

CRAWFORDSVILLE COMMUNITY SCHOOL CORPORATION

GRADE LEVEL: EIGHTH

SUBJECT: MATH

DATE: 2018-2019

GRADING PERIOD: QUARTER 1

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
NUMBER SENSE					
<ul style="list-style-type: none"> Rational Numbers Irrational Numbers Decimal Expansion 	<p>8.NS.1: Give examples of rational and irrational numbers and explain the difference between them. Understand that every number has a decimal expansion; for rational numbers, show that the decimal expansion terminates or repeats, and convert a decimal expansion that repeats into a rational number.</p>	<ul style="list-style-type: none"> Give examples and explain the difference between rational and irrational numbers. Show that the decimal expansion for a number either terminates or repeats. Classify the real number system. 	<p>a) Give two examples of rational numbers and two examples of irrational numbers. Describe how to determine whether a number is rational or irrational.</p> <p>CFA.Q1.A – wk 3 CFA.Q1.C – wk5 CSA.Q1.A – wk 6</p>	<ul style="list-style-type: none"> Rational Number Irrational Number Decimal Expansion 	Important
<ul style="list-style-type: none"> Approximations Rational Numbers Irrational Numbers Number Line 	<p>8.NS.2: Use rational approximations of irrational numbers to compare the size of irrational numbers, plot them approximately on a number line, and estimate the value of expressions involving irrational numbers.</p>	<ul style="list-style-type: none"> Use rational numbers to approximate irrational numbers. Plot irrational numbers on a number line. Estimate the value of expressions that contain irrational numbers. 	<p>a) Plot $-1.4, \sqrt{2}, \sqrt{7}$ and 2.2 on a number line.</p> <p>CFA.Q1.C – wk 5 CSA.Q1.A – wk 6</p>	<ul style="list-style-type: none"> Approximation 	Critical

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
NUMBER SENSE					
<ul style="list-style-type: none"> Numeric Expression Integer Exponents Properties 	<p>8.NS.3: Given a numeric expression with common rational number bases and integer exponents, apply the properties of exponents to generate equivalent expressions.</p> <p>PS.7: Look for and make use of structure.</p>	<ul style="list-style-type: none"> Use and apply the laws and properties of exponents. Simplify negative exponents. Use properties of operation and equality. 	<p>Which expressions are equivalent to $4^{-2} \times 4^5$?</p> <p>a) 16^3 b) $1/4^3$ c) 64 d) 4^3 e) 4^{-10}</p> <p>CFA.Q1.A – wk 3 CFA.Q1.B – wk 4 CSA.Q1.A – wk 6</p>	<ul style="list-style-type: none"> Exponent of Zero Property Negative Exponent Property 	Important
<ul style="list-style-type: none"> Square Root Rational Number 	<p>8.NS.4: Use square root symbols to represent solutions to equations of the form $x^2 = p$, where p is a positive rational number.</p> <p>PS.2: Reason abstractly and quantitatively.</p>	<ul style="list-style-type: none"> Simplify expressions with square roots. Estimate values of square roots. Compare expressions with square roots. Locate square root values on a number line. Use square root symbols to represent solutions. Make sense of quantities and their relationships. 	<p>The area of a square is 90 square feet. What is the length, in feet, of the side of the square?</p> <p>a) 22.5 b) 45 c) $\sqrt{45}$ d) $\sqrt{90}$</p> <p>CFA.Q1.C – wk 5 CSA.Q1.A – wk 6</p>	<ul style="list-style-type: none"> Square Root Estimate 	Important

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
COMPUTATION					
<ul style="list-style-type: none"> Rational Numbers Real World Problems 	<p>8.C.1: Solve real-world problems with rational numbers by using multiple operations.</p>	<ul style="list-style-type: none"> Solve real world problems with rational number using multiple operations. 	<p>Veda earned \$150 last week. Jay earned \$130 last week. They combined their money and decided to donate $\frac{1}{4}$ of their total amount to a charity. Then, they spent 40% of the remaining amount at an amusement park. Jay claims that they only have 35% of their original combined total left. Is Jay's claim correct? Justify your answer.</p> <p>CFA.Q1.A – wk 3 CSA.Q1.A – wk 6</p>		Critical
<ul style="list-style-type: none"> Scientific Notation Decimals Technology 	<p>8.C.2: Solve real-world and other mathematical problems involving numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Interpret scientific notation that has been generated by technology, such as</p>	<ul style="list-style-type: none"> Solve problems that have numbers expressed in scientific notation. Convert standard notation to scientific notation. Convert scientific notation to standard notation. 	<p>Object A weighs 1.25×10^8. Object B weighs 6.55×10^{11} milligrams. How many times heavier is object B than object A?</p>	<ul style="list-style-type: none"> Scientific Notation Standard Notation 	Additional

