



MOHAWK

Local School District

Preparing today's students for tomorrow's challenges

Mohawk Local Schools Grade Math 6

Quarter 3 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:

- Equations and Expressions
- Geometry and Statistics
- Number Systems
- 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.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

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?"

<p>specified set makes an equation or inequality true. (DOK 1)</p>	<ul style="list-style-type: none"> • 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
<p>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)</p>	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> • Recognize that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. <p>DOK 2 I Can...</p> <ul style="list-style-type: none"> • Relate variables to a context. • Write expressions when solving a real-world or mathematical problem
<p>6.EE.7 Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers. (DOK 2)</p>	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> • Define inverse operation. • Know how inverse operations can be used in solving one-variable equations. <p>DOK 2 I Can...</p> <ul style="list-style-type: none"> • Apply rules of the form $x + p = q$ and $px = q$, for cases in which p, q and x are all nonnegative rational numbers, to solve real world and mathematical problems. (There is only one unknown quantity.) • Develop a rule for solving one-step equations using inverse operations with nonnegative rational coefficients. • Solve and write equations for real-world mathematical problems containing one unknown
<p>6.EE.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the</p>	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> • Identify the constraint or condition in a real-world or mathematical problem in order to set up an inequality.

<p>form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams. (DOK 2)</p>	<ul style="list-style-type: none"> Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions. <p>DOK 2 I Can...</p> <ul style="list-style-type: none"> Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Represent solutions to inequalities of the form $x > c$ or $x < c$, with infinitely many solutions, on number line diagrams.
<p>6.EE.9 Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time. (DOK 2)</p>	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> Define independent and dependent variables. Use variables to represent two quantities in a real-world problem that change in relationship to one another. <p>DOK 2 I Can...</p> <ul style="list-style-type: none"> Write an equation to express one quantity (dependent) in terms of the other quantity (independent). Analyze the relationship between the dependent variable and independent variable using tables and graphs. Relate the data in a graph and table to the corresponding equation.
<p>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. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. (DOK 2)</p>	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> 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 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. <p>DOK 2 I Can...</p>

	<ul style="list-style-type: none"> • 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
<p>6.NS.2 Fluently divide multi-digit numbers using the standard algorithm. (DOK 1)</p>	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> • Fluently divide multi-digit numbers using the standard algorithm with speed and accuracy.
<p>6.NS.3 Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. (DOK 1)</p>	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> • Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation with speed and accuracy.
<p>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)</p>	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> • Calculate absolute value. Graph points in all four quadrants of the coordinate plane. <p>DOK 2 I Can...</p> <ul style="list-style-type: none"> • 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.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. (DOK 2)	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> Recognize and know how to compose and decompose polygons into triangles and rectangles. <p>DOK 2 I Can...</p> <ul style="list-style-type: none"> Compare the area of a triangle to the area of the composed rectangle. (Decomposition addressed in previous grade.) Apply the techniques of composing and/or decomposing to find the area of triangles, special quadrilaterals and polygons to solve mathematical and real world problems. Discuss, develop and justify formulas for triangles and parallelograms (6th grade introduction)
6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V=lwh$ and $V=Bh$ to find the volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. (DOK 3)	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> Know how to calculate the volume of a right rectangular prism. <p>DOK 2 I Can....</p> <ul style="list-style-type: none"> Apply volume formulas for right rectangular prisms to solve realworld and mathematical problems involving rectangular prisms with fractional edge lengths. <p>DOK 3 I Can...</p> <ul style="list-style-type: none"> Model the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths.
6.G.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the	<p>DOK 1 I Can...</p> <ul style="list-style-type: none"> Draw polygons in the coordinate plane.

length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. (DOK 2)

- Use coordinates (with the same x-coordinate or the same y-coordinate) to find the length of a side of a polygon

DOK 2 I Can...

- Apply the technique of using coordinates to find the length of a side of a polygon drawn in the coordinate plane to solve real-world and mathematical problems.