	Grade 3 Mathematics Performance Level Descriptors (PLDs)			
	Below Basic	**Basic**	**Proficient**	**Advanced**
Policy	Student demonstrates **minimal understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **partial understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **adequate understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **thorough understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.
Standard	**Operations and Algebraic Thinking**			
Operations and Algebraic Thinking	**A student at this level** attempts to solve one-step word problems by using addition and subtraction, attempts to calculate sums and differences of whole numbers, and attempts to find unknown terms in addition and subtraction equations.	**A student at this level** can solve one-step problems and calculate whole-number products and quotients. The student can find an unknown in a multiplication equation and extend the terms of an arithmetic pattern.	**A student at this level** can solve two-step word problems, apply a property of operations to multiply and divide, and calculate and interpret whole-number products and quotients. The student can fluently multiply and divide up to 100, find unknowns in multiplication and division equations, and identify rules for arithmetic patterns.	**A student at this level** can solve multistep word problems and apply multiple properties of operations to multiply and divide. The student can calculate, interpret, and create real-world problems involving whole-number products and quotients and explain rules for arithmetic patterns.
	Number and Operations in Base Ten			
Number and Operations in Base Ten	**A student at this level** attempts to identify the place values of digits in the ones, tens, and hundreds places. The student attempts to add or subtract whole numbers up to 100.	**A student at this level** can identify the place values of digits in the ones, tens, hundreds, and thousands places and multiply one-digit numbers. The student can add and subtract whole numbers up to 100.	**A student at this level** can round whole numbers to the nearest 10 or 100 and multiply one-digit whole numbers by multiples of 10. The student can add and subtract whole numbers fluently up to 1,000 by applying a variety of strategies.	**A student at this level** can round three- and four-digit whole numbers and multiply one-digit whole numbers by multiples of 100. The student can evaluate the most efficient strategy for solving a given addition or subtraction equation and identify errors in a solution strategy for a given addition or subtraction equation.

	Number and Operations—Fractions			
Number and Operations—Fractions	**A student at this level** attempts to identify fractional parts of one whole and attempts to recognize unit fractions on a visual model.	**A student at this level** can understand a unit fraction as an equal part of one whole and represent unit fractions on a number line. The student can compare fractions with the same denominator.	**A student at this level** can understand fractions in terms of equal parts of one whole and intervals on a number line. The student can recognize fractional equivalence supported by visual models and compare fractions with the same numerator or the same denominator by using <, >, or =.	**A student at this level** can understand fractions, fractional equivalence, comparisons, unit fractions, and addition and subtraction of fractions in terms of equal partitions of one or more wholes and intervals on a number line.
	Measurement and Data			
Measurement and Data	**A student at this level** attempts to tell and write time and attempts to recognize standard and metric units of volume. The student attempts to interpret a unit-scaled pictograph or bar graph and attempts to recognize the side lengths of polygons.	**A student at this level** can tell and write time and measure length. The student can draw and interpret unit-scaled pictographs, bar graphs, and line plots and find perimeters when given the side lengths of polygons.	**A student at this level** can tell and write time and measure time intervals in minutes. The student can measure length, liquid volume, and mass and draw and interpret scaled pictographs, bar graphs, and line plots. The student can solve problems related to perimeter and area and their relationship.	**A student at this level** can solve time interval problems and multistep problems involving interpreting scaled pictographs, bar graphs, and line plots. The student can recognize patterns involving the relationship between area and perimeter.
	Geometry			
Geometry	**A student at this level** attempts to partition symmetrical shapes into halves. The student attempts to recognize quadrilaterals.	**A student at this level** can identify the fractions associated with shapes partitioned into equal areas. The student can recognize that shapes fit into different categories.	**A student at this level** can partition shapes into equal areas and relate the areas to unit fractions. The student can recognize that shapes fit into different categories and create examples and non-examples.	**A student at this level** can partition shapes into equal areas in a variety of ways and relate the areas to fractional parts.

