"I Can" Do Math

(The Number System)

I can understand irrational numbers and approximate them by rational numbers.

8.NS.A.1 I can show that every number has a decimal.

8.NS.A.1 I can change every repeating decimal into a rational number.

8.NS.A.1 I can show that the decimal expansion eventually repeats for rational numbers.

8.NS.A.1 I can change a repeating decimal expansion into a rational number.

8.NS.A.2 I can use rational approximations of irrational numbers to compare the size of irrational numbers, locate and plot them approximately on a number line diagram, and then estimate the value of the expressions.

8.NS.A.2 I can use estimate values to compare two or more irrational numbers.

"I Can" Do Math

(Expressions & Equations)

I can work with radicals and integer exponents.

- ☐ 8.EE.A.1 I can use the properties of integer exponents to simplify expressions.
- ☐ 8.EE.A.2 I can use square 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.
- ☐ 8.EE.A.2 I can evaluate the square root of a perfect square and the cube root of a perfect cube.
- ☐ 8.EE.A.2 I can understand that the square root of 2 is irrational.
- ☐ 8.EE.A.3 I can write an estimation of a large quantity by expressing it as the product of a single-digit number and a positive power of ten.
- ☐ 8.EE.A.3 I can write an estimation of a very small quantity by expressing it as the product of a single-digit number and a negative power of ten.
- ☐ 8.EE.A.3 I can compare quantities written as the product of a single-digit number and a power of ten.
- ☐ 8.EE.A.4 I can solve operations (+,-,x,÷) with two numbers expressed in scientific notation, including problems that contain both decimals and scientific notation.
- ☐ 8.EE.A.4 I can use scientific notation and choose units of appropriate size for very large or very small measurements.
- ☐ 8.EE.A.4 I can interpret scientific notation that has been generated by technology.

"I Can" Do Math

(Expressions & Equations)

I can understand the connections between proportional relationships, lines and linear equations.

- ☐ 8.EE.B.5 I can graph proportional relationships, interpreting the unit rate as the slope of the graph.
- ☐ 8.EE.B.5 I can use a table, an equation or graph to decide the unit rate of a proportional relationship.
- ☐ 8.EE.B.5 I can use the unit rate of a graphed proportional unit rate to compare different proportional relationships.
- ☐ 8.EE.B.6 I can use similar triangles to explain why the slope *m* is the same between two points on a non-vertical line in a coordinate plane.
- ☐ 8.EE.B.6 I can explain that an equation in the form of $y=mx$ will represent the graph of a proportional relationship with a slope of *m* and y-intercept of 0.
- ☐ 8.EE.B.6 I can explain that an equation in the form of $y=mx + b$ represents the graph of a linear relationship with a slope of *m* and a y-intercept of b.

"I Can" Do Math

(Expressions & Equations)

I can analyze and solve linear equations and pairs of simultaneous linear equations.

- ☐ 8.EE.C.7 I can solve linear equations in one variable.
- ☐ 8.EE.C.7A I can simplify a linear equation by using the distributive property and combining like terms.
- ☐ 8.EE.C.7A I can give examples of linear equations with one solution, infinitely many solutions or no solutions.
- ☐ 8.EE.C.7B I can solve linear equations with rational number coefficients, including equations when solutions require expanding expressions using the distributive property and combining like terms.
- ☐ 8.EE.C.8 I can analyze and solve pairs of simultaneous linear equations.
- ☐ 8.EE.C.8A I can explain solutions to a system of two linear equations in two variables as the point of intersection of their graph.
- ☐ 8.EE.C.8A I can describe the point of intersection between two lines as the point that satisfies both equations at the same time.

"I Can" Do Math

(Expressions & Equations)

- ☐ 8.EE.C.8B I can solve a system of two linear equations in two unknowns algebraically.
- ☐ 8.EE.C.8B I can identify cases in which a system of two equations in two unknowns has no solution or an infinite number of solutions.
- ☐ 8.EE.C.8B I can solve simple cases of systems of two linear equations in two variables by inspection.
- ☐ 8.EE.C.8C I can solve real-world and mathematical problems leading to two linear equations in two variables.

"I Can" Do Math

(Functions)

I can understand, interpret and compare functions.

- ☐ 8.F.A.1 I can define a function as a rule, where for each input there is exactly one output.
- ☐ 8.F.A.1 I can show the relationship between inputs and outputs of a function by graphing them as ordered pairs on a coordinate grid.
- ☐ 8.F.A.2 I can determine the properties of a function given the inputs and outputs in a table.
- ☐ 8.F.A.2 I can compare the properties of two functions that are represented differently (equations, tables, graphs or given verbally).
- ☐ 8.F.A.3 I can explain why the equation $y=mx+b$ represents a linear function and then find the slope and y-intercept in relation to the function.
- ☐ 8.F.A.3 I can give examples of relationships and create a table of values that can be defined as a non-linear function.