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
COMPUTATION					
	<p>8.C.2: (cont.)</p> <p>a scientific calculator, graphing calculator, or excel spreadsheet.</p> <p>PS.5: Use appropriate tools strategically.</p>	<ul style="list-style-type: none"> Use pencil/paper, concrete models, protractor, calculator, spreadsheet, computer algebra system, graphing calculators, geometric software, and statistical package. 	How much heavier, in milligrams, is object B than object A. Write your answers in scientific notation.		
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> Linear Equations Rational Numbers Distributive Property Inequalities Real-world problems 	<p>8.AF.1: Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems.</p>	<ul style="list-style-type: none"> Add, subtract, multiply, and divide rational numbers. Write and solve one and two step rational equations. Write inequalities to represent real-world situations. Simplify algebraic expressions including those that require distribution. Solve one-variable equations including those that require distribution and that have variables on both sides. 	<p>a) Two fifths of the sum of a number and 4, plus -7 is -16. Write an equation that can be used to determine the number and then determine the number.</p> <p>b) A local gym has two pricing options. Option A: \$5.75 for each visit Option B: yearly membership for \$99, plus \$0.50 for each visit.</p>	<ul style="list-style-type: none"> Distributive Property Inequality 	Critical
CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN

ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> • Inequality • Linear Equations 	<p>8.AF.1: (cont.)</p> <p>PS.1: Make sense of problems and persevere in solving them.</p>	<ul style="list-style-type: none"> • Model a given real-world situation using a linear equation or inequality • Plan a path to a solution. • Check answers using a different method. • Ask, “Does this make sense?” “Is my answer reasonable?” 	<p>Write an inequality that can be used to determine the minimum number of times a person would need to visit the gym in a year in order for option B to be less expensive than option A. Then solve the inequality and interpret the solution.</p> <p>Two-fifths of the sum of a number and 4, plus -7 is -16. Write an equation that can be used to determine the number and then determine the number.</p> <p>CFA.Q1.D – wk 8 (CSA during Q2)</p>	<ul style="list-style-type: none"> • Term • Like terms • Equivalent expressions • Simplify • Solve 	<p>Critical</p>
CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN

ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> Linear Equations 	<p>8.AF.2: 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 transforming a 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).</p> <p>PS.2: Reason abstractly and quantitatively</p>	<ul style="list-style-type: none"> Generate equations with one solution, many solutions, and no solution. Make sense of quantities and their relationships Represent a situation symbolically Know the meaning of quantities Use different properties of operations and objects Create coherent representation of problems 	<p>Determine whether each equation has one solution, infinitely many solutions, or no solutions.</p> <p>a) $5x-5 = 5x-10$ b) $b) \frac{1}{2} (10x-20) = 5x-10$ c) $c) 10x - 23 = 29 - 3x$ d) $1.45x = 0$</p> <p>Give other examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. In words, describe how you know whether a linear equation in one variable has one solution, infinitely many solutions, or no solutions.</p> <p>CFA.Q1.D – wk 8 (CSA during Q2)</p>		Critical

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GRADING PERIOD: QUARTER 2

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> • Linear Equations • Rational Numbers • Distributive Property • Inequalities • Real-world problems 	<p>8.AF.1: Solve linear equations with rational number coefficients fluently, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. Represent real-world problems using linear equations and inequalities in one variable and solve such problems.</p>	<ul style="list-style-type: none"> • Add, subtract, multiply, and divide rational numbers. • Write and solve one and two step rational equations. • Write inequalities to represent real-world situations. • Simplify algebraic expressions including those that require distribution. • Solve one-variable equations including those that require distribution and that have variables on both sides. • Model a given real-world situation using a linear equation or inequality. 	<p>a) Two fifths of the sum of a number and 4, plus -7 is -16. Write an equation that can be used to determine the number and then determine the number. b) A local gym has two pricing options. Option A: \$5.75 for each visit Option B: yearly membership for \$99, plus \$0.50 for each visit.</p>	<ul style="list-style-type: none"> • Distributive Property • Inequality 	<p>Critical</p>

