Mohawk Local Schools	Grade Math 6
Quarter 2	Curriculum Guide

Mathematical Practices

1. Make Sense of Problems and Persevere in Solving them
2. Reasoning Abstractly & Quantitatively
3. Construct Viable Arguments and Critique the Reasoning of Others
4. Model with Mathematics
5. Use Appropriate Tools Strategically
6. Attend to Precision
7. Look for and Make use of Structure
8. Look for and Express Regularity in Repeated Reasoning

Critical Areas of Focus Being Addressed:

- Expressions and Equations
- Number Sense
- Ratio and Proportional Relationships
- Modeling and Reasoning

Content Statements Addressed and Whether they are Knowledge, Reasoning, Performance Skill, or Product: (DOK1) (DOK2) (DOK3) (DOK4)	Underpinning Targets Corresponding with Standards and Whether they are Knowledge, Reasoning, Performance Skill, or Product: "I can…..", "Students Will Be Able To……."
6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. d. Use ratio reasoning to convert measurement units;	**DOK 1 I Can…** • Make a table of equivalent ratios using whole numbers. • Find the missing values in a table of equivalent ratios. • Plot pairs of values that represent equivalent ratios

manipulate and transform units appropriately when multiplying or dividing quantities. (DOK 2)	on the coordinate plane. • Know that a percent is a ratio of a number to 100. • Find a % of a number as a rate per 100. **DOK 2 I Can…** • Use tables to compare proportional quantities. • Solve real-world and mathematical problems involving ratio and rate, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. • Apply the concept of unit rate to solve real-world problems involving unit pricing. • Apply the concept of unit rate to solve real-world problems involving constant speed. • Solve real-world problems involving finding the whole, given a part and a percent. • Apply ratio reasoning to convert measurement units in real-world and mathematical problems. • Apply ratio reasoning to convert measurement units by multiplying or dividing in realworld and mathematical problems.
6.NS.2 Fluently divide multi-digit numbers using the standard algorithm. (DOK 1)	**DOK 1 I Can…** • Fluently divide multi-digit numbers using the standard algorithm with speed and accuracy.
6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. (DOK 1)	**DOK 1 I Can…** • Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation with speed and accuracy
6.NS.4 Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two	**DOK 1 I Can…**

whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2). (DOK 2)	• Identify the factors of two whole numbers less than or equal to 100 and determine the Greatest Common Factor. • Identify the multiples of two whole numbers less than or equal to 12 and determine the Least Common Multiple. **DOK 2 I Can…** • Apply the Distributive Property to rewrite addition problems by factoring out the Greatest Common Factor
6.NS.5 Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above /below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. (DOK 2)	**DOK 1 I Can..** • Identify an integer and its opposite **DOK 2 I Can…** • Use integers to represent quantities in real world situations (above/below sea level, etc) • Explain where zero fits into a situation represented by integers

6.NS.6 Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., -(-3) = 3 and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. (DOK 2)	**DOK 1 I Can…** • Identify a rational number as a point on the number line. • Identify the location of zero on a number line in relation to positive and negative numbers • Recognize opposite signs of numbers as locations on opposite sides of 0 on the number line • Recognize the signs of both numbers in an ordered pair indicate which quadrant of the coordinate plane the ordered pair will be located • Find and position integers and other rational numbers on a horizontal or vertical number line diagram • Find and position pairs of integers and other rational numbers on a coordinate plane **DOK 2 I Can…** • Reason that the opposite of the opposite of a number is the number itself. • Reason that when only the x value in a set of ordered pairs are opposites, it creates a reflection over the y axis, e.g., (x,y) and (-x,y) • Recognize that when only the y value in a set of ordered pairs are opposites, it creates a reflection over the x axis, e.g., (x,y) and (x, -y) • Reason that when two ordered pairs differ only by signs, the locations of the points are related by reflections across both axes, e.g., (-x, -y) and (x,y)
6.NS.7 Understand ordering and absolute value of rational numbers. a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.	**DOK 1 I Can..** • Order rational numbers on a number line Identify absolute value of rational numbers

For example, interpret -3>-7 as a statement that -3 is located to the right of -7 on a number line oriented from left to right. b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write -3°C > -7°C to express the fact that -3°C is warmer than -7°C. c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write |-30| = 30 to describe the size of the debt in dollars. d. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars. (DOK 2)	**DOK 2 I Can…** • Interpret statements of inequality as statements about relative position of two numbers on a number line diagram. • Write, interpret, and explain statements of order for rational numbers in real-world contexts Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation • Distinguish comparisons of absolute value from statements about order and apply to real world contexts
6.NS.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. (DOK 2)	**DOK 1 I Can…** • Calculate absolute value. Graph points in all four quadrants of the coordinate plane. **DOK 2 I Can…** • Solve real-world problems by graphing points in all four quadrants of a coordinate plane. • Given only coordinates, calculate the distances between two points with the same first coordinate or the same second coordinate using absolute value.
6.EE.1 Write and evaluate numerical expressions involving whole-number exponents. (DOK 1)	**DOK 1 I Can…** • Write numerical expressions involving whole number exponents Ex. 34 = 3x3x3x3 • Evaluate numerical expressions involving whole number exponents Ex. 34 = 3x3x3x3 = 81 • Solve order of operation problems that contain exponents Ex. 3 + 22 − (2 + 3) = 2

6.EE.2a Write, read and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as 5 – y (DOK 2)	**DOK 1 I Can…** • Use numbers and variables to represent desired operations **DOK 2 I Can…** • Translating written phrases into algebraic expressions. • Translating algebraic expressions into written phrases.
6.EE.2b Write, read and evaluate expressions in which letters stand for numbers. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms. (DOK 1)	**DOK 1 I Can…** • Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient) • Identify parts of an expression as a single entity, even if not a monomial.
6.EE.2c Write, read and evaluate expressions in which letters stand for numbers. c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in realworld problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas V = s3 and A = 6 s2 to find the volume and surface area of a cube with sides of length s = 1/2. (DOK 1)	**DOK 1 I Can…** • Substitute specific values for variables. • Evaluate algebraic expressions including those that arise from realworld problems. • Apply order of operations when there are no parentheses for expressions that include whole number exponents
6.EE.3 Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce	**DOK 1 I Can…** Generate equivalent expressions using the properties of operations. (e.g. distributive property, associative property, adding like terms with the addition property of equality, etc.) **DOK 2 I Can…**

the equivalent expression 3y. (DOK 2)	Apply the properties of operations to generate equivalent expressions.
6.EE.4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for. (DOK 2)	**DOK 1 I Can…** • Recognize when two expressions are equivalent. **DOK 2 I Can…** • Prove (using various strategies) that two equations are equivalent no matter what number is substituted
6.EE.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. (DOK 1)	**DOK 1 I Can…** • Recognize solving an equation or inequality as a process of answering "which values from a specified set, if any, make the equation or inequality true?" • Know that the solutions of an equation or inequality are the values that make the equation or inequality true. • Use substitution to determine whether a given number in a specified set makes an equation or inequality true
6.EE.6 Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (DOK 2)	**DOK 1 I Can…** • Recognize that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. **DOK 2 I Can…** • Relate variables to a context. • Write expressions when solving a real-world or mathematical problem