First Nine Weeks		
Grade: 6	**Subject: Math CIP Pacing Guide**	**Year: 2017-2018**

Time Frame	SOL	Student Essential Knowledge and Skills	Vocabulary	Resources	Blooms
5 Days	**Computation and Estimation** The student will solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of decimals. **(6.7)**	Solve single-step and multistep practical problems involving addition, subtraction, multiplication and division with decimals expressed to thousandths with no more than two operations.			Solve L4
3 days	**Number and Number Sense** The student will describe and compare data, using ratios, and will use appropriate notations, such as $\frac{a}{b}$, ***a* to *b*, and *a*:*b*. (6.1)**	• Describe a relationship within a set by comparing part of the set to the entire set. • Describe a relationship between two sets by comparing part of one set to a corresponding part of the other set • Describe a relationship between two sets by comparing all of one set to all of the other set. • Describe a relationship within a set by comparing one part of the set to another part of the same set. • Create a relationship in words for a given ratio expressed symbolically. • Represent a relationship in words that makes a comparision by using the notations $\frac{a}{}$, *a*:*b*, and *a to b.*			Describe – L2 Compare – L4 Use – L3 Represent – L3 Create – L6
3 days	**Number and Number Sense** •investigate and describe fractions, decimals and percents as ratios; **(6.2a)** •identify a given percent from a representation;**(6.2b)**	• Fractions, decimals, and percents are three different ways to express the same number. A ratio can be written using fraction form ($\frac{2}{3}$), a colon (2:3), or the word *to* (2 to 3). Any number that can be written as a fraction can be expressed as a terminating or repeating decimal or a percent. • Represent percents on a number line. • Represent, by shading a grid, a percent.			Investigate – L4 Describe – L2 Identify – L2 Express L2 Written L3 Demonstrate L3 Compare –

					L4 Order – L4 Represent L3
4 days	**Number and Number Sense** •demonstrate equivalent relationships among fractions, decimals, and percents; and **(6.2c)** • compare and order fractions, decimals, and percents. **(6.2d)**	• Identify the decimal and percent equivalents for numbers written in fraction form including repeating decimals. • Describe orally and in writing the equivalent relationships among decimals, percents, and fractions that have denominators that are factors of 100. • Compare two decimals through thousandths using manipulatives, pictorial representations, number lines, and symbols (<, ≤, ≥, >, =). • Compare two fractions with denominators of 12 or less using manipulatives, pictorial representations, number lines, and symbols (<, ≤, ≥, >, =). • Compare two percents using pictorial representations and symbols (<, ≤, ≥, >, =). • Order no more than 3 fractions, decimals, and percents (decimals through thousandths, fractions with denominators of 12 or less), in ascending or descending order			Describe – L2 Identify- L2 Demonstrate – L3 Compare – L4 Order – L4
10 days	**Comomputation and Estimation** The student will • multiply and divide fractions and mixed numbers; and **(6.6a)** • estimate solutions and then solve single-step and multistep practical problems involving addition, subtraction, multiplication, and division of fractions. **(6.6b)**	• Multiply and divide with fractions and mixed numbers. Answers are expressed in simplest form. • Solve single-step and multistep practical problems that involve addition and subtraction with fractions and mixed numbers, with and without regrouping, that include like and unlike denominators of 12 or less. Answers are expressed in simplest form.			Multiply L3 Divide L3 Solve L4 Estimate L4
5 days	**Number and Number Sense** •The student will demonstrate multiple representations of multiplication and division of fractions. **(6.4)**	• Demonstrate multiplication and division of fractions using multiple representations. • Model algorithms for multiplying and dividing with fractions using appropriate representations.			Demonstrate L3 Model L3

