



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 2: Rational Explorations: Numbers and Their Opposites (GaDOE U7)	<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.NS.5** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, debits/credits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

**MGSE6.NS.6** Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

**MGSE6.NS.6a** Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., , and that 0 is its own opposite.

**MGSE6.NS.6b** Understand signs of number in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

**MGSE6.NS.6c** Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

**MGSE6.NS.7** Understand ordering and absolute value of rational numbers.

**MGSE6NS.7a** Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.

**MGSE6.NS.7b** Write, interpret, and explain statements of order for rational numbers in real-world contexts.

**MGSE6.NS.7c** Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.

**MGSE6.NS.7d** Distinguish comparisons of absolute value from statements about order.

**MGSE6.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.

**MGSE6.G.3.** Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply those techniques in the context of solving real-world mathematical problems.

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

- Understand that positive and negative numbers are used together to describe quantities having opposite directions or values.
- Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
- Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line.
- Recognize that the opposite of the opposite of a number is the number itself.
- Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane.
- Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.
- Find and position integers and other rational numbers on a horizontal or vertical number line diagram. ‘
- Find and position pairs of integers and other rational numbers on a coordinate plane.
- Understand ordering and absolute value of rational numbers.
- Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.
- Write, interpret, and explain statements of order for rational numbers in real-world contexts.
- Understand the absolute value of a rational number as its distance from 0 on the number line
- Interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.
- Distinguish comparisons of absolute value from statements about order.
- Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane.

**Key concept**

**Related concept(s)**

**Global context**

Relationships	Equalvalend Generalization	Identities and Relationships
<b>Statement of inquiry</b>		
Modeling using a logical process helps us to understand the world		
<b>Inquiry questions</b>		
<p><b>Factual</b>—How are number lines and the coordinate plan different? What are opposites? What is absolute value? Where do I place positive and negative rational numbers on the number line? What are opposites, and how are opposites shown on a number line?</p> <p><b>Conceptual</b>—When are negative numbers used and why are they important? Why is it useful for me to know the absolute value of a number? When is graphing on the coordinate plane helpful? How do I use positive and negative numbers in everyday life? How do I use positive and negative numbers to represent quantities in real-world contexts? How do statements of inequality help me place numbers on a number line? How can I use coordinates to find the distances between points? How can I use number lines to find the distances between points? How can I use absolute value to find the lengths of the sides of polygons on the coordinate plane? What do reflections and symmetry have in common? How is absolute value and order different?</p> <p><b>Debatable</b>—Does a negative number always represent a negative situation?</p>		
MYP Objectives	Assessment Tasks	
<i>What specific MYP <b>objectives</b> will be addressed during this unit?</i>	<i><b>Relationship</b> between summative assessment task(s) and statement of inquiry:</i>	
<p>Criterion C: Communicating</p> <p>Criterion D: Applying Mathematics in Real-life Contexts</p>	<p>Students will understand and recognize positive and negative numbers on a number line and coordinate grid. Students will understand statements of inequality, absolute value, and real world mathematical problems.</p>	<p><b><u>Formative Assessment(s):</u></b></p> <p>Unit 7 Mid-unit Checkpoint</p> <p><b><u>Summative Assessment(s):</u></b></p> <p>MYP- Latin America Tour</p>

**Approaches to learning (ATL)**

Give and receive meaningful feedback  
 Organize and depict information logically  
**Category:**  
**Cluster:**  
**Skill Indicator:**

**Learning Experiences**

Add additional rows below as needed.

Objective or Content	Learning Experiences	Personalized Learning and Differentiation
<p><b>MGSE6.NS.5</b> Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, debits/credits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</p> <p><b>MGSE6.NS.6</b> Understand a rational number as a point on the number line.</p> <p><b>MGSE6.NS.7</b> Understand ordering and absolute value of rational numbers.</p>	<p>Mid Topic Performance Task pg. 84            Savvas Resource</p>	<p>Teachers can provide scaffolded questioning to groups needing more support. And gradually release students to complete the task. Number lines and grid paper can be used to help students find rational numbers.</p>

<p><b>MGSE6.NS.7</b> Understand ordering and absolute value of rational numbers.</p> <p><b>MGSE6.NS.7a</b> Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.</p> <p><b>MGSE6.NS.7b</b> Write, interpret, and explain statements of order for rational numbers in real-world contexts. MGSE6.NS.7c Under</p>	<p>Ordering Rational Numbers on a number line</p>	<p>Teachers can provide number lines and grid paper can be used to help students find rational numbers.</p>
<b>Content Resources</b>		
<p>Savvas</p> <p>GaDoe Frameworks</p>		