2016-2018th Grade MCCRS Curriculum Map

First Nine Weeks

Unit 1: Geometry

- Module 1: Understand congruence and similarity using physical models, transparencies, or geometry software
  - 8.G.1
  - 8.G.1a
  - 8.G.1b
  - 8.G.1c
  - 8.G.2
  - 8.G.3
  - 8.G.4
  - 8.G.5
- Module 2: Understand and apply the Pythagorean Theorem
  - 8.G.6
  - 8.G.7
  - 8.G.8
- Module 3: Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres
  - 8.G.9

Second Nine Weeks

Unit 2: Expressions and Equations

- Module 1: Expressions and equations work with radical and integers exponents
  - 8.EE.1
  - 8.EE.2

Unit 3: The Number System

- Module 1 – Know that there are numbers that are not rational, and approximate them by rational numbers
  - 8.NS.1
  - 8.NS.2

Unit 2: Expressions and Equations (revisited)

- Module 1: Expressions and equations work with radical and integers exponents

- 8.EE.3
- 8.EE.4

Unit 4: Functions

- Module 1 – Define, evaluate and compare functions
  - 8.F.1
  - 8.F.2
  - 8.F.3
- Module 2 – Use functions to model relationships between quantities
  - 8.F.4
  - 8.F.5

Third Nine Weeks

Unit 2: Expressions and Equations (revisited)

- Module 2: Understand the connections between proportional relationships, lines, and linear equations
  - 8.EE.5
  - 8.EE.6
- Module 3: Analyze and solve linear equations and pairs of simultaneous linear equations
  - 8.EE.7
    - 8.EE.7a
    - 8.EE.7b
  - 8.EE.8
    - 8.EE.8a
    - 8.EE.8b
    - 8.EE.8c

Unit 5: Statistics and Probability

- Module 1 – Investigate patterns of association in bivariate data
  - 8.SP.1
  - 8.SP.2
  - 8.SP.3
  - 8.SP.4

2016-2018th Grade MCCRS Curriculum Map

First Nine Weeks

Unit 1: Geometry

Module 1: Understand congruence and similarity using physical models, transparencies, or geometry software.	
Standards	**Mathematical Practices**
8.G.1 ● Verify experimentally the properties of rotations, reflections, and translations. a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.	8.MP.1. Make sense of problems and persevere in solving them. 8.MP.2. Reason abstractly and quantitatively. 8.MP.3. Construct viable arguments and critique the reasoning of others. **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
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; given two congruent figures, describe a sequence that exhibits the congruence between them.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
8.G.3 ● Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
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;	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.**

given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	**8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
8.G.5 ● Use informal arguments to establish facts about the angle sum and the exterior angle of triangles, about the angles created when parallel lines are cut by a traversal, 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.*	**8.MP.1. Make sense of problems and persevere in solving them.** **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
Student Learning Target(s)	Essential Vocabulary
● Identify congruency. ● Reason that a 2-D figure is congruent to another if the second can be obtained by a sequence of rotations, reflections, translation. ● Describe the sequence of rotations, reflections, translations that exhibits the congruence between 2-D figures using words. ● Apply the concept of congruency to write congruent statements ● Define similar figures, as corresponding angles are congruent ● Apply the concept of similarity to write similarity statements. ● Use physical models, transparencies, or geometry software to verify the properties of rotations, reflections, and translations ● Identify corresponding sides and corresponding angles. ● Identify center of rotation. ● Identify direction and degree of rotation. ● Identify line of reflection. ● Describe the effects of dilations, translations, rotations, & reflections on 2-D figures using coordinates. ● Define dilations as a reduction or enlargement of a figure. ● Identify scale factor of the dilation.	● Transformation ● Translation ● Reflection ● Line of reflection ● Rotation ● Center of rotation ● Congruent ● Dilation ● Scale factor ● Center ● Traversal ● Corresponding angles ● Alternate interior angles ● Linear pair ● Same-side interior angles ● Exterior angle
Supplement Resources Correlation	

