



**Marietta City Schools**

**District Unit Planner**

Everything on the unit planner must be included on the unit curriculum approval statement.

Grade 6 Mathematics

<b>Unit title</b>	Unit 4: One Step Equations and Inequalities	<b>MYP year</b>	1	<b>Unit duration (hrs)</b>	20 Hours
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**Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): *What will students learn?***

**GSE Standards**

**Standards**

**MGSE6.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.

**MGSE6.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.

**MGSE6.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.

**MGSE6.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 form  $x > c$  or  $x < c$  have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

**MGSE6.EE.9** Use variables to represent two quantities in a real-world problem that change in relationship to one another.

a. Write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable.

b. 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.*

**MGSE6.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.

**MGSE6.RP.3a** 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.

**MGSE6.RP.3b** Solve unit rate problems including those involving unit pricing and constant speed.

**MGSE6.RP.3c** Find a percent of a quantity as a rate per 100 (e.g. 30% of a quantity means 30/100 times the quantity); given a percent, solve problems involving finding the whole given a part and the part given the whole.

**MGSE6.RP.3d** Given a conversion factor, use ratio reasoning to convert measurement units within one system of measurement and between two systems of measurements (customary and metric); manipulate and transform units appropriately when multiplying or dividing quantities. *For example, given  $1 \text{ in.} = 2.54 \text{ cm}$ , how many centimeters are in 6 inches?*

**Concepts/Skills to be Mastered by Students**

- Represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic rules.
- Relate and compare different forms of representation for a relationship.
- Use values from specified sets to make an equation or inequality true.
- Develop an initial conceptual understanding of different uses of variables.
- Graphs can be used to represent all of the possible solutions to a given situation.
- Many problems encountered in everyday life can be solved using proportions, equations or inequalities.
- Students will solve one-step equations.

Key concept	Related concept(s)	Global context
Logic	Pattern Model Measurement	Globalization and Sustainability
<b>Statement of inquiry</b>		
Expressions, equations, and inequalities, communicate real world scenarios through symbols, numbers, and algebraic thinking.		
<b>Inquiry questions</b>		
<p><b>Factual</b>— How do you identify equations and variables? How do I use substitution to find solutions to equations? How do you write one variable addition and subtraction equations?</p> <p><b>Conceptual</b>— 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?</p> <p><b>Debatable</b>— Why do solutions to real world algebraic problems not always what they seem?</p>		
MYP Objectives	Assessment Tasks	
<p><i>What specific MYP <b>objectives</b> will be addressed during this unit?</i></p>	<p><b>Relationship</b> between summative assessment task(s) and statement of inquiry:</p>	<p><i>List of common formative and summative assessments.</i></p>

<p>Criterion B: Investigating Patterns</p>		<p><b>Formative Assessment(s):</b></p> <p>Unit 4 Mid-unit Checkpoint</p> <p><b>Summative Assessment(s):</b></p> <p>MYP- Illustrative Mathematics Task – Google Document</p> <p>Unit 4 One Step Equations and Inequalities Test</p>
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**Approaches to learning (ATL)**

Give and receive meaningful feedback  
 Use models and simulations to explore complex systems and issues  
**Category:**  
**Cluster:**  
**Skill Indicator:**

**Learning Experiences**  
 Add additional rows below as needed.

Objective or Content	Learning Experiences	Personalized Learning and Differentiation
<p><b>MGSE6.EE.5</b> 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.  <b>MGSE6.EE.6</b>  <b>MGSE6.EE.7</b></p>	<p>Set It Up            GaDoe Frameworks</p>	<p>Students can work in groups to discuss the possibilities in the task, and how to set up equations. Activity can be scaffolded in order for students to access it.</p>

<p><b>MGSE6.EE.9</b> Use variables to represent two quantities in a real-world problem that change in relationship to one another.</p> <p>a. Write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable.</p> <p>b. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. <i>For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation <math>d=65t</math> to represent the relationship between distance and time.</i></p>	<p>Chocolate Bars Task Illustrative Tasks</p>	<p>Teachers can provide scaffolded questioning to groups needing more support. Tables can be printed and students can work together to complete the task. Manipulatives can be given to support.</p>
<b>Content Resources</b>		
<p>GaDOE Frameworks Illustrative Mathematics Savvas</p>		