-TF.C. Trigonometric Functions: Prove and apply trigonometric identities.	8. (+) Prove the Pythagorean identity sin^2 (θ)+cos^2 (θ)=1 and use it to find sin(θ), cos(θ), or tan(θ) given sin(θ), cos(θ), or tan(θ) and the quadrant of the angle. (CCSS: HS.F-TF.C.8)	8. N/A
High School	2. Algebra and Functions	HS.F-TF.C. Trigonometric Functions: Prove and apply trigonometric identities.	9. (+) Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems. (CCSS: HS.F-TF.C.9)	9. N/A
High School	3. Data, Statistics, and Probability	HS.S-ID.A. Interpreting Categorical & Quantitative Data: Summarize, represent, and interpret data on a single count or measurement variable.	1. Model data in context with plots on the read number line (dot plots, histograms, and box plots). (CCSS: HS.S-ID.A.1)	1. Model data in context with plots on the real number line (dot plots, histograms)..1)
High School	3. Data, Statistics, and Probability	HS.S-ID.A. Interpreting Categorical & Quantitative Data: Summarize, represent, and interpret data on a single count or measurement variable.	2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. (CCSS: HS.S-ID.A.2)	2. Use visual displays of data distributions with similar scales to judge which distribution has the greater center and/or greater spread.
High School	3. Data, Statistics, and Probability	HS.S-ID.A. Interpreting Categorical & Quantitative Data: Summarize, represent, and interpret data on a single count or measurement variable.	3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers). (CCSS: HS.S-ID.A.3)	3. Interpret general trends about the center and spread of data given a graph or chart.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	3. Data, Statistics, and Probability	HS.S-ID.A. Interpreting Categorical & Quantitative Data: Summarize, represent, and interpret data on a single count or measurement variable.	4. Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages and identify data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve. (CCSS: HS.S-ID.A.4)	4. Calculate the mean of a given data containing up to at least five data points (EE.S-ID.4).
High School	3. Data, Statistics, and Probability	HS.S-ID.B. Interpreting Categorical & Quantitative Data: Summarize, represent, and interpret data on two categorical and quantitative variables.	5. Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data. (CCSS: HS.S-ID.B.5)	5. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	3. Data, Statistics, and Probability	HS.S-ID.B. Interpreting Categorical & Quantitative Data: Summarize, represent, and interpret data on two categorical and quantitative variables.	6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. (CCSS: HS.S-ID.B.6)Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. (CCSS: HS.S-ID.B.6.a) Informally assess the fit of a function by plotting and analyzing residuals. (CCSS: HS.S-ID.B.6.b) Fit a linear function for a scatter plot that suggests a linear association. (CCSS: HS.S-ID.B.6.c)	6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. a. Informally fit a linear function for a scatter plot that suggests a linear association.
High School	3. Data, Statistics, and Probability	HS.S-ID.B. Interpreting Categorical & Quantitative Data: Summarize, represent, and interpret data on two categorical and quantitative variables.	7. Distinguish between correlation and causation. (CCSS: HS.S-ID.C.9)	7. Distinguish between correlation and causation.
High School	3. Data, Statistics, and Probability	HS.S-ID.C. Interpreting Categorical & Quantitative Data: Interpret linear models.	8. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. (CCSS: HS.S-ID.C.7)	8. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. a. For example, a linear model $y = 2x + 5$ that fits a scatterplot of height of a tree versus years since planting could represent an average growth

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
				of 2 feet per year and a height of 5 feet when initially planted.
High School	3. Data, Statistics, and Probability	HS.S-ID.C. Interpreting Categorical & Quantitative Data: Interpret linear models.	9. Using technology, compute and interpret the correlation coefficient of a linear fit. (CCSS: HS.S-ID.C.8)	9. N/A
High School	3. Data, Statistics, and Probability	HS.S-IC.A. Making Inferences & Justifying Conclusions: Understand and evaluate random processes underlying statistical experiments.	1. Describe statistics as a process for making inferences about population parameters based on a random sample from that population. (CCSS: HS.S-IC.A.1)	1. Demonstrate an understanding that a sample can tell us something about the population it comes from. a. For example, predict that the average height of all 10th graders is about 5 feet 7 inches if the average height of one class is about 5 feet 7 inches.