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> • Inequality • Linear Equations 	<p>8.AF.1: (cont.)</p> <p>PS.1: Make sense of problems and persevere in solving them.</p>	<ul style="list-style-type: none"> • Plan a path to a solution. • Check answers using a different method. • Ask, “Does this make sense?” “Is my answer reasonable?” 	<p>Write an inequality that can be used to determine the minimum number of times a person would need to visit the gym in a year in order for option B to be less expensive than option A. Then solve the inequality and interpret the solution.</p> <p>Two-fifths of the sum of a number and 4, plus -7 is -16. Write an equation that can be used to determine the number and then determine the number.</p> <p>CFA.Q2.A – wk 10 CSA.Q2. A – wk 11 CSA.Q2.C – wk 19</p>	<ul style="list-style-type: none"> • Term • Like terms • Equivalent expressions • Simplify • Solve 	Critical

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> Linear Equations 	<p>8.AF.2: 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 transforming a 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).</p> <p>PS.2: Reason abstractly and quantitatively</p>	<ul style="list-style-type: none"> Generate equations with one solution, many solutions, and no solution. Make sense of quantities and their relationships Represent a situation symbolically Know the meaning of quantities Use different properties of operations and objects Create coherent representation of problems 	<p>Determine whether each equation has one solution, infinitely many solutions, or no solutions.</p> <p>a) $5x-5 = 5x-10$ b) $\frac{1}{2} (10x-20) = 5x-10$ c) $10x - 23 = 29 - 3x$ d) $1.45x = 0$</p> <p>Give other examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. In words, describe how you know whether a linear equation in one variable has one solution, infinitely many solutions, or no solutions.</p> <p>CFA.Q2.A – wk 10 CSA.Q2.A – wk 11</p>		Critical

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> Graphs of functions 	<p>8.AF.5: 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. Describe similarities and differences between linear and nonlinear functions from tables, graphs, verbal descriptions, and equations.</p> <p>PS.3: Construct viable arguments and critique the reasoning of others.</p>	<ul style="list-style-type: none"> Graph linear equations using T-charts. Graph linear equations using intercepts. Graph linear equations using slope-intercept form. Graph linear equations using point-slope form. Calculate slope given two points or given a graph. Describe and compare given functions that are presented in different forms including tables, graphs and equations. Use stated assumptions, definitions, and previously established results. Make conjectures and justify. Compare two arguments and distinguish correct logic or reasoning which is flawed. 	<p>Create a table of values for each equation. Then graph each equation on the same coordinate plane. Describe similarities and differences among the graphs of the equations.</p> <p>$y = 2x$ $y = x^2$ $y = 2^x$</p> <p>CFA.Q2.B – wk 13 CSA.Q2.B – wk 17</p>	<ul style="list-style-type: none"> Linear/nonlinear Slope-intercept form 	Critical

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> Linear Equations 	<p>8.AF.8: Understand that solutions to a system of two linear equations correspond to points of intersection of their graphs because points of intersection satisfy both equations simultaneously. Approximate the solution of a system of equations by graphing and interpreting the reasonableness of the approximation.</p> <p>PS.8: Look for and express regularity in repeated reasoning.</p>	<ul style="list-style-type: none"> Solve systems of two linear equations using substitution, and elimination methods. Look for general methods and short cuts. Evaluate reasonableness of their results. 	<p>Graph the system of equations below. How can you approximate the solution of the system by looking at the graph? How can you justify the solution to the system of equations.</p> <p>$y = -2x - 1$ $y = \frac{1}{2}x - 6$</p> <p>CFA.Q2.D – wk 16 CSA.Q2 .B – wk 17</p>	<ul style="list-style-type: none"> System of equations 	<p>Important</p>

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GRADING PERIOD: QUARTER 3

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> • Functions • Independent Variable • Dependent Variable • Ordered Pairs 	<p>8.AF.3: Understand that a function assigns to each x-value (independent variable) exactly one y-value (dependent variable), and that the graph of a function is the set of ordered pairs (x,y).</p>	<ul style="list-style-type: none"> • Define ordered pairs, independent and dependent variables. • Graph ordered pairs • Determine if a graph is a function from an equation, table, or graph. 	<p>Determine whether each relation represents a function. Describe why or why not.</p> <p>{(-3.4, 9), (-5, -5), (9, -3.4)}</p> <p>b) Consider a relation such that the independent variable represents the people in a classroom and the dependent variable represents the month in which they were born. Does this relation represent a function?</p>	<ul style="list-style-type: none"> • Ordered Pair • Independent and Dependent Variables • Function 	<p>Import.</p>

