



Marietta City Schools  
District Unit Planner

*Fifth Grade*

**Unit Name** *Unit 7: Exploring Geometry and Coordinate Plane*

**Unit duration (Days)**

*4-5 Weeks*

[GA K-12 Standards](#)

*In this unit, students are introduced to the structure of the coordinate grid, and the convention and notation of coordinates to name points. This unit also offers students an opportunity to build on their understanding of shapes by classifying polygons based on their properties. In their work with patterns, students generate two different numerical patterns, and identify relationships between the corresponding terms within those patterns.*

**5.PAR.6: Solve real-life problems by creating and analyzing numerical patterns using the given rule(s).**

- **5.PAR.6.1** Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms by completing a table.
- **5.PAR.6.2** Represent problems by plotting ordered pairs and explain coordinate values of points in the first quadrant of the coordinate plane.

**5.GSR.8:** Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms.

- **5.GSR.8.1** Classify, compare, and contrast polygons based on properties.
- **5.GSR.8.2** Determine, through exploration and investigation, that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

**5.MP.1-8 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.** *(It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.)*

- **5.MP.1** Make sense of problems and persevere in solving them.
- **5.MP.2** Reason abstractly and quantitatively.
- **5.MP.3** Construct viable arguments and critique the reasoning of others.
- **5.MP.4** Model with mathematics.
- **5.MP.5** Use appropriate tools strategically.
- **5.MP.6** Attend to precision.
- **5.MP.7** Look for and make use of structure.
- **5.MP.8** Look for and express regularity in repeated reasoning.

*The [Framework for Statistical Reasoning](#) and the [Mathematical Modeling Framework](#) should be taught throughout the units. The [K-12 Mathematical Practices](#) should be evidenced at some point throughout each unit depending on the tasks that are explored. It is important to note that MPs 1, 3 and 6 should support the learning in every lesson.*

**Essential Questions/ I Can Statements**

- (5.PAR.6.1) I can generate two numerical patterns using given rules.
- (5.PAR.6.1) I can identify relationships between corresponding terms by completing a table.
- (5.PAR.6.2) I can plot ordered pairs on a coordinate plane in the first quadrant.
- (5.PAR.6.2) I can explain coordinate values.
- (5.GSR.8.1) I can classify polygons based on their properties.
- (5.GSR.8.2) I can explain how attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.

**Tier II Vocabulary Words-** High Frequency Multiple Meaning

**Tier III Vocabulary Words-** Subject/ Content Related Words

Attribute, polygon, category, sub-category, properties, classify

Axes, coordinate, Coordinate Plane, Cartesian Plane, first quadrant, ordered pair, origin, x-coordinate, y-coordinate  
[K-12 Mathematics Glossary](#)

**Assessments**

**Formative Assessment(s):**

- 5.PAR.6
- 5.GSR.8
- Unit 7 Summative Assessment

**Savvas Topic Performance Task** - Students will use a real-life scenario to map a dinosaur bone dig site.  
 TE pp. 587-588

***It is the responsibility of each schools' grade level PLC to identify appropriate instructional lessons and resources, based on data and student needs, using the suggested pacing duration.** The following learning tasks have been vetted to align to the standards included in this unit. The GA Dept. of Education strongly recommends that any additional tasks, resources, and/or assessments used for instruction should be vetted using the [Quality Assurance Rubric](#), to ensure alignment to the state standards.*

Objective or Content	Learning Experiences		Differentiation Considerations
<p><b>5.PAR.6.1</b> Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms</p>	<p align="center"><b><u>GA DOE Learning Plans</u></b></p> <p><b><u>Generating Patterns:</u></b>  <i>In this learning plan, students will practice interpreting relationships between patterns generated from two different given rules. Students will write an expression from the relationship they see to be able to determine the nth term for a pattern. (1-2 days)</i></p>	<p align="center"><b><u>MCS Curriculum Resources</u></b></p> <p><b><u>Savvas Envision Topic 15: Algebra: Analyze Patterns and Relationships</u></b>  <i>Students generate and evaluate numeric patterns. They identify a relationship between two patterns and graph the relationship on a coordinate plane.</i></p> <ul style="list-style-type: none"> <li>● Lesson 15-1: Students Analyze Numerical Patterns.</li> </ul>	<p><a href="#">Counting Pills:</a> Use graphs, tables, and rules to describe linear relationships found in number and spatial patterns.</p> <p><a href="#">Magic Squares:</a> Students arrange numbers to make the magic square.</p>