High School	3. Data, Statistics, and Probability	HS.S-IC.A. Making Inferences & Justifying Conclusions: Understand and evaluate random processes underlying statistical experiments.	2. Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model? (CCSS: HS.S-IC.A.2)	2. Determine the likelihood of an event occurring when the outcomes are equally likely to occur. a. For example, determine that the likelihood of a coin landing heads is 0.5 because there are two sides and each is equally likely to land facing up (EE.S-IC.1-2).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	3. Data, Statistics, and Probability	HS.S-IC.B. Making Inferences & Justifying Conclusions: Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	3. Identify the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. (CCSS: HS.S-IC.B.3)	3. N/A
High School	3. Data, Statistics, and Probability	HS.S-IC.B. Making Inferences & Justifying Conclusions: Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	4. Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling. (CCSS: HS.S-IC.B.4)	4. N/A
High School	3. Data, Statistics, and Probability	HS.S-IC.B. Making Inferences & Justifying Conclusions: Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	5. Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. (CCSS: HS.S-IC.B.5)	5. N/A
High School	3. Data, Statistics, and Probability	HS.S-IC.B. Making Inferences & Justifying Conclusions: Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	6. Evaluate reports based on data. Define and explain the meaning of significance, both statistical (using p-values) and practical (using effect size). (CCSS: HS.S-IC.B.6)	6. N/A
High School	3. Data, Statistics, and Probability	HS.S-CP.A. Conditional Probability & the Rules of Probability: Understand independence and conditional probability and use them to interpret data.	1. Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not"). (CCSS: HS.S-CP.A.1)	1. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	3. Data, Statistics, and Probability	HS.S-CP.A. Conditional Probability & the Rules of Probability: Understand independence and conditional probability and use them to interpret data.	2. Explain that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent. (CCSS: HS.S-CP.A.2)	2. N/A
High School	3. Data, Statistics, and Probability	HS.S-CP.A. Conditional Probability & the Rules of Probability: Understand independence and conditional probability and use them to interpret data.	3. Using the conditional probability of A given B as P(A \mbox{and} B)/P(B) , interpret the independence of A and B as saying that the conditional probability of A given B is the same as the probability of A , and the conditional probability of B given A is the same as the probability of B . (CCSS: HS.S-CP.A.3)	3. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	3. Data, Statistics, and Probability	HS.S-CP.A. Conditional Probability & the Rules of Probability: Understand independence and conditional probability and use them to interpret data.	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 10th grade. Do the same for other subjects and compare the results. (CCSS: HS.S-CP.A.4)	4. N/A
High School	3. Data, Statistics, and Probability	HS.S-CP.A. Conditional Probability & the Rules of Probability: Understand independence and conditional probability and use them to interpret data.	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. (CCSS: HS.S-CP.A.5)	5. Recognize independent and dependent probability in everyday language and everyday situations. a. For example, recognize that the probability of flipping heads on a second coin flip is independent of the first flip, but the probability of being dealt an ace from a deck of cards depends on what cards have already been dealt.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	3. Data, Statistics, and Probability	HS.S-CP.B. Conditional Probability & the Rules of Probability: Use the rules of probability to compute probabilities of compound events in a uniform probability model.	6. Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model. (CCSS: HS.S-CP.B.6)	6. N/A
High School	3. Data, Statistics, and Probability	HS.S-CP.B. Conditional Probability & the Rules of Probability: Use the rules of probability to compute probabilities of compound events in a uniform probability model.	7. Apply the Addition Rule, P(A or B) = P (A) + P (B) – P(A and B) , and interpret the answer in terms of the model. (CCSS: HS.S-CP.B.7)	7. N/A
High School	3. Data, Statistics, and Probability	HS.S-CP.B. Conditional Probability & the Rules of Probability: Use the rules of probability to compute probabilities of compound events in a uniform probability model.	8. (+) Apply the general Multiplication Rule in a uniform probability model, P(A and B)=P(A)P(B|A)=P(B)P(A|B), and interpret the answer in terms of the model. (CCSS: HS.S-CP.B.8)	8. N/A