2016-2018th Grade MCCRS Curriculum Map

MCCRS	Ready Mathematics Instruction	Ready Practice and Problem Solving
8.G.1 8.G.1a 8.G.1b 8.G.1c 8.G.2 8.G.3 8.G.4 8.G.5	Lessons 18, 19, 20, 21, 22	Lessons 18, 19, 20, 21, 22

Module 2: Understand and apply the Pythagorean Theorem	
Standards	**Mathematical Practices**
8.G.6 ● Explain a proof of the Pythagorean Theorem and its converse.	**8.MP.1. Make sense of problems and persevere in solving them.** 8.MP.2. Reason abstractly and quantitatively. **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** 8.MP.5. Use appropriate tools strategically. **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
8.G.7 ● Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	**8.MP.1. Make sense of problems and persevere in solving them.** **8.MP.2. Reason abstractly and quantitatively.** 8.MP.3. Construct viable arguments and critique the reasoning of others. **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
8.G.8 ● Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	**8.MP.1. Make sense of problems and persevere in solving them.** 8.MP.2. Reason abstractly and quantitatively. **8.MP.3. Construct viable arguments and critique the reasoning of others.**

	8.MP.4. Model with mathematics. 8.MP.5. Use appropriate tools strategically. 8.MP.6. Attend to precision. **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
Student Learning Target(s)	Essential Vocabulary
● Explain a proof of the Pythagorean Theorem ● Understand the relationship between Pythagorean Theorem and its converse ● Define key vocabulary: square root, Pythagorean Theorem, right triangle, legs a & b, hypotenuse, sides, right angle, converse, base, height, proof. ● Identify the legs and hypotenuse of a right triangle. ● Solve basic mathematical Pythagorean theorem problems and its converse to find missing lengths of sides of triangles in two and three-dimensions. ● Apply Pythagorean theorem in solving real-world problems dealing with two and three-dimensional shapes ● Understand how to apply Pythagorean theorem in a simple planar case. ● Apply the Pythagorean theorem in a planar case and to find the distance between two points in a coordinate system and in a three-dimensional case in both mathematical and real world multi-step problems. ● Recognizes situations to apply the Pythagorean theorem in multi-step problems. ● Determine how to create a right triangle from two points on a coordinate graph	● Theorem ● Pythagorean Theorem ● Leg ● Hypotenuse ● Ordered pair ● Right triangle ● Square (noun)

Supplement Resources Correlation

MCCRS	Ready Mathematics Instruction	Ready Practice and Problem Solving
8.G.6 8.G.7 8.G.8	Lessons 23, 24, 25	Lessons 23, 24, 25

Module 3: Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres	
Standards	**Mathematical Practices**
8.G.9 ● Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.	**8.MP.1. Make sense of problems and persevere in solving them.** **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
Student Learning Target(s)	Essential Vocabulary
● Identify and define vocabulary: cone, cylinder, sphere, radius, diameter, circumference, area, volume, pi, base, and height. ● Know formulas for volume of cones, cylinders, and spheres. ● Compare the volume of cones, cylinders, and spheres. ● Determine and apply appropriate volume formulas in order to solve mathematical and real-world problems for the given shape. ● Understand how to apply formulas to multiple composite mathematical solids.	● Cone ● Cylinder ● Sphere

Supplement Resources Correlation		
MCCRS	**Ready Mathematics Instruction**	**Ready Practice and Problem Solving**
8 G.9	Lessons 26, 27	Lessons 26, 27

Second Nine Weeks

Unit 2: Expressions and Equations

Module 1: Expressions and equations work with radical and integers exponents

2016-2018th Grade MCCRS Curriculum Map

Standards	Mathematical Practices
8.EE.1 ● Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.	**8.MP.1. Make sense of problems and persevere in solving them.** **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** 8.MP.4. Model with mathematics. 8.MP.5. Use appropriate tools strategically. **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
8.EE.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 and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** 8.MP.3. Construct viable arguments and critique the reasoning of others. 8.MP.4. Model with mathematics. **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
Student Learning Target(s)	Essential Vocabulary