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> • Independent Variable • Dependent Variable 	<p>8.AF.3: (cont.)</p> <p>PS.4: Model with mathematics.</p>	<ul style="list-style-type: none"> • Use diagrams, two-way tables, graphs, flowcharts, formulas to map relationships between quantities. 	<p>Vice-versa, consider a relation such that the independent variable represents the months of the year and the dependent variable represents the people associated to the month in which they were born. Does this relation represent a function?</p> <p>CFA.Q3.A – wk 21 CSA.Q3.A - wk 24</p>		

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> • Functional Relationship • Graph 	<p>8.AF.4: Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear, has a maximum or minimum value). Sketch a graph that exhibits the qualitative features of a function that has been verbally described.</p>	<ul style="list-style-type: none"> • Describe a graph in terms of where the function is decreasing or increasing. • Determine if a function is linear or non-linear. • State if the graph has a minimum or maximum value. • Sketch a graph. • Create a graph to model a situation. 	<p>Pat and Kim are both at the library. Pat walks away from the library at a constant rate. Kim leaves shortly after Pat and walks in the same direction as Pat and at the same constant rate.</p> <p>Sketch a graph to represent Pat and Kim’s distance from the library as a function of time.</p> <p>CFA.Q3.B – wk 23 CSA.Q3.A – wk 24</p>	<ul style="list-style-type: none"> • Functional Relationship 	<p>Critical</p>

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> Graphs of functions 	<p>8.AF.5: 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. Describe similarities and differences between linear and nonlinear functions from tables, graphs, verbal descriptions, and equations.</p> <p>PS.3: Construct viable arguments and critique the reasoning of others.</p>	<ul style="list-style-type: none"> Graph linear equations using T-charts. Graph linear equations using intercepts. Graph linear equations using slope-intercept form. Graph linear equations using point-slope form. Calculate slope given two points or given a graph. Describe and compare given functions that are presented in different forms including tables, graphs and equations. Use stated assumptions, definitions, and previously established results. <ul style="list-style-type: none"> Make conjectures and justify. Compare two arguments and distinguish correct logic or reasoning which is flawed. 	<p>Create a table of values for each equation. Then graph each equation on the same coordinate plane. Describe similarities and differences among the graphs of the equations.</p> <p>$y = 2x$ $y = x^2$ $y = 2^x$</p> <p>CFA.Q3.A – wk 21 CFA.Q3.B – wk 23 CSA.Q3.A – wk 24</p>	<ul style="list-style-type: none"> Linear/nonlinear Slope-intercept form 	Critical

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
<ul style="list-style-type: none"> Graphs of functions 	<p>8.AF.6: Construct a function to model a linear relationship between two quantities given a verbal description, table of values, or graph. Recognize in $y = mx + b$ that m is the slope (rate of change) and b is the y-intercept of the graph, and describe the meaning of each in the context of a problem.</p> <p>PS.4: Model with mathematics.</p>	<ul style="list-style-type: none"> Given a table of values create both the graph and equation for the function. Given a graph create a table and equation for the function. Given an equation graph the function and create a table of values. Write the slope-intercept form of a linear equation if given a verbal description, table of values, or graph. Describe how slope and y-intercept work in real world problems as rate of change and initial value. Solve problems arising in everyday life. Write equations to describe a situation. 	<p>a) Graph each equation below. $Y=3x-3$ $Y=2/3x$ $Y=-2x+1$ $Y=-4/3x+3$</p> <p>b) Rebecca wants to buy a new MP3 player. She already has \$10 and will earn the rest by selling necklaces for \$4 each. Write an equation that represents the amount of money Rebecca has saved given the number of necklaces sold. Define your variables. Explain what the y-intercept and slope represents in the context of the problem.</p>	<ul style="list-style-type: none"> Slope y- intercept 	Critical