	Grade 4 Mathematics Performance Level Descriptors (PLDs)			
	Below Basic	**Basic**	**Proficient**	**Advanced**
Policy	Student demonstrates **minimal understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **partial understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **adequate understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **thorough understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.
Standard	**Operations and Algebraic Thinking**			
Operations and Algebraic Thinking	**A student at this level** attempts to solve one-step word problems by adding, subtracting, multiplying, and dividing. The student attempts to find all factor pairs to 24.	**A student at this level** can solve one-step word problems by multiplying and dividing with whole-number factors, products, dividends, divisors, and quotients. The student can recognize multiples of a given one-digit number, find all factor pairs to 48, and identify the next term in a number or shape pattern.	**A student at this level** can interpret multiplication equations as comparisons and use them to solve multistep word problems. The student can find factor pairs and identify multiples of a given one-digit number. The student can generate number and shape patterns that follow a given rule, determine whether a whole number up to 100 is prime or composite, and interpret remainders in context.	**A student at this level** can interpret multiplication equations as comparisons and use them to solve multistep word problems, using the four operations and an unknown quantity as a variable. The student can find prime factors of a given number; generate the rules for given number and shape patterns, including rules expressed algebraically; and explain the difference between prime and composite numbers.
	Number and Operations in Base Ten			
Number and Operations in Base Ten	**A student at this level** attempts to add and subtract with up to three-digit addends, subtrahends, and minuends. The student attempts to use place value to read and write numbers to 1,000 in standard form.	**A student at this level** can add and subtract multi-digit whole numbers. The student can find whole-number quotients to two digits by using a whole-number dividend and divisor and multiply a two-digit whole number by a one-digit whole number. The student can read and write numbers in standard form, use place value to round	**A student at this level** can add and subtract fluently and multiply and divide multi-digit whole numbers. The student can represent place values by left and right positions as multiples or quotients of 10, 100, 1,000, or 10,000 and read and write multi-digit numbers in standard form and expanded notation. The student can	**A student at this level** can identify efficient strategies for adding or subtracting multi-digit whole numbers and identify and correct errors in a given strategy for adding or subtracting multi-digit whole numbers. The student can use place value to explain and illustrate multiplication algorithms.

		numbers to the greatest place value, and recognize whole-number patterns in base ten.	estimate and round numbers to specified place values and illustrate and explain calculations when multiplying and dividing.	
	Number and Operations—Fractions			
Number and Operations—Fractions	**A student at this level** attempts to compare fractions with like denominators and attempts to identify tenths, both as fractions and as decimals.	**A student at this level** can compare fractions with like numerators or like denominators and identify tenths and hundredths, both as fractions and as decimals, by using visual models. The student can add or subtract fractions with like denominators and solve word problems with addition or subtraction of fractions with like denominators.	**A student at this level** can understand and use fraction equivalence; compare fractions symbolically by using <, >, and =; and express and represent equivalence between fractions with denominators of 10 and 100. The student can identify unit fractions that compose fractions with numerators > 1, add and subtract fractions with like denominators, and solve two-step word problems with addition and subtraction of fractions with like denominators. The student can multiply fractions by whole numbers, solve word problems with multiplication of fractions by whole numbers, and compare and order decimals to hundredths.	**A student at this level** can understand, explain, and represent fraction equivalence; order more than two fractions; and represent and decompose fractions as a sum of unit fractions. The student can add and subtract fractions and mixed numbers with like denominators, solve multistep word problems with addition and subtraction of fractions with like denominators, and represent and explain multiplication of fractions by whole numbers. The student can solve multistep word problems with multiplication of fractions by whole numbers and order three or more decimals to hundredths from least to greatest or greatest to least.

	Measurement and Data			
Measurement and Data	**A student at this level** attempts to know that converting a measurement from larger units to smaller units increases the number of units. The student attempts to order angles by size.	**A student at this level** can convert measurements by using multiplication and identify data from line plots in fractional units. The student can solve addition and subtraction problems involving angles and find the areas and perimeters of rectangles.	**A student at this level** can solve one-step problems in measurement conversion by using the four operations and draw line plots to represent data in fractions of a unit. The student can solve two-step problems involving the interpretation of data on a line plot, measure and draw angles, and recognize that angles are fractions of a circle. The student can solve addition and subtraction word problems involving angles and find the areas and perimeters of rectangles in real-world and mathematical problems.	**A student at this level** can solve multistep problems in measurement conversion by using the four operations and draw line plots in fractions of a unit to represent data. The student can solve multistep problems involving the interpretation of data on a line plot and solve multistep addition and subtraction word problems involving angles.
	Geometry			
Geometry	**A student at this level** attempts to draw points and line segments. The student attempts to recognize symmetrical and nonsymmetrical figures.	**A student at this level** can draw points, lines, and angles and identify them in two-dimensional figures. The student can identify a line of symmetry.	**A student at this level** can draw points, lines, line segments, rays, angles, and parallel and perpendicular lines and identify them in two-dimensional figures. The student can identify right triangles, identify and draw lines of symmetry in two-dimensional figures, and classify quadrilaterals based on the presence or absence of parallel or perpendicular lines.	**A student at this level** can draw, define, and interpret points, lines, line segments, rays, angles, and parallel and perpendicular lines and represent them in two-dimensional figures. The student can identify right triangles, interpret symmetry as a characteristic of two-dimensional figures, and provide examples of two-dimensional figures when given specific characteristics.