<p>by completing a table.</p>	<ul style="list-style-type: none"> <li>• <a href="#">Teacher Guidance</a></li> <li>• <a href="#">Student Reproducibles</a></li> </ul>	<ul style="list-style-type: none"> <li>• Lesson 15-2: Students use tables to identify relationships between patterns.</li> <li>• Lesson 15-3: Students analyze patterns, and graph ordered pairs generated from number sequences.</li> <li>• Lesson 15-4: Students make sense of problems and persevere in solving them.</li> </ul> <p><b><u>MIP Module 14: Understanding the Coordinate System</u></b>  <i>The Key Ideas in this module include locating and graphing points in the first quadrant, solving problems involving the coordinate system, forming ordered pairs, graphing them, and identifying relationships between them.</i></p> <ul style="list-style-type: none"> <li>• Discovering Relationships: Students plot ordered pairs from two tables on a coordinate grid and look for relationships between the pairs. Pp 247-276</li> </ul>	
<p><b>5.PAR.6.2</b> Represent problems by plotting ordered pairs and explain coordinate values of points in the first quadrant of the coordinate plane.</p>	<p><b><u>Following Cardinal Directions:</u></b>  <i>In this learning plan, students will develop their understanding of plotting coordinates on the coordinate plane, specifically in quadrant I. Students will develop an understanding that the coordinates are written as ordered pairs with the x-value written as the first term in the parentheses and the y-value written as the second term. (2-3 days)</i></p> <ul style="list-style-type: none"> <li>• <a href="#">Teacher Guidance</a></li> <li>• <a href="#">Student Reproducibles</a></li> </ul> <p><b><u>Growing Patterns:</u></b>  <i>In this learning plan, students will use their knowledge of growing patterns to identify rules used to generate those patterns. They will create x/y tables (input/output) tables and graph the ordered pairs on the coordinate plane. (1-2 days)</i></p> <ul style="list-style-type: none"> <li>• <a href="#">Teacher Guidance</a></li> <li>• <a href="#">Student Reproducibles</a></li> </ul> <p><b><u>Landmarks and Polygons on a Coordinate Plane:</u></b></p>	<p><b><u>Savvas Envision Topic 14: Graphing Points on the Coordinate Plane.</u></b>  <i>Students develop an understanding of the coordinate system. They graph ordered pairs in the first quadrant of the coordinate plane to solve problems.</i></p> <ul style="list-style-type: none"> <li>• Lesson 14-1: Students locate points on a Coordinate Grid.</li> <li>• Lesson 14-2: Students graph points on a coordinate grid.</li> <li>• Lesson 14-3: Students solve real-world problems by graphing points.</li> <li>• Lesson 14-4: Students use reasoning to solve problems by making sense of quantities and relationships in the situation</li> </ul> <p><b><u>MIP Module 14: Understanding the Coordinate System</u></b>  <i>The Key Ideas in this module include locating and graphing points in the first quadrant, solving problems involving the coordinate system, forming ordered pairs, graphing them, and identifying relationships between them.</i></p> <ul style="list-style-type: none"> <li>• A Fly on the Ceiling pp. 265-267</li> </ul>	<p><b><u>Treasure Trove:</u></b> Use a coordinate system or the language of direction and distance to specify locations and describe paths.</p> <p><b><u>Street Maps:</u></b> Use a coordinate system to calculate distance on a map.</p>

	<p><i>In this learning plan, students will continue exploring plotting points in quadrant I on the coordinate plane. Using the coordinate plane, students will compare and create polygons based on their attributes. (1-2 days)</i></p> <ul style="list-style-type: none"> <li>• <a href="#">Teacher Guidance</a></li> <li>• <a href="#">Student Reproducibles</a></li> </ul> <p><b><u>Points All Around Me:</u></b>  <i>In this learning plan students learn that identifying points on a coordinate grid is important in understanding how the coordinate system works. (1-2 days)</i></p> <ul style="list-style-type: none"> <li>• <a href="#">Teacher Guidance</a></li> <li>• <a href="#">Student Reproducibles</a></li> </ul> <p><b><u>Better Buy:</u></b>  <i>In this learning plan, students will use their knowledge of generating patterns from two given rules and plotting coordinates on the coordinate plane to solve problems.</i></p> <ul style="list-style-type: none"> <li>• <a href="#">Teacher Guidance</a></li> <li>• <a href="#">Student Reproducibles</a></li> <li>• <a href="#">Blackline Masters</a></li> </ul>	<ul style="list-style-type: none"> <li>• Exploring Data pp. 274-276</li> </ul>	
<p><b>5.GSR.8.1</b> Classify, compare, and contrast polygons based on properties.</p>	<p><b><u>Classifying Shapes:</u></b>  <i>In this learning plan, students have the opportunity to reason about the characteristics of shapes. (1-2 days)</i></p> <ul style="list-style-type: none"> <li>• <a href="#">Teacher Guidance</a></li> <li>• <a href="#">Student Reproducibles</a></li> <li>• <a href="#">Blackline Masters</a></li> </ul>	<p><b><u>Savvas Envision Topic 16: Classify 2-Dimensional Figures</u></b>  <i>Students classify triangles and quadrilaterals by their properties. They learn that properties of a two-dimensional shape also belong to all subcategories of that shape.</i></p> <ul style="list-style-type: none"> <li>• Lesson 16-1: Students will classify triangles by their angles and sides.</li> <li>• Lesson 16-2: Students will classify quadrilaterals by their properties.</li> </ul> <p><b><u>MIP Module 15: Classifying Two-Dimensional Figures</u></b>  <i>The Key Ideas in this module include understanding that all attributes that belong to a category of two-dimensional shapes also belong to all subcategories of that category (e.g., all rectangles have four right angles and squares are rectangles,</i></p>	<p><a href="#">Parking Cars:</a> Arrange a layout for a parking lot using shapes.</p> <p><a href="#">Polygon puzzles:</a> Design a puzzle using regular and irregular polygons.</p>

		so they must have four right angles) <ul style="list-style-type: none"> <li>Classifying Quadrilaterals pp. 284-286</li> </ul>	
<p><b>5.GSR.8.2</b> Determine, through exploration and investigation, that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.</p>	<p><b>Savvas Envision Topic 15: Classify 2-Dimensional Figures</b>  <i>Students classify triangles and quadrilaterals by their properties. They learn that properties of a two-dimensional shape also belong to all subcategories of that shape.</i></p> <ul style="list-style-type: none"> <li>Lesson 16-3: Students classify quadrilaterals using a hierarchy.</li> <li>Lesson 16-4: Students construct arguments about geometric figures.</li> </ul> <p><b>MIP Module 15: Classifying Two-Dimensional Figures</b>  <i>The Key Ideas in this module include understanding that all attributes that belong to a category of two-dimensional shapes also belong to all subcategories of that category (e.g., all rectangles have four right angles and squares are rectangles, so they must have four right angles)</i></p> <ul style="list-style-type: none"> <li>Building a Hierarchy pp. 287-289</li> </ul>	<p><a href="#">Perspective on Picasso:</a> Students draw and discuss spheres, cylinders and cones.</p> <p><a href="#">Compass Shapes:</a> Draw a hexagon using a compass and a ruler.</p>	

Content Resources	
<p><b>MCS Links:</b></p> <ul style="list-style-type: none"> <li><a href="#">MCS Math Curriculum Map</a></li> <li><a href="#">MCS Math Instructional Framework</a></li> </ul> <p><b>GA DOE Links:</b></p> <ul style="list-style-type: none"> <li>Access all GADOE Curriculum Resources at the following site: <a href="#">GaDOE Inspire</a>.</li> </ul>	<p><b>Additional Resources:</b></p> <ul style="list-style-type: none"> <li><a href="#">Coordinate Grid Geoboards</a></li> <li><a href="#">Air Traffic Controller</a> - students create paths for airplanes to land</li> <li><a href="#">Shoo-Fly</a>: Students use the coordinate plane to solve real world problems.</li> <li><a href="#">Atlanta Landmarks</a> - students plot different Atlanta Landmarks and analyze their graph.</li> <li>Phyllotaxis STEM Activity: Savvas p. 596B - Students use information about the growth of trees to analyze patterns of a given rule.</li> <li><a href="#">Patterns on the Coordinate Grid</a> - Students solve a variety of different problems analyzing patterns on the coordinate grid.</li> <li><a href="#">First to Arrive</a> - Students determine which vehicle will arrive first based on the speeds traveled.</li> <li><a href="#">Animal Speed</a> - Students graph animal speeds using given information.</li> <li>Honey Bees STEM Activity: Savvas p. 636B - Students construct arguments about geometric figures.</li> <li><a href="#">Property List of Quadrilaterals</a> - Students will become familiar with properties of quadrilaterals.</li> <li><a href="#">Too Many Triangles</a> - Students will classify triangles according to their properties.</li> </ul>