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
	8.AF.6: (cont.)	<ul style="list-style-type: none"> Solve problems using representations mathematics. Analyze relationships and draw conclusions. 	<p>Determine the # of necklaces she must sell before she is able to purchase an MP3 player that costs \$167 after tax.</p> <p>CFA.Q3.A – wk 21 CFA.Q3.B – wk 23 CSA.Q3.A - wk 24</p>		
<ul style="list-style-type: none"> Linear Functions 	<p>8.AF.7: Compare properties of two linear functions given in different forms, such as a table of values, equation, verbal description, and graph (e.g., compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed).</p> <p>PS.3: Construct viable arguments and critique the reasoning of others.</p>	<ul style="list-style-type: none"> Compare properties of linear functions when they are given in different forms such as graphs or equations. State which function has a greater rate of change. State which function has a greater starting value. Justify conclusions 	<p>Samantha starts with \$20 on a gift card to an ice cream shop. She plans to spend \$3.50 of the gift card each week. Joe also has a gift card to an ice cream shop and plans to spend his money in a similar way as Samantha. The amount he has remaining on his gift card, y, after x weeks can</p>		Import.

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
ALGEBRA AND FUNCTIONS					
	8.AF.7: (cont.)		<p>be found using the equation below. $Y = 50 - 7x$ Assuming that Joe and Samantha spend their gift cards as described, who spends at a faster rate? Explain your answer.</p> <p>CFA.Q3.B – wk 23 CSA.Q3.A – wk 24</p>		
GEOMETRY AND MEASUREMENT					
<ul style="list-style-type: none"> • Rotations • Reflections • Translations • Line Segments • Parallel Lines 	<p>8.GM.3: Verify experimentally the properties of rotations, reflections, and translations, including: lines are mapped to lines, and line segments to line segments of the same length; angles are mapped to angles of the same measure; and parallel lines are mapped to parallel lines.</p> <p>PS.6: Attend to precision.</p>	<ul style="list-style-type: none"> • Describe the properties of: <ul style="list-style-type: none"> – Rotations – Reflections – Translations • Use clear definitions. 	<p>Provide multiple opportunities for students to explore figure transformations so they appreciate that points stay the same distance apart and lines stay at the same angle after they have been rotated, reflected, and/or translated.</p>	<ul style="list-style-type: none"> • Translation • Rotation • Reflection • Dilation 	Important

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
GEOMETRY AND MEASUREMENT					
<ul style="list-style-type: none"> • Transformations • Dilations • Translations • Reflections • Rotations 	<p>8.GM.6: Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.</p>	<ul style="list-style-type: none"> • Identify and perform dilations, translations, reflections, and rotations of 2-D figures on a coordinate plane. • Describe the effect of dilations, translations, reflections, and rotation on the location of 2-D figures in the coordinate plane. 	<p>The vertices of a figure are (-1, 1), (-1, -3), (2, 1), and (2, -3). The figure is translated two units to the right and then reflected over the x-axis. What are the vertices of the image?</p>	<ul style="list-style-type: none"> • Transformatio n 	Import.
<ul style="list-style-type: none"> • Pythagorean Theorem 	<p>8.GM.7: Use inductive reasoning to explain the Pythagorean relationship.</p> <p>PS.1: Make sense of problems and persevere in solving them.</p>	<ul style="list-style-type: none"> • Explain the Pythagorean Theorem by using a drawing and finding the areas of squares attached to the sides. • Explain to themselves the meaning of a problem – look for entry points to a solution. 	<ul style="list-style-type: none"> • Quiz • Vocabulary Test • Test 	<ul style="list-style-type: none"> • Inductive Reasoning 	Important

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
GEOMETRY AND MEASUREMENT					
<ul style="list-style-type: none"> • Pythagorean Theorem • Right Triangles 	<p>8.GM.8: Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and other mathematical problems in two dimensions.</p> <p>PS.4: Model with mathematics.</p>	<ul style="list-style-type: none"> • Use the Pythagorean Theorem to find unknown side lengths. • Use the Pythagorean Theorem to determine if a triangle is a right triangle. • Solve problems arising in everyday life. 	<p>The height of a house is 30 feet. The base of 31-foot ladder is located 15 feet away from the base of the house and is leaning up against the side of the house. How far up the side of the house does the top of the ladder reach?</p> <p>CSA.Q3.B – wk 26</p>	<ul style="list-style-type: none"> • Pythagorean Theorem • Right Triangle 	Critical
<ul style="list-style-type: none"> • Pythagorean Theorem • Distance • Coordinate Plane 	<p>8.GM.9: Apply the Pythagorean Theorem to find the distance between two points in a coordinate plane.</p>	<ul style="list-style-type: none"> • Use the Pythagorean Theorem to find the distance between two points on a graph. • Use the distance formula to find the distance between two points on a graph. 	<p>Tom is looking at a map of a theme park. The map is laid out in a coordinate system. Tom is located at (2, 3). The roller coaster is located at (7, 8) and the water ride is located at (9, 1).</p>	<ul style="list-style-type: none"> • Distance Formula 	Critical

