Marietta City Schools

District Unit Planner

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

Accelerated Grade 7/8 Mathematics

Unit title	*Unit 1: Geometry* *(GaDOE Grade 7 Unit 4)*	**MYP year**	*2*	**Unit duration (hrs)**	*20 Hours*

Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): *What will students learn?*

GSE Standards

Standards

Draw, construct, and describe geometrical figures and describe the relationships between them.

MGSE7.G.2 Explore various geometric shapes with given conditions. Focus on creating triangles from three measures of angles and/or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.

MGSE7.G.3 Describe the two-dimensional figures (cross sections) that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms, right rectangular pyramids, cones, cylinders, and spheres.

Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.

MGSE7.G.4 Given the formulas for the area and circumference of a circle, use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

MGSE7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.

MGSE7.G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Concepts/Skills to be Mastered by Students

- Use freehand, ruler, protractor and technology to draw geometric shapes with give conditions.
- Construct triangles from 3 measures of angles or sides.
- Given conditions, determine what and how many type(s) of triangles are possible to construct.
- Describe the two-dimensional figures that result from slicing three-dimensional figures.
- Identify and describe supplementary, complementary, vertical, and adjacent angles.
- Use understandings of supplementary, complementary, vertical and adjacent angles to write and solve equations.

- Explain (verbally and in writing) the relationships between the angles formed by two intersecting lines.
- Solve mathematical problems involving area, volume and surface area of two- and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
- Solve real-world problems involving area, volume and surface area of two- and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

Vocabulary

- Additive Inverse- Two numbers that have a sum of 0.
- Multiplicative Inverse- The multiplicative inverse of any number is another number that when multiplied by the original number gives the product as one.
- Absolute Value- The absolute value of a number a is the distance between a and zero on a number line. The absolute value of a is written as $|a|$.
- Integers- The set of positive whole numbers, their opposites, and 0.
- Long Division- A method for dividing numbers which breaks the division problem into multiple steps following a sequence.
- Natural Numbers- The counting numbers.
- Negative Numbers- Numbers less than zero.
- Opposite Numbers-Two numbers that are the same distance from 0 on a number line, but in opposite directions.
- Positive Numbers- Numbers greater than zero.
- Rational Numbers- A number that can be written in the form $\frac{a}{b}$ or $-\frac{a}{b}$, where a is a whole number and b is a positive whole number. The rational numbers include the integers.
- Repeating Decimal- A repeating decimal has a decimal expansion that repeats the same digit, or block of digits, without end.
- Terminating Decimal- A terminating decimal has a decimal expansion that terminates in 0.
- Zero Pair- A pair of numbers whose sum is zero.

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

Statement of inquiry

We can use formulas to model structures and relationships in the real world.

Inquiry questions

Factual— What are the characteristics of a triangle? What is pi? What is the relationship between supplementary angles? What is the relationship between complementary angles? What is a cross-section?

Conceptual— How are all circles related? How are area and circumference of a circle related? How do relationships between sides and angles help you identify and describe shapes?

Debatable— Is there a best method for finding surface area?

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: Knowing and Understanding Criterion C: Communication in Mathematics		**Formative Assessment(s):** Unit 4 CFA **Summative Assessment(s):** Unit 4: Geometry MYP: Pizza Task
Approaches to learning (ATL)		
Give and receive meaningful feedback. Keep an organized and logical system of information files/notebooks. Apply skills and knowledge in unfamiliar situations. **Category:** **Cluster:** **Skill Indicator:**		

Learning Experiences Add additional rows below as needed.		
Objective or Content	**Learning Experiences**	**Personalized Learning and Differentiation**

MGSE7.G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure	Angle Relationships- Error Analysis	This activity can be implemented in groups with provided scaffolds throughout along with intentional questioning.
MGSE7.G.4 Given the formulas for the area and circumference of a circle, use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.	Finding Area of Circles Math Shell	This activity can be completed individually or in a group. Students can be provided with manipulatives, calculators, and grid paper. Teachers can start the activity together and gradually release students.
MGSE7.G.2 Explore various geometric shapes with given conditions. Focus on creating triangles from three measures of angles and/or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.	Describing and Defining Triangles Math Shell	This activity can be completed individually or in a group. Students can be provided with manipulatives, calculators, and whiteboards. Teachers can start the activity together and gradually release students.
Content Resources		
Savvas Math Shell Illuminations Illustrative Mathematics		