OPERATIONS AND ALGEBRAIC THINKING - Use the four operations with whole numbers to solve problems

4.OA.1. Interpret a multiplication equation as a comparison, e.g., interpret 35 = 5 × 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.
4.OA.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.

EE4.OA.1-2. Demonstrate the connection between repeated addition and multiplication.

4	Apply repeated addition to solve a multiplication problem represented with numbers.
3	Demonstrate the connection between repeated addition and multiplication.
2	Demonstrate repeated addition to sums of 10.
1	Make a set of 10 and count to 10.

4.OA.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.

EE4.OA.3. Solve one-step word problems using addition or subtraction

4	Show multiple ways to arrive at the same product.
3	Show one way to arrive at a product.
2	Make equal sets and count to determine the product.
1	Replicate one way to arrive at a product.

OPERATIONS AND ALGEBRAIC THINKING - Gain familiarity with factors and multiples

4.OA.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.

EE4.OA.4. Show one way to arrive at product.

4	Show multiple ways to arrive at the same product.
3	Show one way to arrive at a product.
2	Make equal sets and count to determine the product
1	Replicate one way to arrive at a product.

OPERATIONS AND ALGEBRAIC THINKING - Generate and analyze patterns

4.OA.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.

EE4.OA.5. Use repeating patterns to make predictions.

4	Create a pattern based on a given rule and their prediction of what comes next.
3	Use repeating patterns to make predictions.
2	Replicate a pattern.
1	Differentiate between a pattern and a non-pattern.

NUMBERS AND OPERATIONS BASE TEN - Generalize place value understanding for multi-digit whole numbers

4.NBT.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division.

EE4.NBT.1. Compare numbers to each other based on place value groups by composing and decomposing to 50.

4	Compare numbers to each other based on place value groups by composing and decomposing greater than 50.
3	Compare numbers to each other based on place value groups by composing and decomposing to 50.
2	Compose and decompose whole numbers to 20.
1	Identify whole numbers to 10.

4.NBT.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.

EE4.NBT.2. Compare whole numbers (<, >, =).

4	Compare whole numbers using symbols (<, >, =).
3	Compare whole numbers (<, >, =).
2	Compare whole numbers (<, >, =) from 0-20.
1	Compare whole numbers (<, >) from 0-10.

4.NBT.3. Use place value understanding to round multi-digit whole numbers to any place. Use place value understanding and properties of operations to perform multi-digit arithmetic.

EE4.NBT.3. Round one- and two-digit whole numbers from 0—50 to the nearest 10.

4	Round one- and two-digit numbers, greater than 50, to the nearest 10.
3	Round single one- and two-digit whole numbers from 0-50 to the nearest 10.
2	Round single one-digit numbers to the nearest 10.
1	Identify numbers that are more or less than five on a number line.

NUMBERS AND OPERAITONS BASE TEN - Use place value understanding and properties of operations to perform multi-digit arithmetic

4.NBT.4. Fluently add and subtract multi-digit whole numbers using the standard algorithm.

EE4.NBT 4. Add and subtract double-digit whole numbers.

4	Add and subtract multi-digit whole numbers.
3	Add and subtract double-digit whole numbers.
2	Solve addition with numbers 20-50 and subtraction problems with numbers 0-20.
1	Solve single digit addition problems to add one to another number.

NUMBERS AND OPERATIONS FRACTIONS - Extend understanding of fraction equivalence and ordering

4.NF.1. Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

4.NF.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.

EE4.NF.1-2. Understand 2/4 = 1/2.

4	Understand two fractions having unlike denominators are equivalent if they represent the same size portion of a whole.
3	Understand 2/4 = 1/2.
2	Understand 4/4 or 2/2 = 1.
1	Understand that two halves is equivalent to one whole.

NUMBERS AND OPERATIONS FRACTIONS - Build fractions from unit fractions

4.NF.3. Understand a fraction a/b with a > 1 as a sum of fractions 1/b.

- Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
- Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.
- 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.
- 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
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EE4.NF.3. Differentiate between whole, half, and fourth.

4	Differentiate fractional parts less than 1/4.
3	Differentiate between whole, half, and fourth.
2	Differentiate between whole and half.
1	Recognize that fractions are part of a whole.