High School	3. Data, Statistics, and Probability	HS.S-CP.B. Conditional Probability & the Rules of Probability: Use the rules of probability to compute probabilities of compound events in a uniform probability model.	9. (+) Use permutations and combinations to compute probabilities of compound events and solve problems. (CCSS: HS.S-CP.B.9)	9. N/A
High School	3. Data, Statistics, and Probability	HS.S-MD.A. Using Probability to Make Decisions: Calculate expected values and use them to solve problems.	1. (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions. (CCSS: HS.S-MD.A.1)	1. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	3. Data, Statistics, and Probability	HS.S-MD.A. Using Probability to Make Decisions: Calculate expected values and use them to solve problems.	2. (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution. (CCSS: HS.S-MD.A.2)	2. N/A
High School	3. Data, Statistics, and Probability	HS.S-MD.A. Using Probability to Make Decisions: Calculate expected values and use them to solve problems.	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 multiple-choice test where each question has four choices, and find the expected grade under various grading schemes. (CCSS: HS.S-MD.A.3)	3. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	3. Data, Statistics, and Probability	HS.S-MD.A. Using Probability to Make Decisions: Calculate expected values and use them to solve problems.	4. (+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households? (CCSS: HS.S-MD.A.4)	4. N/A
High School	3. Data, Statistics, and Probability	HS.S-MD.B. Using Probability to Make Decisions: Use probability to evaluate outcomes of decisions.	5. (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. (CCSS: HS.S-MD.B.5) Find the expected payoff for a game of chance. *For example, find the expected winnings from a state lottery ticket or game at a fast-food restaurant.* (CCSS: HS.S-MD.B.5.a) Evaluate and compare strategies on the basis of expected values. *For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or major accident.* (CCSS: HS.S-MD.B.5.b)	5. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	3. Data, Statistics, and Probability	HS.S-MD.B. Using Probability to Make Decisions: Use probability to evaluate outcomes of decisions.	6. (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator). (CCSS: HS.S-MD.B.6)	6. N/A
High School	3. Data, Statistics, and Probability	HS.S-MD.B. Using Probability to Make Decisions: Use probability to evaluate outcomes of decisions.	7. (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game). (CCSS: HS.S-MD.B.7)	7. N/A
High School	4. Geometry	HS.G-CO.A. Congruence: Experiment with transformations in the plane.	1. State precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. (CCSS: HS.G-CO.A.1)	1. Know the attributes of perpendicular lines, parallel lines, line segments, angles, and circles (EE.G-CO.1).

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-CO.A. Congruence: Experiment with transformations in the plane.	2. Represent transformations in the plane using e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch). (CCSS: HS.G-CO.A.2)	2. N/A
High School	4. Geometry	HS.G-CO.A. Congruence: Experiment with transformations in the plane.	3. Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself. (CCSS: HS.G-CO.A.3)	3. N/A
High School	4. Geometry	HS.G-CO.A. Congruence: Experiment with transformations in the plane.	4. Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. (CCSS: HS.G-CO.A.4)	4. Describe rotations with an angle measure (90, 180, and 270 degrees), reflections with a line of symmetry, and translations with a direction and distance.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-CO.A. Congruence: Experiment with transformations in the plane.	5. Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using appropriate tools (e.g., graph paper, tracing paper, or geometry software). Specify a sequence of transformations that will carry a given figure onto another. (CCSS: HS.G-CO.A.5)	5. Given a geometric figure and a rotation, reflection, or translation of that figure, identify the corresponding parts.
High School	4. Geometry	HS.G-CO.B. Congruence: Understand congruence in terms of rigid motions.	6.Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent. (CCSS: HS.G-CO.B.6)	6. Given a geometric figure, rotate (90, 180, or 270 degrees) or translate it a given amount or reflect it over a given line of symmetry.
High School	4. Geometry	HS.G-CO.B. Congruence: Understand congruence in terms of rigid motions.	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. (CCSS: HS.G-CO.B.7)	7. Show that two triangles are congruent by matching up their three pairs of corresponding sides and three pairs of corresponding angles.

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-CO.B. Congruence: Understand congruence in terms of rigid motions.	8. Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions. (CCSS: HS.G-CO.B.8)	8. Explain how every triangle with the same three length sides is congruent, but the same is not true for every triangle with the same three angles.
High School	4. Geometry	HS.G-CO.C. Congruence: Prove geometric theorems.	9. Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints. (CCSS: HS.G-CO.C.9)	9. N/A
High School	4. Geometry	HS.G-CO.C. Congruence: Prove geometric theorems.	10. Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180^\circ ; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point. (CCSS: HS.G-CO.C.10)	10. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-CO.C. Congruence: Prove geometric theorems.	11. Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals. (CCSS: HS.G-CO.C.11)	11. N/A
High School	4. Geometry	HS.G-CO.D. Congruence: Make geometric constructions.	12. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line. (CCSS: HS.G-CO.D.12)	12. N/A
High School	4. Geometry	HS.G-CO.D. Congruence: Make geometric constructions.	13. (+) Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. (CCSS: HS.G-CO.D.13)	13. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-SRT.A. Similarity, Right Triangles, and Trigonometry: Understand similarity in terms of similarity transformations.	1. Verify experimentally the properties of dilations given by a center and a scale factor. (CCSS: HS.G-SRT.A.1)Show that 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. (CCSS: HS.G-SRT.A.1.a) Show that the dilation of a line segment is longer or shorter in the ratio given by the scale factor. (CCSS: HS.G-SRT.A.1.b)	1. N/A
High School	4. Geometry	HS.G-SRT.A. Similarity, Right Triangles, and Trigonometry: Understand similarity in terms of similarity transformations.	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. (CCSS: HS.G-SRT.A.2)	2. N/A
High School	4. Geometry	HS.G-SRT.A. Similarity, Right Triangles, and Trigonometry: Understand similarity in terms of similarity transformations.	3. Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar. (CCSS: HS.G-SRT.A.3)	3. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-SRT.B. Similarity, Right Triangles, and Trigonometry: Prove theorems involving similarity.	4. Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity. (CCSS: HS.G-SRT.B.4)	4. N/A
High School	4. Geometry	HS.G-SRT.B. Similarity, Right Triangles, and Trigonometry: Prove theorems involving similarity.	5. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. (CCSS: HS.G-SRT.B.5)	5. N/A
High School	4. Geometry	HS.G-SRT.C. Similarity, Right Triangles, and Trigonometry: Define trigonometric ratios and solve problems involving right triangles.	6. Explain that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles. (CCSS: HS.G-SRT.C.6)	6. N/A
High School	4. Geometry	HS.G-SRT.C. Similarity, Right Triangles, and Trigonometry: Define trigonometric ratios and solve problems involving right triangles.	7. Explain and use the relationship between the sine and cosine of complementary angles. (CCSS: HS.G-SRT.C.7)	7. N/A
High School	4. Geometry	HS.G-SRT.C. Similarity, Right Triangles, and Trigonometry: Define trigonometric ratios and solve problems involving right triangles.	8. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.★ (CCSS: HS.G-SRT.C.8)	8. N/A
High School	4. Geometry	HS.G-SRT.D. Similarity, Right Triangles, and Trigonometry: Apply trigonometry to general triangles.	9. (+) Derive the formula A=1/2 absin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side. (CCSS: HS.G-SRT.D.9)	9. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-SRT.D. Similarity, Right Triangles, and Trigonometry: Apply trigonometry to general triangles.	10. (+) Prove the Laws of Sines and Cosines and use them to solve problems. (CCSS: HS.G-SRT.D.10)	10. N/A
High School	4. Geometry	HS.G-SRT.D. Similarity, Right Triangles, and Trigonometry: Apply trigonometry to general triangles.	11. (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces). (CCSS: HS.G-SRT.D.11)	11. N/A
High School	4. Geometry	HS.G-C.A. Circles: Understand and apply theorems about circles.	1. Prove that all circles are similar. (CCSS: HS.G-C.A.1)	1. N/A
High School	4. Geometry	HS.G-C.A. Circles: Understand and apply theorems about circles.	2. Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle. (CCSS: HS.G-C.A.2)	2. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-C.A. Circles: Understand and apply theorems about circles.	3. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle. (CCSS: HS.G-C.A.3)	3. N/A