	Grade 5 Mathematics Performance Level Descriptors (PLDs)			
	Below Basic	**Basic**	**Proficient**	**Advanced**
Policy	Student demonstrates **minimal understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **partial understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **adequate understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **thorough understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.
Standard	**Operations and Algebraic Thinking**			
Operations and Algebraic Thinking	**A student at this level** attempts to evaluate a one-step numerical expression and attempts to identify the next term in a pattern. The student attempts to identify the coordinate plane.	**A student at this level** can write simple numerical expressions and apply a set of parentheses appropriately. The student can identify or generate a rule for a given pattern and identify ordered pairs on a coordinate plane.	**A student at this level** can write, evaluate, and interpret numerical expressions using parentheses. The student can generate numerical patterns from rules and explain the corresponding relationships between two patterns. The student can translate numerical patterns into ordered pairs and plot the points on a coordinate plane.	**A student at this level** can write, evaluate, and interpret numerical expressions using multiple levels of grouping symbols. The student can generate and explain numerical patterns from rules and explain the corresponding relationships between two patterns. The student can translate numerical patterns into ordered pairs, plot the points on a coordinate plane, and explain data displayed on a coordinate plane.

	Number and Operations in Base Ten			
Number and Operations in Base Ten	**A student at this level** attempts to identify the place value name for a given digit or the digit for a given place value in a decimal to the tenths. The student attempts to add and subtract decimals to the hundredths.	**A student at this level** can identify the place value name to the thousandths and compare decimals to the hundredths. The student can multiply multi-digit whole numbers and multiply decimals to the hundredths. The student can multiply and divide by powers of ten.	**A student at this level** can reason quantitatively about the directional characteristics of place value. The student can compare decimal numbers, round to thousandths, and evaluate powers of ten using whole-number exponents. The student can multiply and divide multi-digit whole numbers and multiply and divide decimals to the hundredths.	**A student at this level** can compare three or more decimals to the thousandths, including in expanded form, and evaluate powers of ten using whole-number exponents. The student can round decimals to any place and fluently multiply and divide multi-digit numbers. The student can fluently add, subtract, multiply, and divide decimals to the thousandths.
	Number and Operations—Fractions			
Number and Operations—Fractions	**A student at this level** attempts to use models to add and subtract unit fractions with unlike denominators.	**A student at this level** can use models to add and subtract fractions with unlike denominators and solve one-step word problems with addition and subtraction of fractions with unlike denominators. The student can fluently multiply a fraction by a whole number.	**A student at this level** can solve word problems with fractions with unlike denominators by adding, subtracting, and multiplying. The student can fluently multiply fractions. The student can use models to represent and solve division problems involving fractions. The student can solve word problems that involve the division of whole numbers and that lead to answers in the form of fractions or mixed numbers.	**A student at this level** can solve multistep word problems with fractions with unlike denominators by adding, subtracting, and multiplying. The student can represent and solve division problems involving fractions without using models. The student can solve multistep word problems that involve the division of whole numbers and that lead to answers in the form of fractions or mixed numbers.

