GMS Curriculum Map
Math
Grade 8

Unit Title	Number System	Expressions and Equations	Functions	Geometry	Statistics and Probability
Unit Overview	Students are introduced to this unit by investigating the properties that determine whether a number is rational or irrational. Additionally, students work individually and in small groups to investigate how to approximate irrational square roots and locate them on a number line diagram. This concept will be further developed in our geometry unit following Pythagorean theorem.	In this unit students will be expanding their basic knowledge of positive integer exponents as well as discover the basic rules of exponents. Student will then further develop their skills through performing operations with both large and small numbers written in scientific notation. Throughout the unit students will demonstrate their ability to perform these operations through analysis and investigation of real world statistics. The unit culminates with students applying concepts learned into a final performance task where they take on the role of marketing analysts who will research market trends, analyze the data and develop and defend their marketing proposals.	In this unit students extend what they already know about unit rate to understand the relationship between proportional relationships and linear equations and their graphs. Students will apply previously acquired skills, with respect to order of operations and properties of equality to transcribe and solve equations in one variable and two variables. They learn to interpret the equation, y=mx+b, as defining a linear function whose graph is a straight line. Students compare linear functions and their graphs to solve real-world and mathematical problems. Finally, students analyze and solve pairs of simultaneous linear equations both graphically and algebraically.	In this unit students will be introduced to motion geometry including translations, reflections, rotations and dilation on a coordinate plane to define and prove congruence and similarity. Additionally, students will be able to explain and prove the Pythagorean Theorem and its converse, as well as apply the theorems to determine unknown side lengths in right triangles in mathematical and real world problems. Also in this unit, students will develop and use informal arguments to justify angle measurements created when parallel lines are cut by a transversal. Finally, students will know and apply the formulas for the volume of cylinders, cones and spheres.	In this unit students will expand on their knowledge of functions to model through trendlines the possible relationships of bivariate data. To accomplish this students will both construct and interpret scatter plots and two way tables.

Duration	10 Days	25 Days	50 Days	65 Days	30 Days
Priority Standards	8.NS.1 8.NS.2 8.EE.2	8.EE.1 8.EE.3 8.EE.4 8.EE.5 8.EE.6	8.EE.7 8.EE.8 8.F.1 8.F.2 8.F.3 8.F.4 8.F.5	8.G.A.1 8.G.2 8.G.3 8.G.4 8.G.5 8.G.6 8.G.7 8.G.8 8.G.9	8.SP.A.1. 8.SP.A.2 8.SP.A.3 8.SP.A.4
Essential Questions	1. Why do we need to know the difference between a rational and irrational number? 2. **How are rational and irrational numbers used to solve real world problems?**	1. Why would you want to use scientific notation to compare very large or very small numbers? 2. **How do integer exponents help us make sense of the world around us?**	1. In what scenarios would you want to represent a real world functional relationship with a graph? 2. How do you determine if a real world scenario represents a function? 3. **How do you use patterns to understand mathematics and model situations?**	1. How and why would you apply the Pythagorean Theorem ? 2. When is the volume of a three dimensional figure applicable in the real world? 3. **How do we use geometry every day?**	1. In what real life activities would you apply statistics? 2. **Why is data collected and analyzed?**
Instructional Strategies	• Videos/note taking • Notebook lessons/Summarizing and note taking • Stations • Quizlet • Cooperative learning opportunities • Think/pair/share • Non-linguistic representations	• Videos/viewing, note taking • Notebook Lessons/Summarizing and notetaking • Research • Stations • Quizlet • Cooperative learning opportunities • Think/pair/share • Non-linguistic representations	• Videos/viewing,note taking • Notebook lessons/Summarizing and notetaking • Kahoot • Stations • Investigation • Quizlet • Research • Cooperative learning opportunities	• Videos/viewing,note taking • Notebook lessons/Summarizing and notetaking • Kahoot • Stations • Investigation Quizlet • Cooperative learning opportunities • Think/pair/share	• Videos/viewing,note taking • Notebook lessons/summarizing and notetaking • Kahoot • Stations • Investigation • Quizlet • Research • Cooperative learning opportunities • Think/pair/share

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	• Gradual release of responsibility model	• Gradual release of responsibility model	• Think/pair/share • Non-linguistic representations • Gradual release of responsibility model	• Non-linguistic representations • Gradual release of responsibility model	• Non-linguistic representations • Gradual release of responsibility model
Key Resources/ Texts	Mathematics Common Core Performance Coach by Triumph Learning OnCore Mathematics Middle School Grade 8 by Houghton Mifflin Harcourt Math Core Skills Grade 8 by Houghton Mifflin Harcourt Engage NY NCTM Illuminations Teacher Created Resources Google Docs Google Classroom for	Mathematics Common Core Performance Coach by Triumph Learning OnCore Mathematics Middle School Grade 8 by Houghton Mifflin Harcourt Math Core Skills Grade 8 by Houghton Mifflin Harcourt Mathematics Station Activities for Common Core State Standards by Walch Education Common Core Math Activities Hands-On-Math Labs by Carson Dellosa Publishing Co. Teacher Created Resources Springboard Mathematics with Meaning Middle School Mathematics II by CollegeBoard NCTM Illuminations Google Docs Google Classroom for	Mathematics Common Core Performance Coach by Triumph Learning Mathematics Station Activities for Common Core State Standards by Walch Education NCTM Illuminations Teacher Created Resources Google Docs Google Classroom for Kahoot	Mathematics Common Core Performance Coach by Triumph Learning OnCore Mathematics Middle School Grade 8 by Houghton Mifflin Harcourt Math Core Skills Grade 8 by Houghton Mifflin Harcourt Mathematics Station Activities for Common Core State Standards by Walch Education Common Core Math Activities Hands-On-Math Labs by Carson Dellosa Publishing Co. Teacher Created Resources NCTM Illuminations Google Docs Google Classroom Kahoot	NCTM Illuminations Teacher Created Resources Google Docs Google Classroom Kahoot

Assessments	Quiz/Tests (Teacher Created) Quizlet (formative)	Quiz/Tests (Teacher Created) Quizlet (formative)	Quiz/Tests (Teacher Created) Quizlet (formative)	Quiz/Tests (Teacher Created) Quizlet (formative) Kahoot	Quiz/Tests (Teacher Created) Quizlet (formative)
Performance Tasks	Melia's Vegetable Garden Fraction of a Whole	Strange but True If the World Were 100 People Marketing Madness Living On Your Own	High Speed Train Company Systems of Equations Research Project	Pythagorean Theorem Proof Pennsylvania Dutch Hex Signs Dilation Project Butterfly Task Tessellation	Realtor Performance Task
Writing	Performance tasks require students to write their explanations and justifications for their answers in paragraph form, using sequence words, and math vocabulary.	Performance tasks require students to write their explanations and justifications for their answers in paragraph form, using sequence words, and math vocabulary.	Performance tasks require students to write their explanations and justifications for their answers in paragraph form, using sequence words, and math vocabulary.	Performance tasks require students to write their explanations and justifications for their answers in paragraph form, using sequence words, and math vocabulary.	Performance tasks require students to write their explanations and justifications for their answers in paragraph form, using sequence words, and math vocabulary.