● Determine if two or more expressions are equivalent.
● Identify the properties of exponents.
● Apply the properties of exponents.
● Simplify expressions using the properties of exponents.
  ● One rule of exponents ($a^1 = a$)
  ● Zero rule of exponents ($a^0 = 1$)
  ● Product rule of exponents ($a^x \cdot a^y = a^{x+y}$ $a^x \cdot a^y = a^{x+y}$)
  ● Quotient rule of exponents ($\frac{a^x}{a^y} = a^{x-y}$) $\frac{a^x}{a^y} = a^{x-y}$)
  ● Negative rule of exponents ($a^{-x} = \frac{1}{a^x}$) $a^{-x} = \frac{1}{a^x}$)
  ● Power rule of exponents ($(a^x)^y = a^{x \cdot y}$ $(a^x)^y = a^{x \cdot y}$)
  ● Recognize and evaluate perfect squares.
	● Perfect square
	● Square root
	● Cube root
	● Perfect cube
	● Scientific notation

- Recognize and evaluate perfect cubes.
- Recognize that non-perfect squares are irrational numbers.
- Recognize that non-perfect cubes are irrational numbers.
- Recognize the inverse operation of squares is square rooting and use the process to solve equations.
- Recognize the inverse operation of cubes is taking the cube root and use the process to solve equations.
- Solve word problems and geometric problems such as finding the edge length of a cubical object, given the volume.

Note to teacher: Students are not asked to simplify radical expression in the 8th grade ($\sqrt{8}\,\sqrt{8} = 2\sqrt{2}\,\sqrt{2}$).

- Perform operations with numbers expressed in scientific notation, with and without technology.
- Interpret scientific notation that has been generated by technology.

Supplement Resources Correlation

MCCRS	Ready Mathematics Instruction	Ready Practice and Problem Solving
8.EE.1 8.EE.2	Lessons 1, 2	Lessons 1, 2

Unit 3: The Number System

Module 1: Know that there are numbers that are not rational, and approximate them by rational numbers	
Standards	**Mathematical Practices**
8.NS.1	8.MP.1. Make sense of problems and persevere in solving them.

● Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.	**8.MP.2. Reason abstractly and quantitatively.** 8.MP.3. Construct viable arguments and critique the reasoning of others. **8.MP.4. Model with mathematics.** 8.MP.5. Use appropriate tools strategically. **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
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., π^2). *For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations*.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** 8.MP.3. Construct viable arguments and critique the reasoning of others. **8.MP.4. Model with mathematics.** 8.MP.5. Use appropriate tools strategically. **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
Student Learning Target(s)	Essential Vocabulary
● Distinguish between rational and irrational numbers. ● Recognize that a repeating/terminating decimal is a rational number. ● Convert between terminating decimals or repeating decimals and fractional representations of rational numbers. ● Analyze and generalize patterns and structures of repeating decimals.	● Irrational number ● Real numbers

Supplement Resources Correlation

MCCRS	Ready Mathematics Instruction	Ready Practice and Problem Solving
8.NS.1 8.NS.2	Lesson 3	Lesson 3

Unit 2: Expressions and Equations (revisited)

2016-2018th Grade MCCRS Curriculum Map

Module 1: Expressions and equations work with radical and integers exponents	
Standards	**Mathematical Practices**
8.EE.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*.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** 8.MP.3. Construct viable arguments and critique the reasoning of others. 8.MP.4. Model with mathematics. **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** 8.MP.7. Look for and make use of structure. 8.MP.8. Look for and express regularity in repeated reasoning.
8.EE.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.	**8.MP.1. Make sense of problems and persevere in solving them.** 8.MP.2. Reason abstractly and quantitatively. 8.MP.3. Construct viable arguments and critique the reasoning of others. 8.MP.4. Model with mathematics. 8.MP.5. Use appropriate tools strategically. **8.MP.6. Attend to precision.** 8.MP.7. Look for and make use of structure. **8.MP.8. Look for and express regularity in repeated reasoning.**
Student Learning Target(s)	Essential Vocabulary

