THE NUMBER SYSTEM - Know that there are numbers that are not rational, and approximate them by rational numbers

8.NS.1. Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

EE8.NS.1. Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one.

4	Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends that may be greater than one.
3	Subtract fractions with like denominators (halves, thirds, fourths, and tenths) with minuends less than or equal to one.
2	Use models to subtract halves, thirds, and fourths.
1	Use models to identify the whole and find the missing pieces of a whole using halves.

8.NS.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., π2).

EE8.NS.2. Represent different forms and values of decimal numbers using fractions with numerators that are multiples of five and a denominator of 100.

4	Represent different forms and values of decimal numbers to the hundreds place (decimal, fraction, hundreds grid, and money representation).
3	Represent different forms and values of decimal numbers using fractions with numerators that are multiples of five and a denominator of 100.
2	Distinguish between a part represented by a decimal and a whole number without decimals.
1	Identify a part of a whole in concrete real-world objects.

EXPRESSIONS AND EQUATIONS - Work with radicals and integer exponents

8.EE.1. Know and apply the properties of integer exponents to generate equivalent numerical expressions.
8.EE.2. Use square root and cube root symbols to represent solutions to equations of the form x2=p and x3= p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.
8.EE.3. Use numbers expressed in the form of a single digit times a whole- number power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.

8.EE.4. Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.

EE8.EE.1-4. Compose and decompose numbers to three digits.

4	Use powers of 10 to compose and decompose numbers.
3	Compose and decompose numbers to three digits.
2	Use models to represent the composition of numbers.
1	Recognize the specific value a number represents

EXPRESSIONS AND EQUATIONS - Understand the connections between proportional relationships, lines, and linear equations

8.EE.5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.

8.EE.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.

EE8.EE.5-6. Graph a simple ratio using the x and y axis points when given the ratio in standard form (2:1) and convert to 2/1.

4	Graph a simple ratio using the x and y axis points when given the ratio in standard form (2:1) and expand on the ratio by two or more points.
3	Graph a simple ratio using the x and y axis points when given the ratio in standard form (2:1) and convert to 2/1.
2	Identify a specific data point when given the coordinates.
1	Place or locate data on a simple two-category graph.

EXPRESSIONS AND EQUATIONS - Analyze and solve linear equations and pairs of simultaneous linear equations

8.EE.7. Solve linear equations in one variable.

EE8.EE.7. Solve algebraic expressions using simple addition and subtraction.

4	Solve algebraic expressions using two-digit addition and subtraction.
3	Solve algebraic expressions using simple addition and subtraction.
2	Solve simple addition and subtraction problems.
1	Distinguish between a letter and a number.

FUNCTIONS - Define, evaluate, and compare functions

8.F.1. Understand that a function is a rule that assigns to each input exactly one output.
8.F.2. Compare properties of two functions each represented in a different way.
8.F.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.

EE8.F.1-3. Given a function table, identify the missing number.

4	Identify the rule and express the rule for the missing variable in a function table
3	Identify the missing number in a function table
2	Identify the relationship between two numbers
1	Match the element of a sequence within the sequence

FUNCTIONS - Use functions to model relationships between quantities

8.F.4. Construct a function to model a linear relationship between two quantities.

EE8.F.4. Determine the values or rule of a function using a graph or a table.

4	Given the input values and a rule, complete the output.
3	Determine the values or rule of a function using a graph or a table.
2	Navigate, read, use, or apply a graph or table.
1	Identify the different parts of a graph or a table.

8.F.5. Describe qualitatively the functional relationship between two quantities by analyzing a graph.

EE8.F.5. Describe how a graph represents a relationship between two quantities.

4	Describe how a graph represents a relationship between two quantities and use the graph to answer questions using that relationship.
3	Describe how a graph represents a relationship between two quantities.
2	Answer questions about data from a graph.
1	Place data in a graph.

GEOMETRY - Understand congruence and similarity using physical models, transparencies, or geometry software

8.G.1. Verify experimentally the properties of rotations, reflections, and translations
8.G.2. Understand 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
8.G.3. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.

EE8.G.1-3. Identify similarity and congruence (same) in objects and shapes containing angles without translations.

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3	Identify similarity and congruence (same) in objects and shapes containing angles without translations.
2	Match similar shapes.
1	Match shapes using a three-dimensional object.

8.G.4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

EE8.G.4. Identify similar shapes with and without rotation.

4	Determine if geometric shapes are similar with rotations or reflections.
3	Identify similar shapes with and without rotation.
2	Identify similar geometric shapes.
1	Recognize geometric shapes

8.G.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.

EE8.G.5. Compare measures of angles to a right angle (greater than, less than, or equal to).

4	Compare measures of angles formed by intersecting lines
3	***Compare measures of angles to a right angle (greater than, less than, or equal to).***
2	Recognize a right angle
1	Recognize an angle

GEOMETRY - Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres

8.G.9. Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

EE8.G.9. Identify volume of common measures (cups, pints, quarts, gallons, etc.).

4	Apply knowledge of volume.
3	Identify volume of common measures (cups, pints, gallons, etc.).
2	Identify which is more or less?
1	Experience volume

STATISTICS AND PROBABILITY - Investigate patterns of association in bivariate data

8.SP.4. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table.

EE8.SP.4. Construct a graph or table from given categorical data and compare data categorized in the graph or table.

4	Conduct an experiment, collect data, and construct a graph or table.
3	Construct a graph or table from given categorical data and compare data categorized in the graph or table.
2	Collect and organize data.
1	Organize data into groups.