

# 8<sup>th</sup> Grade Common Core Math Curriculum Unit 1

Time	Standard	The Student Will Be Able To:	Resources
	8NS 1	Categorize real numbers as rational, irrational, integer, whole, and natural.	<b>FAL:</b> Repeating Decimals <b>MARS Assessment:</b> 25% Sale <b>Mars Activity:</b> The Puzzle Odd Numbers Picking Apples Number Calculations Multiples of 10 Square Patterns Multiples of Fives
		Understand that every number can be written as a decimal.	
	8NS2	Compare irrational numbers and approximate them on a number line.	
	8EE1	Apply properties of exponents. Product/Quotient of powers.	
	8EE2	Understand what square and cube roots are.	
		Evaluate perfect squares and cubes.	
		Use proper root symbols to represent solutions.	
	8EE3	Express numbers in standard form using scientific notation and vice versa.	<b>FAL:</b> Estimating Length Using Scientific Notation
		Estimate very small and large numbers.	

		Express how many times larger or smaller one number is compared to another number.	
	8EE4	Perform operations with scientific notations and choose appropriate units.	

# 8<sup>th</sup> Grade Common Core Math Curriculum Unit 2

Time	Standard	The Student Will Be Able To:	Resources
	7RP2	Recognize and represent proportional relationships.	<b>Mars Activity:</b> Bell Peppers
		Use tables, graphs, and equivalency to represent proportional relationships.	
		Identify unit rates in tables, graphs, diagrams, and descriptions.	
	8EE5	Graph proportional relationships on a coordinate plane.	<b>Mars Activity:</b> Journey The Cog Railway A Cross-Country Run
		Interpret unit rate as slope.	
		Compare graphs to equations.	
	8EE6	Find slope in various ways. I.e. similar triangles on a graph, rise over run, change in y over change in x from a table, and slope formula from ordered pairs.	
		Interpret the meaning of slope.	
		Understand and interpret the meaning of the y-intercept.	

# 8<sup>th</sup> Grade Common Core Math Curriculum Unit 3

Time	Standard	The Student Will Be Able To:	Resources
	8EE7	Solve linear equations for x or for y.	<b>FAL:</b> Solving Linear Equations in One Variable <b>MARS Assessment:</b> Party <b>Mars Activity:</b> Differences Pete's Numbers Pen Pal
	8EE7a	Determine solution sets for linear equations. I.e. All real numbers, null (empty set), exactly one solution.	
	8EE7b	Solve linear equations using distributive property and combining like terms.	
	8EE8	Solve systems of equations by graphing, substitution, and cancelling.	<b>FAL:</b> Solving Real Life Problems: Baseball Jerseys  Classifying Solutions to Systems of Equations  <b>Mars Activity:</b> Nickels and Dimes
	8EE8a	Understand that solutions are the point of intersection on a graph. If no	

		intersection no solution, if same line infinite solutions.	
	8EE8b	Solve systems algebraically and by inspection.	
		Example: $3x + 2y = 6$ and $3x + 2y = 5$ , is no solution because $3x + 2y$ cannot be both 6 and 5.	
	8EE8c	Use systems of equations to solve real world and mathematical problems.	

# 8<sup>th</sup> Grade Common Core Math Curriculum Unit 4

Time	Standard	The Student Will Be Able To:	Resources
	8G1	Perform rotations, reflections, and translations.	
	8G1 a, b, c	Properties are lines to lines and angles to angles.	
	8G2	Use rotations, reflections, and translations to show two figures are congruent.	<b>Mars Activity:</b> Triangles
		Be able to describe the sequence of events used to go from one figure to the other.	
	8G3	Perform dilations, rotations, translations, and reflections then identify the original and prime coordinates.	<b>Mars Activity:</b> Aaron's Designs
	8G4	Understand that figures are similar if the second is a dilation of the first.	<b>Mars Activity:</b> The Poster Photographs Photos
	7G1	Use scale drawings to compute actual lengths and areas of figures.	
		Reproduce a new drawing with a new scale.	

# 8<sup>th</sup> Grade Common Core Math Curriculum Unit 5

Time	Standard	The Student Will Be Able To:	Resources
	8F1	Understand that functions have exactly one output for each input.	<b>Mars Activity:</b> Squares and Circles
		Understand that ordered pairs on a graph are the input/output values.	
	8F2	Compare properties of functions represented different ways. (Graphs, tables, algebraically, verbally, and maps)	
	8F3	Interpret the equation $y = mx + b$ as a linear function, $f(x) = mx + b$ .	<b>Mars Activity:</b> Shelves
		Understand what makes a function linear.	
		Identify linear and nonlinear functions.	
	8F4	Write linear equations stating slope and y-intercept from tables and graphs.	<b>FAL:</b> Modeling Situations with Linear Equations  Lines and Linear Equations  Interpreting Distance/Time Graphs <b>MARS Assessment:</b> Dots and Squares <b>Mars Activity:</b> Apartment Numbers

			Boxes of Chocolate Tiling Squares
		Interpret the meaning of slope for a given line.	
	8F5	Analyze a graph and describe it qualitatively. (Come up with a story to represent the graph.)	<b>Mars Activity:</b> Going to Town Vincent's Graphs
		Sketch a graph with specific qualitative features from verbal and written descriptions.	



# 8<sup>th</sup> Grade Common Core Math Curriculum Unit 6

Time	Standard	The Student Will Be Able To:	Resources
	8G5	Understand angle properties of parallel lines cut by a transversal. (Interior, exterior, corresponding, adjacent, and vertical.)	<b>Mars Activity:</b> Hexagons Octagon Tile
	8G6	Understand the Pythagorean Theorem.	<b>FAL:</b> The Pythagorean Theorem: Square Areas
		Be able to determine if given side lengths form a right triangle.	
	8G7	Use the Pythagorean Theorem to solve real world and mathematical problems in 2D and 3D figures.	<b>MARS Assessment:</b> Rugs <b>Mars Activity:</b> Right Triangles Fractions of a Square Patterns in Prague Jane's T.V.
	8G8	Use Pythagorean Theorem to find the distance between two points on a coordinate plane.	
	8G9	Know the formulas for the volume of cones, cylinders, and spheres.	<b>FAL:</b> Modeling: Making Matchsticks <b>Mars Activity:</b> Sequoia
		Apply the formulas to solve real world math problems.	

# 8<sup>th</sup> Grade Common Core Math Curriculum Unit 7

Time	Standard	The Student Will Be Able To:	Resources
	8SP1	Construct scatter plots from given data.	<b>MARS Assessment:</b> Snakes <b>Mars Activity:</b> Number Pairs
		Interpret scatter plots of data as positive, negative, or no relationships and determine if any outliers exist.	
	8SP2	Use best fit lines to model scatter plots and make predictions.	<b>Mars Activity:</b> Machines
	8SP3	Use linear equations to interpret data in context. (Independent and dependent variables)	
	8SP4	Use two way tables to organize and evaluate bivariate data.	