MEASUREMENT AND DATA - Solve problems involving measurement and conversion of measurements

4.MD.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),

EE4.MD.1. Identify the smaller measurement units that divide a larger unit within a measurement system.

4	Solve problems by demonstrating whole units can be broken into smaller units.
3	Identify the smaller measurement units that divide a larger unit within a measurement system
2	Identify standard units of measurements.
1	Use measurement tools.

4.MD.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.

EE4.MD.2.a. Tell time to the half hour using a digital or to the hour using an analog clock.

4	Tell time to the quarter hour using a digital or analog clock.
3	Tell time to the half hour using a digital clock or to the hour using an analog clock.
2	Relate time to the hour to activities.
1	Differentiate a digital and analog clock from other measurement tools as a tool for telling time.

4.MD.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.

EE4.MD.2.b. Select the appropriate measurement tool from two related

4	Use the appropriate measurement tools to solve problems.
3	Select the appropriate measurement tool from two related options to solve problems.
2	Select the appropriate measurement tool from two unrelated options to solve problems.
1	Identify measurement tools.

4.MD.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.

EE4.MD.2.c. Use standard measurement to compare lengths of objects.

4	Use standard measurements to compare length of objects and indicate how many each is by standard measures.
3	Use standard measurement to compare lengths of objects.
2	Measure length of objects using standard tools, such as rulers, yardsticks, and meter sticks.
1	Identify items as long or short.

4.MD.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.

EE4.MD.2.d. Identify objects that have volume..

4	Determine volume of a cube by counting units of measure.
3	Identify objects that have volume.
2	Demonstrate solid or full, empty and part full.
1	Identify vocabulary related to volume (full, empty).

4.MD.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.

EE4.MD.2.e. Identify coins (penny, nickel, dime, quarter) and their values.

4	Identify relative value of different collections of coins.
3	Identify coins (penny, nickel, dime, quarter) and their values
2	Match coins that are alike (penny, nickel, dime, quarter).
1	Select objects that are used for money.

MEASUREMENT AND DATA - Represent and interpret data

4.MD.4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in 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.

EE4.MD.4.a. Insert data into a pre-constructed bar graph template.

4	Insert data into a graph to represent a data set with a scale equal to 10 (0 to 10 by ones).
3	Insert data into a pre-constructed bar graph template.
2	Identify an appropriate scale for the data set.
1	Given a topic, identify appropriate data to collect.

4.MD.4. Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in 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.

EE4.MD.4.b. Interpret data from a variety of graphs to answer questions.

4	Create their own questions that can be answered by the data on a picture and bar graph.
3	Interpret data from a variety of graphs to answer questions.
2	Make observational statements about data in a picture and bar graph.
1	Demonstrate awareness that symbols may be used to represent objects and events.

MEASUREMENT AND DATA - Geometric measurement: understand concepts of angle and measure angles

4.MD.5. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:

- 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.
- An angle that turns through n one-degree angles is said to have an angle measure of n degrees.

EE4.MD.5. Recognize angles in geometric shapes.

4	Label different types of angles in geometric shapes.
3	Recognize angles in geometric shapes.
2	Identify an angle.
1	Identify shapes that contain angles.

4.MD.6. Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

EE4.MD.6. Identify angles as larger and smaller.

4	Construct angles of various sizes.
3	Identify angles as larger and smaller.
2	Differentiate angles in shapes.
1	Replicate an angle.

GEOMETRY - Draw and identify lines and angles, and classify shapes by properties of their lines and angles

4.G.1. Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

EE4.G.1. Distinguish between parallel and intersecting lines.

4	Create a representation of parallel and intersecting lines.
3	Distinguish between parallel and intersecting lines.
2	Identify an intersecting line.
1	Identify a line.

4.G.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.

EE4.G.2. Distinguish between different attributes of shapes (lines, curves, angles).

4	Classify shapes according to attributes.
3	Distinguish between different attributes of shapes (lines, curves, angles).
2	Identify attributes of geometric shapes
1	Identify curves.

4.G.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.

EE4.G.3 Recognize a line of symmetry in a simple shape.

4	Locate the line of symmetry in a geometric shape.
3	Recognize a line of symmetry in a simple shape.
2	Recognize polygons.
1	Recognize simple shapes (square, triangle, and rectangle).