● Determine if two or more expressions are equivalent.
● Identify the properties of exponents.
● Apply the properties of exponents.
● Simplify expressions using the properties of exponents.
  ● One rule of exponents ($a^1 = a$)
  ● Zero rule of exponents ($a^0 = 1$)
  ● Product rule of exponents ($a^x \cdot a^y = a^{x+y}$ $a^x \cdot a^y = a^{x+y}$)
  ● Quotient rule of exponents ($\frac{a^x}{a^y} = a^{x-y}$) $\frac{a^x}{a^y} = a^{x-y}$)
  ● Negative rule of exponents ($a^{-x} = \frac{1}{a^x}$) $a^{-x} = \frac{1}{a^x}$)
  ● Power rule of exponents ($(a^x)^y = a^{x \cdot y}$ $(a^x)^y = a^{x \cdot y}$)
	● Perfect square
	● Square root
	● Cube root
	● Perfect cube
	● Scientific notation

● Recognize and evaluate perfect squares. ● Recognize and evaluate perfect cubes. ● Recognize that non-perfect squares are irrational numbers. ● Recognize that non-perfect cubes are irrational numbers. ● Recognize the inverse operation of squares is square rooting and use the process to solve equations. ● Recognize the inverse operation of cubes is taking the cube root and use the process to solve equations. ● Solve word problems and geometric problems such as finding the edge length of a cubical object, given the volume. Note to teacher: Students are not asked to simplify radical expression in the 8th grade ($\sqrt{8}\ \sqrt{8} = 2\sqrt{2}\ \sqrt{2}$). ● Perform operations with numbers expressed in scientific notation, with and without technology. ● Interpret scientific notation that has been generated by technology.	

Supplement Resources Correlation		
MCCRS	**Ready Mathematics Instruction**	**Ready Practice and Problem Solving**
8.EE.3 8.EE.4	Lessons 4, 5	Lessons 4, 5

Unit 4: Functions

Module 1: Define, evaluate, and compare functions	
Standards	**Mathematical Practices**
8.F.1	8.MP.1. Make sense of problems and persevere in solving them.

● Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.	**8.MP.2. Reason abstractly and quantitatively.** 8.MP.3. Construct viable arguments and critique the reasoning of others. 8.MP.4. Model with mathematics**.** 8.MP.5. Use appropriate tools strategically. **8.MP.6. Attend to precision.** 8.MP.7. Look for and make use of structure. 8.MP.8. Look for and express regularity in repeated reasoning.
8.F.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*.	**8.MP.1. Make sense of problems and persevere in solving them.** **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
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. *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.*	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
Student Learning Target(s)	Essential Vocabulary
● Identify the input and output of a relation. ● Determine if a relation is a function. ● Determine if a graph represents a function. ● Determine if a set of points represents a function. ● Calculate the output when given the input. ● Graph functions using a table of value. ● Identify the inputs and outputs from a graph. ● Graph functions on a coordinate plane.	● Function ● Rate of change ● Initial value ● Linear function

Supplement Resources Correlation

MCCRS	Ready Mathematics Instruction	Ready Practice and Problem Solving

8.F.1 8.F.2 8.F.3	Lessons 6, 7, 8	Lessons 6, 7, 8

Module 2: Use functions to model relationships between quantities	
Standards	**Mathematical Practices**
8.F.4 ● Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (*x, y*) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	**8.MP.1. Make sense of problems and persevere in solving them.** **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
8.F.5 ● Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
Student Learning Target(s)	Essential Vocabulary
● Construct a linear function. o To determine the rate of change (slope) and initial value (y-intercept) from a graph. o To determine the rate of change (slope) and initial value (y-intercept) from a table of values. o Given the rate of change (slope) and initial value (y-intercept). o Given the rate of change (slope) and a point. o Given two points. ● Determine the rate of change (slope) and initial value (y –intercept).	● Slope ● Y-intercept ● Qualitative graph

● Interpret the rate of change (slope) and initial value (y-intercept
● Analyze and describe the graph for a functional relationship.
  o Determine if a function increase or decrease over an interval.
  o Determine if a function is linear or nonlinear.
  o Determine the intercepts of a function.
● Sketch the graph of a function when given a written description.	

Supplement Resources Correlation		
MCCRS	**Ready Mathematics Instruction**	**Ready Practice and Problem Solving**
8.F.4 8.F.5	Lessons 9, 10	Lessons 9, 10

Third Nine Weeks

Module 2: Understand the connections between proportional relationships, lines, and linear equations	
Standards	**Mathematical Practices**
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. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** 8.MP.3. Construct viable arguments and critique the reasoning of others. **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** 8.MP.7. Look for and make use of structure. 8.MP.8. Look for and express regularity in repeated reasoning.