	Measurement and Data			
Measurement and Data	**A student at this level** attempts to calculate one-step conversions of length and attempts to identify measures of volume. The student attempts to identify perimeter and area as attributes of two-dimensional objects.	**A student at this level** can calculate one-step conversions of length and mass and create line plots consisting of unit fractions. The student can find the volumes of right rectangular prisms by counting cubes.	**A student at this level** can calculate conversions of time, length, volume, and mass and create and interpret line plots consisting of unit fractions. The student can find the volumes of right rectangular prisms and distinguish between perimeter, area, and volume.	**A student at this level** can calculate multistep conversions of time, length, volume, and mass, create line plots, and interpret multiple characteristics of line plots. The student can find the volumes of right rectangular prisms and identify the appropriate application of perimeter, area, and volume.
	Geometry			
Geometry	**A student at this level** attempts to plot points in Quadrant I and attempts to identify attributes of two-dimensional figures.	**A student at this level** can identify ordered pairs in Quadrant I and classify two-dimensional figures according to their attributes.	**A student at this level** can use *x/y*-coordinate systems to graph and identify points in Quadrant I. The student can recognize two-dimensional figures by hierarchy.	**A student at this level** can use and apply *x/y*-coordinate systems to interpret and graph problems with real-world contexts in Quadrant I. The student can classify two-dimensional figures by hierarchy.

	Grade 6 Mathematics Performance Level Descriptors (PLDs)			
	Below Basic	**Basic**	**Proficient**	**Advanced**
Policy	Student demonstrates **minimal understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **partial understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **adequate understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **thorough understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.
Standard	**Ratios and Proportional Relationships**			
Ratios and Proportional Relationships	**A student at this level** attempts to understand ratio concepts as part-to-part and numerator/denominator relationships and attempts to identify equivalent ratios.	**A student at this level** can understand ratio concepts as part-to-part, dividend/divisor relationships, equivalent fractions, and percentages.	**A student at this level** can understand ratio concepts as numerical comparisons using division, equivalence of rates, unit rates, percentages, and measurement conversions. The student can use ratio reasoning to solve problems.	**A student at this level** can understand ratio concepts as numerical and symbolic comparisons, equivalence and inequality of rates, unit rates, percentages and fractions of percentages, and measurement conversions.
	The Number System			
The Number System	**A student at this level** attempts to identify common multiples and attempts to order positive integers on a number line. The student attempts to identify integer coordinate pairs in Quadrant I.	**A student at this level** can solve problems involving division of fractions and identify common factors and common multiples. The student can add, subtract, and multiply whole numbers and order positive and negative integers on a number line. The student can identify the absolute values of positive and negative integers and identify integer points in all four quadrants.	**A student at this level** can apply understanding of multiplication and division to divide decimals by decimals and fractions by fractions. The student can find and apply least common multiples and greatest common factors and compute fluently with multi-digit whole numbers and multi-digit decimals. The student can represent absolute values of rational numbers and solve problems involving plotting integer points in all four quadrants.	**A student at this level** can interpret and apply understanding of multiplication and division to divide decimals by decimals and fractions by fractions. The student can apply previous understanding of numbers to the system of rational numbers in real-world contexts.

	Expressions and Equations			
Expressions and Equations	**A student at this level** attempts to read and write expressions with variables and attempts to use trial and error to test one-step one-variable equations.	**A student at this level** can read, write, and evaluate expressions with variables and write equivalent expressions. The student can use trial and error to test inequalities and solve one-step one-variable equations.	**A student at this level** can read, write, and evaluate expressions with variables and whole-number exponents. The student can write inequalities, apply properties of operations to write equivalent expressions, and represent and model relationships between dependent and independent variables.	**A student at this level** can read, write, evaluate, and compare expressions with variables and whole-number exponents. The student can understand and interpret expressions, equations, and inequalities in real-world contexts. The student can interpret and analyze relationships between dependent and independent variables in real-world contexts and translate among graphs, tables, and equations.
	Geometry			
Geometry	**A student at this level** attempts to solve word problems involving the areas of rectangles and involving the surface areas and volumes of cubes.	**A student at this level** can solve word problems involving the areas of rectangles and triangles and involving the surface areas and volumes of right rectangular prisms. The student can identify three-dimensional objects represented as nets and use previous understanding of packing unit cubes to understand the formula for the volume of a right rectangular prism.	**A student at this level** can solve word problems involving the areas of polygons and the surface areas and volumes of three-dimensional objects. The student can represent three-dimensional figures by using nets and find the lengths of polygonal sides drawn in a coordinate plane.	**A student at this level** can solve multistep real-world word problems involving the areas of polygons and involving the surface areas and volumes of three-dimensional objects. The student can extend the volume formula of a right rectangular prism to include right rectangular prisms with fractional edge lengths.