Second Nine Weeks

Time Frame	SOL	Student Essential Knowledge and Skills	Vocabulary	Resources	Blooms
2 Days	**Number and Number Sense** •The student will investigate and describe concepts of positive exponents and perfect squares. **(6.5)**	• Recognize and describe patterns with exponents that are natural numbers, by using a calculator. • Recognize and describe patterns of perfect squares not to exceed 20^2, by using grid paper, square tiles, tables, and calculators. • Recognize powers of ten by examining patterns in a place value chart: $10^4 = 10{,}000$, $10^3 = 1000$, $10^2 = 100$, $10^1 = 10$, $10^0 = 1$.			Investigate L4 Describe L2 Recognize L1 Examining L1
3 Days	**Computation and Estimation** The student will evaluate whole number numerical expressions, using the order of operations. **(SOL 6.8)**	• Simplify expressions by using the order of operations in a demonstrated step-by-step approach. The expressions should be limited to positive values and not include braces { } or absolute value | |. •Find the value of numerical expressions, using order of operations, mental mathematics, and appropriate tools. Exponents are limited to positive values.			Evaluate L4 Simplify L4 Find L1
5 Days	**Number and Number Sense** The student will • identify and represent integers; **(6.3a)** • order and compare integers; and **(6.3b)** • identify and describe absolute value of integers. **(6.3c)**	• Identify an integer represented by a point on a number line. • Represent integers on a number line. • Order and compare integers using a number line. • Compare integers, using mathematical symbols (<, >, =). • Identify and describe the absolute value of an integer.			Identify L2 Describe L2 Compare L2 Order L2 Represent L3

10 Days	**Measurement** The student will a) define pi (π) as the ratio of the circumference of a circle to its diameter; b) solve practical problems involving circumference and area of a circle, given the diameter or radius; c) solve practical problems involving area and perimeter; and d)describe and determine the volume and surface area of a rectangular prism. **(SOL 6.10)**	• Derive an approximation for pi (3.14 or $\frac{22}{7}$) by gathering data and comparing the circumference to the diameter of various circles, using concrete materials or computer models. • Find the circumference of a circle by substituting a value for the diameter or the radius into the formula $C = \pi d$ or $C = 2\pi r$. • Find the area of a circle by using the formula $A = \pi r^2$. • Apply formulas to solve practical problems involving area and perimeter of triangles and rectangles. • Create and solve problems that involve finding the circumference and area of a circle when given the diameter or radius. • Solve problems that require finding the surface area of a rectangular prism, given a diagram of the prism with the necessary dimensions labeled. • Solve problems that require finding the volume of a rectangular prism given a diagram of the prism with the necessary dimensions labeled.			Define- L1 Describe L1 Determine L3 Solve- L3 Find L1 Create L6
5 Days	**Measurement** • The student will make ballpark comparisons between measurements in the U.S. Customary System of measurement and measurements in the metric system. **(6.9)**	• Estimate the conversion of units of length, weight/mass, volume, and temperature between the U.S. Customary system and the metric system by using ballpark comparisons. Ex: 1 L ≈ 1qt. Ex: 4L ≈ 4 qts. • Estimate measurements by comparing the object to be measured against a benchmark.			Estimate L4 Make L4

Third Nine Weeks

Time Frame	SOL	Student Essential Knowledge and Skills	Vocabulary	Resources	Blooms
5 Days	**Geometry** •The student will determine congruence of segments, angles, and polygons. **(6.12)**	• Characterize polygons as congruent and noncongruent according to the measures of their sides and angles. • Determine the congruence of segments, angles, and polygons given their attributes. • Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving practical and mathematical problems.†			Determine L3 Characterize L2 Draw L3 Apply L6
3 Days	**Geometry** •The student will describe and identify properties of quadrilaterals. **(6.13)**	• Sort and classify polygons as quadrilaterals, parallelograms, rectangles, trapezoids, kites, rhombi, and squares based on their properties. Properties include number of parallel sides, angle measures and number of congruent sides. • Identify the sum of the measures of the angles of a quadrilateral as 360°.			Describe L2 Identify L2 Sort L3 Classify L2
5 Days	**Geometry** The student will • identify the coordinates of a point in a coordinate plane; and **(6.11a)** • graph ordered pairs in a coordinate plane. **(6.11b)**	• Identify and label the axes of a coordinate plane. • Identify and label the quadrants of a coordinate plane. • Identify the quadrant or the axis on which a point is positioned by examining the coordinates (ordered pair) of the point. • Graph ordered pairs in the four quadrants and on the axes of a coordinate plane. • Identify ordered pairs represented by points in the four quadrants and on the axes of the coordinate plane. • Relate the coordinate of a point to the distance from each axis and relate the coordinates of a single point to another point on the same horizontal or vertical line.			Identify L2 Graph L6 Relate L4