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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*	8.MP.1. Make sense of problems and persevere in solving them. 8.MP.2. Reason abstractly and quantitatively. 8.MP.3. Construct viable arguments and critique the reasoning of others. **8.MP.4. Model with mathematics.** 8.MP.5. Use appropriate tools strategically. 8.MP.6. Attend to precision. 8.MP.7. Look for and make use of structure. 8.MP.8. Look for and express regularity in repeated reasoning.

Student Learning Target(s)	Essential Vocabulary
● Graph linear relationships in slope intercept form (y =mx + b). ● Graph proportional relationships in the form of y = mx + b. ● Interpret unit rate as slope of the graph of a proportional relationship. ● Compare two different proportional relationships (slope and y-intercepts) in different ways (i.e. graphically, algebraically, graphically, numerically in tables, or by verbal description). ● Interpret y = mx + b as defining a linear function. ● Recognize that equations can be written in other form instead of y = mx + b. ● Compute the outputs from given inputs or compute inputs from given outputs. ● Determine the y-intercept of a function. ● Identify equations that do or do not define one variable as a linear function of the other ● Identify characteristics of similar triangles. ● Analyze patterns for points on a line through the origin. ● Analyze patterns for points on a line that do not pass through or include the origin. ● Derive an equation of the form y = mx for a line through the origin. ● Derive an equation of the form y= mx + b for a line intercepting the vertical axis at b (the y-intercept). ● Determine the y-intercept of a line. ● Find the slope of a line.	● Similar triangle ● Slope ● Y-intercept ● Proportional relationship ● Unit rate ● Constant of proportionality

● Use similar triangles to explain why the slope m is the same between any two	

Supplement Resources Correlation		
MCCRS	**Ready Mathematics Instruction**	**Ready Practice and Problem Solving**
8.EE.5 8.EE.6	Lessons 11, 12	Lessons 11, 12

Module 3a –Analyze and solve linear equations and pairs of simultaneous linear equations	
Standards	**Mathematical Practices**
8.EE.7 ● Solve linear equations in one variable.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** 8.MP.5. Use appropriate tools strategically. **8.MP.6. Attend to precision.** 8.MP.7. Look for and make use of structure. 8.MP.8. Look for and express regularity in repeated reasoning.
8.EE.7a ● 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).	8.MP.1. Make sense of problems and persevere in solving them. 8.MP.2. Reason abstractly and quantitatively. 8.MP.3. Construct viable arguments and critique the reasoning of others. **8.MP.4. Model with mathematics.** 8.MP.5. Use appropriate tools strategically. **8.MP.6. Attend to precision.** 8.MP.7. Look for and make use of structure. 8.MP.8. Look for and express regularity in repeated reasoning.
8.EE.7b ● Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** 8.MP.4. Model with mathematics. 8.MP.5. Use appropriate tools strategically.

	8.MP.6. Attend to precision. 8.MP.7. Look for and make use of structure. 8.MP.8. Look for and express regularity in repeated reasoning.
Student Learning Target(s)	Essential Vocabulary
● Recognize and give examples of one-variable linear equations with one solution (x = a). ● Recognize and give examples of one-variable linear equations with no solutions (a = b, where a and b are different numbers). ● Recognize and give examples of one-variable linear equations with infinitely many solutions (a = a). ● Solve multi-step linear equations in one variable by combining like terms (w/ rational number coefficients). ● Solve one-step and two-step linear equations in one variable (w/rational number coefficients). ● Solve multi-step linear equations in one variable with variables on opposite sides of the equal sign (w/rational number coefficients). ● Solve multi-step linear equations in one variable by applying the distributive property (w/rational number coefficients). ● Solve multi-step linear equations in one variable by applying the distributive property and combining like terms (w/rational number coefficients). ● Solve mathematical and real-world linear equations in one variable using the distributive property and/or combining like terms (w/rational coefficients). Note to the teacher: Rational coefficients are important. Ensure that students work with integers in decimal and fraction form.	● Similar triangle ● Slope ● Y-intercept ● Proportional relationship ● Unit rate ● Constant of proportionality

