Marietta City Schools

2023–2024 District Unit Planner

Honors Grade 6 Mathematics

Unit title	UNIT 5: Exploring Real-life Phenomena through One-Step Equations and Inequalities	**MYP year**	*1*	**Unit duration (hrs)**	*20 hours*

Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): ***What will students learn?***

GA DoE Standards

Standards

6.PAR.7: Write and solve one-step equations and inequalities as mathematical models to explain authentic, realistic situations.

6.MP: Display perseverance and patience in problem-solving. Demonstrate skills and strategies needed to succeed in mathematics, including critical thinking, reasoning, and effective collaboration and expression. Seek help and apply feedback. Set and monitor goals.

MCS.Gifted.S2 Students will develop and utilize creative thinking through a variety of products and problem solving.

MCS.Gifted.S3B. Develop critical thinking, inductive and deductive reasoning to analyze and evaluate logical reasoning within a variety of problems and dilemmas.

MCS.Gifted.S3C Use a variety of strategies for solving authentic, complex, real world problems through evaluative thinking and the engineering design processes.

MCS.Gifted.S4B Recognize and examine the value of others strengths, thoughts, ideas, and feelings during collaboration.

MCS.Gifted.S4D Respectfully collaborate and effectively communicate exchanges of constructive/critical feedback.

MCS.Gifted.S6 Students will become self-directed, independent learners.

6.PAR.7: Write and solve one-step equations and inequalities as mathematical models to explain authentic, realistic situations.			
Expectations		**Evidence of Student Learning** **(not all inclusive; see Grade Level Overview for more details)**	
6.PAR.7.1	Solve one-step equations and inequalities involving variables when values for the variables are given. Determine whether an equation and inequality involving a variable is true or false for a given value of the variable.	***Strategies and Methods*** • Students should be able to use algebraic reasoning to solve an equation as a process of answering an authentic question and explain their reasoning. • When solving an equation or inequality as a process of answering a question, students should be able to explain why specific values from a specified set, if any, make the equation or inequality true. • Students should use substitution to determine whether a given number in a specified set makes an equation or inequality true.	
6.PAR.7.2	Write one-step equations and inequalities to represent and solve problems; explain that a variable can represent an unknown number or any number in a specified set.	***Age/Developmentally Appropriate*** • Students should be able to represent equations involving positive variables and rational numbers. • Students should have opportunities to solve relevant, mathematical problems.	***Strategies and Methods*** • Students should have an opportunity to solve problem situations with variables in all positions. • Students should be able to explain that a variable can represent an unknown number, or depending on the purpose at hand, any number in a specified set.
6.PAR.7.3	Solve problems by writing and solving equations of the form $x \pm p = q$, $px = q$ and $\frac{x}{p} = q$ for cases in which p, q and x are all nonnegative rational numbers.	***Strategies and Methods*** • Students should have opportunities to use concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction and multiplication and division when solving one-step equations. • Students should be able to solve equations presented in applicable, mathematical problems involving positive rational numbers using number sense, properties of arithmetic and the idea of maintaining equality on both sides of the equation. • Students should be able to interpret a solution in the original context and assess the reasonableness of results.	
6.PAR.7.4	Recognize and generate inequalities of the form $x > c$, $x \geq c$, $x < c$, or $x \leq c$ to explain situations that have infinitely many solutions; represent solutions of such inequalities on a number line.	***Strategies and Methods*** • Students should represent authentic, mathematical situations using inequalities involving variables. • Students should be able to create practical, mathematical situations corresponding to specific inequalities. • This objective includes the use of the symbols: <, >, =, ≤, ≥.	

Vocabulary:

K-12 Mathematics Glossary

Addition Property of Equality	Dependent Variable	Direct Proportion (Direct Variation)	Division Property of Equality	Multiplication Property of Equality	Subtraction Property of Equality
Equation	Independent Variable	Inequality	Inverse Operation	Proportion	Solution
Substitution	Term	Variable			

Key concept	Related concept(s)	Global context
Logic A method of reasoning and a system of principles used to build arguments and reach conclusions.	Model, pattern, measurement	**Globalization and Sustainability**

Statement of inquiry

Equations and inequalities communicate real world scenarios through symbols, numbers, and algebraic thinking.

Inquiry questions

Factual— How do you identify equations and variables? How do we use substitution to find solutions to equations? How do you write one variable addition and subtraction equations?

Conceptual— How are word expressions that are translated into algebraic expressions communicating the same information? What strategies help me to understand and represent real life situations mathematically?

Debatable— Why do solutions to real world algebraic problems not always what they seem?

MYP Objectives	Assessment Tasks	
*What specific MYP **objectives** will be addressed during this*	***Relationship** between summative assessment task(s) and statement of inquiry:*	*List of common formative and summative assessments.*

unit?		
Criteria B: Investigating Patterns	Assessments will expect students to communicate a real world situation in symbolic format using symbols and numbers. They will have to interpret statements concerning various situations algebraically and communicate it in written format.	**Formative Assessment(s):** MYP B: Build a Dog **Summative Assessment(s):** Mid-Topic Assessment Unit 5 One Step Equations and Inequalities Test
Approaches to learning (ATL)		
Category: Social **Cluster:** Collaboration Skills **Skill Indicator:** Give and receive meaningful feedback. **Category:** Thinking **Cluster:** Critical Thinking, Creative Thinking & Transfer **Skill Indicator:** Use models and simulations to explore complex systems and issues		

Learning Experiences Add additional rows below as needed.		
Objective or Content	**Learning Experiences**	**Personalized Learning and Differentiation**
6.PAR.7.2 Write one-step equations and inequalities to represent and solve problems; explain that a variable can represent an unknown number or any number in a specified set. **6.PAR.7.3** Solve problems by writing and solving equations of the form x + p = q, px = q and x p = q for cases in which p, q and x are all nonnegative rational numbers.	**Interpreting Equations** In this learning plan, students will make sense of equations that express the relationship between two real-world variables, as well as explore the meaning of variables in contextualized equations. Teachers will be able to uncover and address misconceptions concerning the meaning of variables in equations.	Students will be grouped with others to support their understanding. For groups that are struggling, the teacher can be an active participant, modeling the thought process behind the activity. The lessons are scaffolded to allow students to move from beginner level understanding to more advanced levels.
Content Resources		
Georgia Standards Lessons and Resources website Savvas Topic 4 https://www.Mathigon.org/polypad Savvas Math Tools - Input-output machine https://media.pk12ls.com/curriculum/math/enVision6-8/enV6-8_html5tools_launch/iomachine/index.html?mode=0 Savvas Matn Tools - Pan Balance https://media.pk12ls.com/curriculum/math/enVision6-8/enV6-8_html5tools_launch/panbalance/index.html		