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
GEOMETRY AND MEASUREMENT					
	8.GM.9 (cont)		<p>Is Tom closer to the roller coaster or the water ride? Justify your answer.</p> <p>CSA.Q3.B – wk 26</p>		

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GRADING PERIOD: QUARTER 4

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
GEOMETRY AND MEASUREMENT					
<ul style="list-style-type: none"> • Geometric Objects • Nets • Polygons 	<p>8.GM.1: Identify, define and describe attributes of three-dimensional geometric objects (right rectangular prisms, cylinders, cones, spheres, and pyramids). Explore the effects of slicing these objects using appropriate technology and describe the two-dimensional figure that results.</p> <p>PS.7: Look for and make use of structure.</p>	<ul style="list-style-type: none"> • Use nets to describe 3-D objects as 2-D objects. • Classify polygons. • Find angle measurements of polygons. • Find missing sides and angles of congruent figures. • Find area of circles. • Find circumference of circles. • Classify geometric shapes based upon their attributes. 	<p>Create a table that defines and describes attributes of right rectangular prisms, cylinders, cones, spheres, and pyramids.</p> <p>CFA.Q4.B – wk 32</p>	<ul style="list-style-type: none"> • Net • Polygon • Rectangular Prism • Cylinder • Cone • Pyramid • Quadrilateral • Triangle 	<p>Important</p>

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
GEOMETRY AND MEASUREMENT					
<ul style="list-style-type: none"> • 3-Dimensional Figures • Surface Area • Volume 	<p>8.GM.2: Solve real-world and other mathematical problems involving volume of cones, spheres, and pyramids and surface area of spheres.</p>	<ul style="list-style-type: none"> • Calculate volume of the following: <ul style="list-style-type: none"> – Rectangular prisms – Triangular prism – Rectangular pyramids – Triangular pyramids – Cylinders – Cones – Spheres • Find which solid has greatest volume. • Given surface area or volume of 3-dimensional figures, calculate a missing dimension. • Compare similarity of 3-D figures. • Calculate surface area and volume of complex 3-D figures that are combinations of the above. 	<p>Sue builds a sandcastle using two plastic molds. One of the molds is in the shape of a square pyramid that is 5 inches tall and the edge of the base measures 3.5 inches. The other mold is in the shape of a cone that is 7 inches tall and the diameter of the base is 9 inches. How much sand, in cubic inches, can fit in each plastic mold?</p>	<ul style="list-style-type: none"> • Height • Slant length • Great circle • Hemisphere • Radius • Diameter 	<p>Critical</p>

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
GEOMETRY AND MEASUREMENT					
	<p>8.GM.2: (cont.)</p> <p>PS.7: Look for and make use of structure.</p>	<ul style="list-style-type: none"> • Use properties of operation and equality. • Classify geometric shapes based upon their attributes. • See expressions, equations, and geometric figures as single objects or as being composed of several objects. 	<p>CFA.Q4.B – wk 32 (S.A. of sphere only)</p> <p>CFA.Q4.C – wk 33</p>		Critical

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
GEOMETRY AND MEASUREMENT					
<ul style="list-style-type: none"> • Congruent • Rotation • Reflection • Translation 	<p>8.GM.4: 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. Describe a sequence that exhibits the congruence between two given congruent figures.</p>	<ul style="list-style-type: none"> • Solve and compare ratios and proportions. • Find and compare unit rates. • Find missing sides of similar figures. • Identify and perform, translations, reflections, and rotations of 2-D figures • Describe a sequence of transformations that shows the congruence between two given congruent figures. 	<p>Two triangles are congruent. Describe a sequence of transformations that would show that the triangles are congruent.</p> <p>CFA.Q4.A – wk 30</p>	<ul style="list-style-type: none"> • Ratio • Proportion • Cross Product • Similar Figures 	Important
<ul style="list-style-type: none"> • Similar Figures • Transformations 	<p>8.GM.5: 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. Describe a sequence that exhibits the similarity between two given similar figures.</p>	<ul style="list-style-type: none"> • Determine whether two figures are similar by a sequence of transformations. • Describe a sequence of transformations that shows the similarity between two given similar figures. 	<p>CFA.Q4.A – wk 30</p>		Important