Supplement Resources Correlation

MCCRS	Ready Mathematics Instruction	Ready Practice and Problem Solving
8.EE.7 8.EE.7a 8.EE.7b	Lessons 13, 14	Lessons 13, 14

Module 3b –Analyze and solve linear equations and pairs of simultaneous linear equations

2016-2018th Grade MCCRS Curriculum Map

Standards	Mathematical Practices
8.EE.8 ● Analyze and solve pairs of simultaneous linear equations	**8.MP.1. Make sense of problems and persevere in solving them.** **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
8. EE.8a ● Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** 8.MP.5. Use appropriate tools strategically. 8.MP.6. Attend to precision. **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
8.EE.8b ● 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.*	**8.MP.1. Make sense of problems and persevere in solving them.** 8.MP.2. Reason abstractly and quantitatively. 8.MP.3. Construct viable arguments and critique the reasoning of others. **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** 8.MP.6. Attend to precision. **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
8.EE.8c ● Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*	**8.MP.1. Make sense of problems and persevere in solving them.** **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** **8.MP.8. Look for and express regularity in repeated reasoning.**
Student Learning Target(s)	Essential Vocabulary

• Identify the solution(s) to a system of two linear equations in two variables as the point(s) of intersection of their graphs. • Identify cases in which a system of two equations in two unknowns has no solution or infinitely many solutions. • Understand the relationship between the graphic representation and the algebraic solution of the system. • Solve a system of two linear equations in two unknowns algebraically. • Solve simple cases of systems of two linear equations in two variables by inspection. • Solve real world problems leading to two linear equations in two variables. • Solve mathematical problems leading to two linear equations in two variables.	• Systems of linear equations • Slope intercept form

Supplement Resources Correlation

MCCRS	Ready Mathematics Instruction	Ready Practice and Problem Solving
8.EE.8 8.EE.8a 8.EE.8b 8.EE.8c	Lessons 15, 16, 17	Lessons 15, 16, 17

Unit 5: Statistics and Probability

Module 1: Investigate patterns of association in bivariate data

Standards	Mathematical Practices
8.SP.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	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.**

association, linear association, and non-linear association.	8.MP.8. Look for and express regularity in repeated reasoning.
8.SP.2 ● Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
8.SP.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.*	8.MP.1. Make sense of problems and persevere in solving them. **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.
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. Construct and interpret a two-way 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*	**8.MP.1. Make sense of problems and persevere in solving them.** **8.MP.2. Reason abstractly and quantitatively.** **8.MP.3. Construct viable arguments and critique the reasoning of others.** **8.MP.4. Model with mathematics.** **8.MP.5. Use appropriate tools strategically.** **8.MP.6. Attend to precision.** **8.MP.7. Look for and make use of structure.** 8.MP.8. Look for and express regularity in repeated reasoning.

evidence that those who have a curfew also tend to have chores?	

Student Learning Target(s)	Essential Vocabulary
● Interpret scatter plots for bivariate (two different variables such as distance and time) 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 ● Justifies the patterns of association that can be seen in bivariate data by constructing, displaying and interpreting scatter plots. ● Formulate a straight line within the plotted data. ● Informally assess the model fit by judging the closeness of the data points to the line. ● Understand that straight lines are used to model the relationship between two quantitative variables ● Solve problems using the equation of a linear model. ● Find the slope and intercept of a linear equation. ● Recognize patterns shown in comparison of two sets of data. ● Construct a two-way table ● Interpret the data in the two-way table to recognize patterns	● Scatter plot ● Bivariate ● Outlier ● Association ● Positive association ● Negative association ● Linear ● Non linear ● Residual ● Best-fit line

● Use relative frequencies of the data to describe relationships (positive, negative, or no correlation).	

Supplement Resources Correlation

MCCRS	Ready Mathematics Instruction	Ready Practice and Problem Solving
8.SP.1 8.SP.2 8.SP.3 8.SP.4	Lessons 28, 29, 30, 31	Lessons 28, 29, 30 31