	Statistics and Probability			
Statistics and Probability	**A student at this level** attempts to describe the difference between uniform and variable data.	**A student at this level** can find the mean, median, mode, range, maximum, and minimum of a data set.	**A student at this level** can describe the nature and distribution of data in terms of shape, center, spread, and number of observations. The student can find the first quartile, third quartile, and interquartile range of a data set and display data in line plots, histograms, and box plots.	**A student at this level** can determine and explain the most appropriate measure of center and the most appropriate measure of variability based on the shape of the data and the context of the problem.

	Grade 7 Mathematics Performance Level Descriptors (PLDs)			
	Below Basic	**Basic**	**Proficient**	**Advanced**
Policy	Student demonstrates **minimal understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **partial understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **adequate understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **thorough understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.
Standard	Ratios and Proportional Relationships			
Ratios and Proportional Relationships	**A student at this level** attempts to identify proportional relationships from relationships between equivalent ratios and percentages.	**A student at this level** can determine proportional relationships by examining tables and graphs and compute unit rates.	**A student at this level** can analyze proportional relationships and use them to solve problems by computing and comparing unit rates and recognizing equivalent ratios. The student can solve problems with percentages. The student can identify specified points on the graph of a proportional relationship and interpret their meaning.	**A student at this level** can analyze and interpret numerical and symbolic proportional relationships and use them to solve complex multistep problems by comparing rates and ratios, determining and applying rates, and determining rates from graphs. The student can identify the points (0, 0) and (1, r) on the graph of a proportional relationship, where r is the unit rate.

	The Number System			
The Number System	**A student at this level** attempts to use addition, subtraction, multiplication, and division to solve one-step word problems involving positive fractions and decimals.	**A student at this level** can add and subtract rational numbers and add, subtract, multiply, and divide integers. The student can convert a fraction to a decimal by using long division.	**A student at this level** can apply understanding of fractions and decimals to fluently use all four arithmetic operations with rational numbers. The student can recognize additive inverses, rules for signs, absolute values, and properties of operations and use them to solve real-world problems with rational numbers.	**A student at this level** can apply understanding of all four operations with rational numbers to solve multistep real-world problems, using fractions and decimals interchangeably, including translating among multiple representations of rational numbers.
	Expressions and Equations			
Expressions and Equations	**A student at this level** attempts to use one or more properties of operations to combine like terms in an expression. The student attempts to write one-step equations to solve problems.	**A student at this level** can use one property of operations, such as the distributive property, to generate equivalent linear expressions. The student can solve two-step problems with rational numbers.	**A student at this level** can use properties of operations to generate equivalent expressions and to solve multistep problems with rational coefficients. The student can use variables to represent quantities in multistep problems, solve multistep problems with equations and inequalities, and assess the reasonableness of answers.	**A student at this level** can use multiple properties of operations to generate equivalent expressions and to solve complex multistep problems with rational coefficients. The student can use variables to represent quantities in complex multistep word problems with equations and inequalities requiring multistep solutions. The student can interpret solutions in context, including graphs.

	Geometry			
Geometry	**A student at this level** attempts to identify the vertices, edges, and faces of a right rectangular prism. The student attempts to draw and describe specific polygons with labeled vertices and attempts to identify their sides and angles. The student attempts to identify the center, radius, diameter, and circumference of a circle.	**A student at this level** can describe the vertices, edges, and faces of a right rectangular prism and describe its surface area as the sum of the areas of its six rectangular faces. The student can construct triangles and use formulas to find the circumference of a circle.	**A student at this level** can construct triangles and special quadrilaterals and describe the relationship between their sides and angles. The student can write and solve mathematical problems involving angle measures, including intersecting lines and complementary, supplementary, vertical, and adjacent angles. The student can use formulas to find the area of a circle and to find the surface areas and volumes of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**A student at this level** can create geometric figures and analyze and compare their general properties. The student can solve complex multistep problems involving the angle measures, areas, surface areas, and volumes of right rectangular prisms, right triangular prisms, and shapes composed of those prisms.
	Statistics and Probability			
Statistics and Probability	**A student at this level** attempts to distinguish between populations and samples and attempts to understand that samples can be used to gain information about a population. The student attempts to understand that probability is quantifiable between 0 and 1.	**A student at this level** can use random sampling and numerical measures of center and variability to describe a population. The student can calculate simple probability.	**A student at this level** can use random sampling and numerical measures to draw comparative inferences about two populations. The student can develop, use, and evaluate probability models. The student can compare theoretical and experimental probabilities and find probabilities of compound events, including simulations.	**A student at this level** can draw interpretive and comparative inferences about multiple populations and develop, use, and evaluate multiple probability models. The student can distinguish between uniform and nonuniform probability models and compare theoretical and experimental probabilities of compound events.