"I Can" Do Math

(Functions)

I can use functions to show relationships between quantities.

- ☐ 8.F.B.4 I can create a function to model a linear relationship between two quantities.
- ☐ 8.F.B.4 I can determine the rate of change and initial value of the function from decryption of the relationship or two (x,y) values, including reading a table or graph.
- ☐ 8.F.B.4 I can find the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
- ☐ 8.F.B.5 I can match the graph of a function to a given situation.
- ☐ 8.F.B.5 I can sketch a graph that exhibits the qualitative features of a function that has been described verbally.

"I Can" Do Math

(Geometry)

I can show I understand congruence and similarity using physical models, transparencies or geometry software.

- ☐ 8.G.A.1 I can verify by measuring and comparing the properties of rotated, reflected or translated geometric figures.
- ☐ 8.G.A.1A I can verify that corresponding lines and line segments remain the same length.
- ☐ 8.G.A.1B I can verify that corresponding angles have the same measure.
- ☐ 8.G.A.1C I can verify that corresponding parallel lines remain parallel.
- ☐ 8.G.A.2 I can explain that a two-dimensional figure is congruent to another if the second figure can be made from the first by rotations, reflections and translations.
- ☐ 8.G.A.2 I can describe a sequence of transformations that shows the congruence between two figures.
- ☐ 8.G.A.3 I can describe the changes to the x- and y- coordinates of a figure after either dilation, translation, rotation or reflection.
- ☐ 8.G.A.4 I can explain how transformation can be used to prove that two figures are similar.
- ☐ 8.G.A.4 I can describe a sequence of transformations that either prove or disprove that two figures are similar.

"I Can" Do Math

(Geometry)

I can understand and use the Pythagorean Theorem.

- ☐ 8.G.A.5 I can informally prove that the sum of any triangle's interior angles will be the same measure as a straight angle (180 degrees).
- ☐ 8.G.A.5 I can informally prove that the sum of any polygon's exterior angles will be 360 degrees.
- ☐ 8.G.A.5 I can estimate the relationships and measurements of the angles created when two parallel lines are cut by a transversal.
- ☐ 8.G.B.6 I can use the Pythagorean Theorem to determine if a given triangle is a right triangle.
- ☐ 8.G.B.6 I can use algebraic reasoning to relate a visual model to the Pythagorean Theorem.
- ☐ 8.G.B.7 I can draw a diagram and use the Pythagorean Theorem to solve real-world problems involving right triangles.
- ☐ 8.G.B.7 I can draw a diagram to find right triangles in a three-dimensional figure and use the Pythagorean Theorem to calculate various dimensions.
- ☐ 8.G.B.7 I can apply the Pythagorean Theorem to find an unknown side length of a right triangle.
- ☐ 8.G.B.8 I can apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

"I Can" Do Math

(Geometry)

I can solve real-world and mathematical problems involving the volumes of cones, cylinders and spheres.

- ☐ 8.G.C.9 I can state and apply the formulas for the volumes of cones, cylinders and spheres.
- ☐ 8.G.C.9 I can solve real world problems involving the volumes of cones, cylinders and spheres.

"I Can" Do Math

(Statistics & Probability)

I can investigate patterns of association in data that has two variables (bivariate data).

- ☐ 8.SP.A.1 I can plot ordered pairs on a coordinate grid representing the relationship between two data sets.
- ☐ 8.SP.A.1 I can describe patterns such as clustering, outliers, positive or negative association, linear association and nonlinear association.
- ☐ 8.SP.A.2 I can recognize if the data plotted on a scatter plot has a linear association.
- ☐ 8.SP.A.2 I can draw a straight line to approximate the linear relationship between the plotted points of two data sets.
- ☐ 8.SP.A.3 I can determine the equation of a trend line that approximates the linear relationships between the plotted points of two data sets.
- ☐ 8.SP.A.3 I can interpret the y-intercept and slope of an equation based on collected data.
- ☐ 8.SP.A.3 I can use the equation of a trend line to summarize the given data and make predictions about additional data points.
- ☐ 8.SP.A.4 I can create and explain a two-way table to record the frequencies of bivariate categorical values.
- ☐ 8.SP.A.4 I can determine the relative frequencies for rows and/or columns of a two-way table.
- ☐ 8.SP.A.4 I can use relative frequencies and the context of a problem to describe possible associations between two sets of data.