Marietta City Schools

2024–2025 District Unit Planner

Grade 8 Mathematics

Unit title	Unit 6: Exploring Geometric Relationships	**MYP year**	3	**Unit duration (hrs)**	*MMS- (4.5 hours per week)* *18 Hours –4 Weeks*

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

Altitude of a Triangle	**Base (of a Polygon)**	**Coordinate Plane**	**Coordinate Point of a Plane**	**Converse of Pythagorean Theorem**	**Cube Root**
Hypotenuse	**Leg of a Triangle**	**Perfect Squares**	**Perfect Cubes**	**Pythagorean Theorem**	**Pythagorean Triples**
Square Root					

Key concept	Related concept(s)	Global context
Relationships	Measurement and Space	Orientation in space and time

Statement of inquiry

People can explore relationships through measurement.

Inquiry questions

- **Factual—** What is the Pythagorean Theorem?
- **Conceptual—** 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?
- **Debatable—** Can the Pythagorean Theorem be applied to any polygon? Explain

MYP Objectives	Assessment Tasks	
*What specific MYP **objectives** will be addressed during this unit?*	***Relationship** between summative assessment task(s) and statement of inquiry:*	*List of common formative and summative assessments.*
Criterion A: Knowledge and Understanding	Students will explore relationships through measurement.	**Formative Assessment(s):** Unit 6 CFA **Summative Assessment(s):** Uni 6: Geometric Applications of Exponents Unit 6 Retest: Geometric Applications of Exponents

		MYP: Pythagorean Theorem Project - Fencing the Yard

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**
8.GSR.8.1 Explain a proof of the Pythagorean Theorem and its converse using visual models.	**Discovering the Pythagorean Theorem FAL** **Brief Description:** In this learning plan, students will discover and explore the Pythagorean Theorem and its converse through the Discovering the Pythagorean Theorem Formative Assessment Learning plan. Students will use the area of right triangles to deduce the areas of other shapes, use dissection methods for finding areas, organize an investigation systematically and collect data, and deduce a generalizable method for finding lengths and areas (The Pythagorean Theorem). **Learning Goal:** ● Discovering the Pythagorean Theorem ● Understanding the converse of the Pythagorean Theorem	In this learning plan, students will discover and explore the Pythagorean Theorem and its converse.
8.GSR.8: Solve geometric problems involving	**Calculate the Volume of Glasses**	In this learning plan, students will apply volume formulas of cones,

the Pythagorean Theorem and the volume of geometric figures to explain real-life phenomena. **8.GSR.8.2** Apply the Pythagorean Theorem to determine unknown side lengths in right triangles within authentic mathematical problems in two and three dimensions. **8.GSR.8.4** Apply the formulas for the volume of cones, cylinders, and spheres and use them to solve relevant, real-life problems.	**Brief Description:** In this learning plan, students will solve real-world problems involving the volume of compound objects including right cylinders, right circular cones, and spheres. Students will explore the formulas for the shapes, use the Pythagorean Theorem, and use the volume formulas to determine the volume of three glasses. **Learning Goal:** ● I can use geometric and spatial reasoning to solve problems involving the Pythagorean Theorem. ● I can use models and drawings to help solve contextual problems in two- and three dimensions. ● I can compose and decompose shapes to find the volume of a compound object.	cylinders, and spheres to real-world problems.
Content Resources		
Grade-8-Mathematics-Unit-6-Exploring-Geometric-Relationships Savvas Correlation Link		