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
DATA ANALYSIS, STATISTICS, AND PROBABILITY					
<ul style="list-style-type: none"> • Scatterplots • Best-fit lines 	<p>8.DSP.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantitative variables. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.</p>	<ul style="list-style-type: none"> • Construct a scatterplot given real-world data points. • Draw line or curve of best-fit. • Explain the relationship between two quantities represented in a scatterplot. • Utilize graphing technology to plot scatterplots and create lines of best fit. • Describe observations and their effect on data, including: <ul style="list-style-type: none"> – Clustering – Outliers – Positive and negative association – Linear and non-linear 	<p>Data for 10 students' math and Science scores are provided in the table.</p> <p>Construct a scatter plot for this data and describe the association between the Math and Science scores.</p>	<ul style="list-style-type: none"> • Clustering • Outliers • Association 	<p>Critical</p>

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DATA ANALYSIS, STATISTICS, AND PROBABILITY																																						
<ul style="list-style-type: none"> Scatterplots 	<p>8.DSP.1: (cont.)</p> <p>PS.5: Use appropriate tools strategically.</p>	<ul style="list-style-type: none"> Use pencil/paper and graphing calculators. Make decisions to choose appropriate tools to solve the problem. Use technology for representation, reasoning, communication and problem solving. 	<table border="1" data-bbox="1318 350 1589 1162"> <thead> <tr> <th data-bbox="1318 350 1409 472">Stu- dents</th> <th data-bbox="1409 350 1503 472">Math</th> <th data-bbox="1503 350 1589 472">Sci</th> </tr> </thead> <tbody> <tr><td data-bbox="1318 472 1409 540">A</td><td data-bbox="1409 472 1503 540">85</td><td data-bbox="1503 472 1589 540">83</td></tr> <tr><td data-bbox="1318 540 1409 609">B</td><td data-bbox="1409 540 1503 609">50</td><td data-bbox="1503 540 1589 609">70</td></tr> <tr><td data-bbox="1318 609 1409 677">C</td><td data-bbox="1409 609 1503 677">64</td><td data-bbox="1503 609 1589 677">68</td></tr> <tr><td data-bbox="1318 677 1409 745">D</td><td data-bbox="1409 677 1503 745">42</td><td data-bbox="1503 677 1589 745">40</td></tr> <tr><td data-bbox="1318 745 1409 813">E</td><td data-bbox="1409 745 1503 813">56</td><td data-bbox="1503 745 1589 813">60</td></tr> <tr><td data-bbox="1318 813 1409 881">F</td><td data-bbox="1409 813 1503 881">93</td><td data-bbox="1503 813 1589 881">96</td></tr> <tr><td data-bbox="1318 881 1409 950">G</td><td data-bbox="1409 881 1503 950">34</td><td data-bbox="1503 881 1589 950">33</td></tr> <tr><td data-bbox="1318 950 1409 1018">H</td><td data-bbox="1409 950 1503 1018">24</td><td data-bbox="1503 950 1589 1018">27</td></tr> <tr><td data-bbox="1318 1018 1409 1086">I</td><td data-bbox="1409 1018 1503 1086">63</td><td data-bbox="1503 1018 1589 1086">63</td></tr> <tr><td data-bbox="1318 1086 1409 1154">J</td><td data-bbox="1409 1086 1503 1154">72</td><td data-bbox="1503 1086 1589 1154">74</td></tr> </tbody> </table> <p data-bbox="1331 1243 1577 1276">CFA.Q4.D – wk 35</p>	Stu- dents	Math	Sci	A	85	83	B	50	70	C	64	68	D	42	40	E	56	60	F	93	96	G	34	33	H	24	27	I	63	63	J	72	74		<p>Critical</p>
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DATA ANALYSIS, STATISTICS AND PROBABILITY																			
<ul style="list-style-type: none"> Scatterplots Best-fit lines 	<p>8.DSP.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 describe the model fit by judging the closeness of the data points to the line.</p> <p>PS.4: Model with mathematics.</p>	<ul style="list-style-type: none"> Draw line of best-fit. Explain whether a straight line is the best way to model the data. Solve problems using representations. Use diagrams, two-way tables, graphs, flowcharts, formulas to map relationships between quantities. Analyze relationships and draw conclusions. 	<p>[The fuel tank in Ellen’s car has a capacity of 13.5 gallons. Before a trip she fills her car completely with gasoline. The table shows the total amount of gasoline used and the distance Ellen traveled. Construct a scatter plot for this data such that the distance traveled is the dependent variable and the gasoline used is the independent variable. Describe the relationship between the variables. If the data is linear, sketch a line to fit the data. Do you think the line represents a good fit for the data set? Why or why not? [Example continue in next standard.]</p> <table border="1" data-bbox="1329 886 1598 1175"> <thead> <tr> <th>Total Gallons of Gasoline Used</th> <th>Miles Traveled</th> </tr> </thead> <tbody> <tr> <td>1.8</td> <td>45</td> </tr> <tr> <td>2.4</td> <td>60</td> </tr> <tr> <td>3.8</td> <td>100</td> </tr> <tr> <td>5.5</td> <td>150</td> </tr> <tr> <td>7.3</td> <td>200</td> </tr> <tr> <td>8.2</td> <td>225</td> </tr> </tbody> </table> <p>CFA.Q4.D –wk 35</p>	Total Gallons of Gasoline Used	Miles Traveled	1.8	45	2.4	60	3.8	100	5.5	150	7.3	200	8.2	225	<ul style="list-style-type: none"> Strong and weak correlation 	<p>Important</p>
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DATA ANALYSIS, STATISTICS AND PROBABILITY					
<ul style="list-style-type: none"> Best-fit lines to model real-world situations 	<p>8.DSP.3: Write and use equations that model linear relationships to make predictions, including interpolation and extrapolation, in real-world situations involving bivariate measurement data; interpret the slope and y-intercept.</p> <p>PS.6: Attend to precision.</p>	<ul style="list-style-type: none"> Estimate slope and y-intercept in order to write the equation of a best-fit line. Explain the real-world meaning of the slope and y-intercept. Predict future quantity based on best-fit line. Use clear definitions. State the meaning of symbols and use them consistently and appropriately. Use correct mathematical terms and language Calculate accurately. Check for validity of results. Specify units of measure. Label axes to clarify correspondence. Give formulated explanations. Make explicit use of definitions. 	<p>Write a linear equation to model the data. What does the slope and y-intercept represent in terms of the context? Do they seem reasonable? Use your equation to predict the number of miles Ellen could travel before her fuel tank is empty.</p> <p>CFA.Q4.D – wk 35</p>	<ul style="list-style-type: none"> Interpolation Extrapolation 	Critical