	Grade 8 Mathematics Performance Level Descriptors (PLDs)			
	Below Basic	**Basic**	**Proficient**	**Advanced**
Policy	Student demonstrates **minimal understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **partial understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **adequate understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.	Student demonstrates **thorough understanding** of and ability to apply the knowledge and skills for their grade level that are associated with college content-readiness.
Standard	**The Number System**			
The Number System	**A student at this level** attempts to recognize irrational numbers as a category distinct from rational numbers.	**A student at this level** can recognize examples of irrational numbers as square roots of non-perfect squares or cube roots of non-perfect cubes.	**A student at this level** can interpret irrational numbers as non-repeating and nonterminating decimals and write, order, or plot approximations of irrational numbers between two whole numbers.	**A student at this level** can determine fractional equivalents of repeating decimals.
	Expressions and Equations			
Expressions and Equations	**A student at this level** attempts to understand exponents as representing repeated multiplication. The student attempts to find the slope of a line by using a graph and attempts to represent whole-number multiples of ten in scientific notation.	**A student at this level** can rewrite expressions with negative exponents as fractions with positive exponents and calculate the value of a positive base with a negative integer exponent. The student can express quantities in scientific notation and understand the meaning of equations with two variables.	**A student at this level** can understand and apply the properties of integer exponents and scientific notation and understand and apply the connections between proportional relationships, the slope of a graph, and triangle similarity. The student can solve linear equations and systems of linear equations and solve word problems with two linear equations in two variables.	**A student at this level** can understand, apply, and interpret the properties of integer exponents, scientific notation, and operations in scientific notation and understand and interpret the graphs of proportional relationships and the relationship between similar triangles and the slope of a graph. The student can interpret, analyze, graph, and solve linear equations in two variables, solve complex multistep word problems involving systems of linear equations, and identify systems with no solutions, one

				solution, and infinitely many solutions.
Functions				
Functions	**A student at this level** attempts to identify relations that are functions and relations that are not functions.	**A student at this level** can identify and define linear functions, distinguish between linear and nonlinear functions, and identify the slope and *y*-intercept of a linear function.	**A student at this level** can define, evaluate, compare, and use functions that model linear relationships between quantities in multiple representations. The student can use functions to model linear relationships between two quantities in slope-intercept form.	**A student at this level** can define, evaluate, compare, analyze, and use functions that model nonlinear relationships between quantities in multiple representations. The student can identify characteristics of different types of functions.
Geometry				
Geometry	**A student at this level** attempts to recognize congruence and similarity and attempts to distinguish between them by using physical models. The student attempts to find the hypotenuse of a right triangle whose sides are Pythagorean triples and attempts to recognize single transformations.	**A student at this level** can recognize and identify congruence and similarity via multiple transformations. The student can apply the Pythagorean theorem in two dimensions and identify supplementary angles.	**A student at this level** can understand, analyze, and justify congruence and similarity through translations, reflections, rotations, and dilations. The student can apply the Pythagorean theorem and apply the formulas of volume of a cone, volume of a cylinder, volume of a sphere, and surface area of a cylinder. The student can understand and apply properties of triangles and of interior and exterior angles.	**A student at this level** can interpret and apply the Pythagorean theorem in three dimensions and justify or complete a proof of the Pythagorean theorem. The student can apply the formulas of volume of a prism, volume of a cone, volume of a cylinder, and volume of a sphere to real-world problems.

	Statistics and Probability			
Statistics and Probability	**A student at this level** attempts to recognize associations in bivariate data.	**A student at this level** can recognize and describe associations in bivariate data and identify the line of best fit for a linear association.	**A student at this level** can construct and describe bivariate data and recognize, describe, and investigate patterns of association in bivariate data. The student can interpret the slope and *y*-intercept of the line of best fit and identify patterns of association between two categorical variables.	**A student at this level** can describe, analyze, and investigate patterns of association in bivariate categorical data in a two-way table.