High School	4. Geometry	HS.G-C.A. Circles: Understand and apply theorems about circles.	4. (+) Construct a tangent line from a point outside a given circle to the circle. (CCSS: HS.G-C.A.4)	4. N/A
High School	4. Geometry	HS.G-C.B. Circles: Find arc lengths and areas of sectors of circles.	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. (CCSS: HS.G-C.B.5)	5. N/A
High School	4. Geometry	HS.G-GPE.A. Expressing Geometric Properties with Equations: Translate between the geometric description and the equation for a conic section.	1. Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation. (CCSS: HS.G-GPE.A.1)	1. N/A
High School	4. Geometry	HS.G-GPE.A. Expressing Geometric Properties with Equations: Translate between the geometric description and the equation for a conic section.	2. (+) Derive the equation of a parabola given a focus and directrix. (CCSS: HS.G-GPE.A.2)	2. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-GPE.A. Expressing Geometric Properties with Equations: Translate between the geometric description and the equation for a conic section.	3. (+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant. (CCSS: HS.G-GPE.A.3)	3. N/A
High School	4. Geometry	HS.G-GPE.B. Expressing Geometric Properties with Equations: Use coordinates to prove simple geometric theorems algebraically.	4. Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point (0, 2). (CCSS: HS.G-GPE.B.4)	4. N/A
High School	4. Geometry	HS.G-GPE.B. Expressing Geometric Properties with Equations: Use coordinates to prove simple geometric theorems algebraically.	5. Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point). (CCSS: HS.G-GPE.B.5)	5. N/A
High School	4. Geometry	HS.G-GPE.B. Expressing Geometric Properties with Equations: Use coordinates to prove simple geometric theorems algebraically.	6. Find the point on a directed line segment between two given points that partitions the segment in a given ratio. (CCSS: HS.G-GPE.B.6)	6. N/A
High School	4. Geometry	HS.G-GPE.B. Expressing Geometric Properties with Equations: Use coordinates to prove simple geometric theorems algebraically.	7. Use coordinates and the distance formula to compute perimeters of polygons and areas of triangles and rectangles. ★ (CCSS: HS.G-GPE.B.7)	7. Use coordinates and measure to find perimeters of polygons and areas of triangles and rectangles.

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High School	4. Geometry	HS.G-GMD.A. Geometric Measurement and Dimension: Explain volume formulas and use them to solve problems.	1. Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri's principle, and informal limit arguments. (CCSS: HS.G-GMD.A.1)	1. Predict the circumference or area of a circle or the volume of a cylinder, pyramid, or cone and then use a formula or model to test that prediction.
High School	4. Geometry	HS.G-GMD.A. Geometric Measurement and Dimension: Explain volume formulas and use them to solve problems.	2. (+) Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures. (CCSS: HS.G-GMD.A.2)	2. N/A
High School	4. Geometry	HS.G-GMD.A. Geometric Measurement and Dimension: Explain volume formulas and use them to solve problems.	3. Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. ★ (CCSS: HS.G-GMD.A.3)	3. Use volume formulas for cylinders, pyramids, and cones to solve problems.
High School	4. Geometry	HS.G-GMD.B. Geometric Measurement and Dimension: Visualize relationships between two-dimensional and three-dimensional objects.	4. Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects. (CCSS: HS.G-GMD.B.4)	4. Identify the shapes of two-dimensional cross-sections of three-dimensional objects. (EE.G-GMD.4)
High School	4. Geometry	HS.G-MG.A. Modeling with Geometry: Apply geometric concepts in modeling situations.	1. Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder) ★ (CCSS: HS.G-MG.A.1)	1. N/A

Grade	Standard	Grade Level Expectation	Evidence Outcome	Extended Evidence Outcome with Guidance and Support
High School	4. Geometry	HS.G-MG.A. Modeling with Geometry: Apply geometric concepts in modeling situations.	2. Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot) ★ (CCSS: HS.G-MG.A.2)	2. N/A
High School	4. Geometry	HS.G-MG.A. Modeling with Geometry: Apply geometric concepts in modeling situations.	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) ★ (CCSS: HS.G-MG.A.3)	3. N/A

(+) This expectation represents advanced work of high school.