10 Days	**Probability and Statistics** The student, given a problem situation, will • construct circle graphs; **(6.14a)** • draw conclusions and make predictions, using circle graphs; and **(6.14b)** • compare and contrast graphs that present information from the same data set. **(6.14c)**	• Collect, organize and display data in circle graphs by depicting information as fractional. • Draw conclusions and make predictions about data presented in a circle graph. • Compare and contrast data presented in a circle graph with the same data represented in other graphical forms.			Construct L3 Draw conclusions L4 Make Predictions L4 Compare contrast L4 Collect L1 Organize L4 Display L6
5 Days	**Probability and Statistics** The student will •compare and contrast dependent and independent events; and **(6.16a)** • determine probabilities for dependent and independent events. **(6.16b)**	• Determine whether two events are dependent or independent. • Compare and contrast dependent and independent events. • Determine the probability of two dependent events. • Determine the probability of two independent events.			Compare L4 Contrast L4 Determine L3
5 Days	**Probability andStatistics** The student will • describe mean as balance point; and **(6.15a)** • decide which measure of center is appropriate for a given purpose. **(6.15b)**	• Find the mean for a set of data. • Describe the three measures of center and a situation in which each would best represent a set of data. • Identify and draw a number line that demonstrates the concept of mean as balance point for a set of data.			Describe L2 Decide L3 Find L2 Identify L2 Draw L3

Fourth Nine Weeks

Time Frame	SOL	Student Essential Knowledge and Skills	Vocabulary	Resources	Blooms
5 Days	**Patterns, Functions, and Algebra** • The student will solve one-step linear equations in one variable involving whole number coefficients and positive rational solutions. **(6.18)**	• Represent and solve a one-step equation, using a variety of concrete materials such as colored chips, algebra tiles, or weights on a balance scale. • Solve a one-step equation by demonstrating the steps algebraically. • Identify and use the following algebraic terms appropriately: *equation*, v*ariable*, *expression*, *term*, and *coefficient*.			Represent L2 Solve L3 Identify L2 Use L3
5 Days	**Patterns, Functions, and Algebra** • The student will identify and extend geometric and arithmetic sequences. **(6.17)**	• Investigate and apply strategies to recognize and describe the change between terms in arithmetic patterns. • Investigate and apply strategies to recognize and describe geometric patterns. • Describe verbally and in writing the relationships between consecutive terms in an arithmetic or geometric sequence. • Extend and apply arithmetic and geometric sequences to similar situations. • Extend arithmetic and geometric sequences in a table by using a given rule or mathematical relationship. • Compare and contrast arithmetic and geometric sequences. • Identify the common difference for a given arithmetic sequence. • Identify the common ratio for a given geometric sequence.			Identify L2 Extend L2 Investigate L4 Apply L3 Describe L2 Compare L4 Contrast L4

5 Days	**Patterns, Functions, and Algebra** The student will investigate and recognize • the identity properties for addition and multiplication;**(6.19a)** • the multiplicative property of zero **(6.19b)** • inverse property for multiplication **(6.19c)**	• Identify a real number equation that represents each property of operations with real numbers, when given several real number equations. • Test the validity of properties by using examples of the properties of operations on real numbers. • Identify the property of operations with real numbers that is illustrated by a real number equation.			Investigate L4 Identify L2 Recognize L1 Test L4
5 Days	**Patterns, Functions, and Algebra** •The student will graph inequalities on a number line. **(6.20)**	• Given a simple inequality with integers, graph the relationship on a number line. • Given the graph of a simple inequality with integers, represent the inequality two different ways using symbols (<, >, ≤, ≥).			Represent L2 Graph L3

Bloom's Taxonomy Key

1. Level 1 (L1) – Remembering – Pink
2. Level 2 (L2) – Understanding – Blue
3. Level 3 (L3) – Applying – Green
4. Level 4 (L4) – Analyzing – Yellow
5. Level 5 (L5) – Evaluating – Gray
6. Level 6 (L6) – Creating - Red