Mohawk Local Schools Grade 8 Math

Quarter 1 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:

- Number System
- Expressions and Equations

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……."
8.NS.1 Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers, show that the decimal	(DOK 1) I can: • Define irrational numbers. • Show that the decimal expansion of rational numbers repeats

expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. (DOK 1)	eventually. • Convert a decimal expansion which repeats eventually into a rational number. • Show informally that every number has a decimal expansion.
8.NS.2 Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., 2 π). (DOK 2)	(DOK 1) I can: • Approximate irrational numbers as rational numbers. • Approximately locate irrational numbers on a number line. • Estimate the value of expressions involving irrational numbers using rational approximations. (For example, by truncating the decimal expansion of 2 , show that 2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.) (DOK 2) I can: • Compare the size of irrational numbers using rational approximations.
8.EE.1 Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, 3^2 x 3-5 = 3-3 = 1/33 = 1/27 (DOK 1)	(DOK 1) I can: • Explain the properties of integer exponents to generate equivalent numerical expressions. For example, 3^2 x 3-5 = 3-3 = 1/33 = 1/27. • Apply the properties of integer exponents to produce equivalent numerical expressions.
8.EE.2 Use square root and cube root symbols to represent solutions to equations of the form x2 = p and x3 = p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that the square root of 2 is irrational. (DOK 1)	(DOK 1) I can: • Use square root and cube root symbols to represent solutions to equations of the form x2 = p and x3 = p, where p is a positive rational number. • Evaluate square roots of small perfect squares. Evaluate cube roots of small perfect cubes. • Explain why the square root of 2 is irrational.
8.EE.3 Use numbers expressed in the form of a single digit times an integer power of 10 to	(DOK 1) I can:

estimate very large or very small quantities, and to express how many times as much one is than the other. (DOK 2)	• Express numbers as a single digit times an integer power of 10. • Use scientific notation to estimate very large and/or very small quantities. (DOK 2) I can: • Compare quantities to express how much larger one is compared to the other.
8.EE.4 Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology. (DOK 2)	(DOK 1) I can: • Perform operations using numbers expressed in scientific notations. • Use scientific notation to express very large and very small quantities. (DOK 2) I can: • Interpret scientific notation that has been generated by technology. • Choose appropriate units of measure when using scientific notation.
8.EE.5 Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. (DOK 2)	(DOK 1) I can: • Graph proportional relationships. (DOK 2) I can: • Compare two different proportional relationships represented in different ways. (For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.) • Interpret the unit rate of proportional relationships as the slope of the graph.
8.EE.6 Use similar triangles to explain why the	(DOK 1)

slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y=mx for a line through the origin and the equation y=mx+b for a line intercepting the vertical axis at b. (DOK 2)	I can: • Identify characteristics of similar triangles. • Find the slope of a line. • Determine the y-intercept of a line. (DOK 2) I can: • Analyze patterns for points on a line through the origin. • Derive an equation of the form y = mx for a line through the origin. • Analyze patterns for points on a line that do not pass through or include the origin. • Derive an equation of the form y=mx + b for a line intercepting the vertical axis at b (the y-intercept). • Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane.