



**Marietta City Schools**  
**2025–2026 District Unit Planner**

*Grade 8 Mathematics*

<b>Unit title</b>	Unit 6: Exploring Geometric Relationships	<b>MYP year</b>	3	<b>Unit duration (hrs)</b>	<i>MMS- (4.5 hours per week) 18 Hours –4 Weeks</i>
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**Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): *What will students learn?***

**GA DoE Standards**

## Standards

**8.GSR.8** Solve geometric problems involving the Pythagorean Theorem and the volume of geometric figures to explain real-life phenomena.

**8.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.

## Concepts/Skills to support mastery of standards

*8.GSR.8.1 - Explain a proof of the Pythagorean Theorem and its Converse*

*8.GSR.8.2 - Apply the Pythagorean Theorem to determine the unknown side lengths in right triangles.*

*8.GSR.8.3 - Apply the Pythagorean Theorem to find the distance between two points.*

*8.GSR.8.4 - Apply the formulas for the volume of Cylinders, Cones, and Spheres.*

## Vocabulary

<u>Altitude of a Triangle</u>	<u>Base (of a Polygon)</u>	<u>Coordinate Plane</u>	<u>Coordinate Point of a Plane</u>	<u>Converse of Pythagorean Theorem</u>	<u>Cube Root</u>
<u>Hypotenuse</u>	<u>Leg of a Triangle</u>	<u>Perfect Squares</u>	<u>Perfect Cubes</u>	<u>Pythagorean Theorem</u>	<u>Pythagorean Triples</u>
<u>Square Root</u>	<u>Right Triangle</u>	<u>Volume</u>	<u>Cone</u>	<u>Cylinder</u>	<u>Sphere</u>
<u>Hemisphere</u>	<u>Diameter</u>	<u>Radius</u>	<u>Pi</u>	<u>Height</u>	<u>Slant Height</u>
<u>Area</u>	<u>Circumference</u>				

Key concept	Related concept(s)	Global context
Relationships	Measurement and Space	Orientation in space and time
<b>Statement of inquiry</b>		
People can explore relationships through measurement.		
<b>Inquiry questions</b>		
<ul style="list-style-type: none"> <li>● <b>Factual</b>— What is the Pythagorean Theorem?</li> <li>● <b>Conceptual</b>— How has the discovery of the Pythagorean Theorem shaped the world in which we live? What does it mean to cube or square a number? Why is the square root of 2 irrational?</li> <li>● <b>Debatable</b>— Can the Pythagorean Theorem be applied to any polygon? Explain</li> </ul>		
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>	<i>List of common formative and summative assessments.</i>
Criterion A: Knowledge and Understanding	Students will explore relationships through measurement.	<p><b><u>Formative Assessment(s):</u></b></p> <p>Unit 6 CFA</p> <p><b><u>Summative Assessment(s):</u></b></p> <p>Uni 6: Geometric Applications of Exponents</p> <p>Unit 6 Retest: Geometric Applications of Exponents</p>

		MYP: Pythagorean Theorem Project - Fencing the Yard
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**Approaches to learning (ATL)**

**Need:** Give and receive meaningful feedback  
**Category:** Research Skills  
**Cluster:** Information literacy  
**Skill Indicator:** Finding, interpreting, judging and creating information

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

Objective or Content	Learning Experiences	Personalized Learning and Differentiation
<p><b><u>8.GSR.8.1</u></b>            Explain a proof of the Pythagorean Theorem and its converse using visual models.</p>	<p><b><u>Pythagorean Theorem with Tiles Discovery Activity</u></b></p> <p><b><u>Brief Description:</u></b>            In this learning plan, students will use a hands-on activity to help derive the formula and proof for the Pythagorean Theorem. The students will discover and explore building a right triangle, defining and identifying the legs and hypotenuse, squaring the sides, and discovering the special relationship that exists in right triangles (Pythagorean Theorem).</p> <p><b><u>Learning Goal:</u></b></p> <ul style="list-style-type: none"> <li>● Discovering the Pythagorean Theorem</li> </ul>	<p>In this learning plan, students will discover and explore the Pythagorean Theorem.</p>
<p><b><u>8.GSR.8.4</u></b>            Apply the formulas for the volume of cones, cylinders, and spheres and use them to solve relevant problems.</p>	<p><b><u>Volume of Cones, Cylinders, and Spheres Discovery Lab</u></b></p> <p><b><u>Brief Description:</u></b>            In this discovery lab, it focuses on the similarities and differences between the volume formulas of cylinders, cones, and spheres. The students will</p>	<p>In this learning plan, students will discover the similarities and differences between the formulas for each shape.</p>

discover the similarities and differences by comparing and contrasting each formula, identifying the parts of the formula that are similar and different through a graphic organizer, calculate the volume of each shape, and then write a conclusion of what they discovered.

**Learning Goal:**

- I can compose and decompose shapes to find the volume of a compound object.

**Content Resources**

[Grade-8-Mathematics-Unit-6-Exploring-Geometric-Relationships](#)

[Savvas Correlation Link](#)