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
DATA ANALYSIS, STATISTICS AND PROBABILITY					
	<p>8.DSP.4: Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. Understand and use appropriate terminology to describe independent, dependent, complementary, and mutually exclusive events.</p>				Important
<ul style="list-style-type: none"> • Probability of Compound Events • Tree Diagrams • Tables 	<p>8.DSP.5: Represent sample spaces and find probabilities of compound events (independent and dependent) using methods, such as organized lists, tables, and tree diagrams.</p> <p>PS.7: Look for and make use of structure.</p>	<ul style="list-style-type: none"> • Calculate the probability of compound events using a lists, tables, and tree diagrams. • Discern a pattern or structure. 	<p>Ray flips a coin and then rolls a standard six-sided die. List all of the possible outcomes. Then, find the probability of the coin landing on heads and rolling an even number.</p> <p>CFA.Q4.E-wk 37</p>	<ul style="list-style-type: none"> • Tree Diagram 	Important

CONTENT	STANDARD INDICATORS	SKILLS	ASSESSMENT	VOCABULARY	ILEARN
DATA ANALYSIS, STATISTICS AND PROBABILITY					
<ul style="list-style-type: none"> Multiplication Counting Principle 	<p>8.DSP.6: For events with a large number of outcomes, understand the use of the multiplication counting principle. Develop the multiplication counting principle and apply it to situations with a large number of outcomes.</p> <p>PS.6: Attend to precision.</p>	<ul style="list-style-type: none"> Use the multiplication counting principle to find the number of possible outcomes. Show how solving a problem using a tree diagram or table will result in the same answer as with using the multiplication counting principle. Calculate accurately. 	<p>Mel is creating a login password. His password will consist of three numbers using the digits 0-9 followed by three letters. The letters may be upper case or lower case and the letters and digits may be repeated. How many different passwords are possible?</p>	<ul style="list-style-type: none"> Multiplication Counting Principle 	<p>Important</p>