

MP3b-Relationships in Geometry

Content Area: **Math**
Course(s): **Math 6 ACC**
Time Period: **Marking Period 3**
Length: **Weeks 5-10 Go Math! Advanced Unit 6**
Status: **Published**

Essential Questions

- How can you find the area of an irregular polygon using area formula?
- What steps might you take to solve a polygon problem given the coordinates of its vertices?
- How can a model help you to solve surface area and volume problems?

Big Ideas

- Find the areas of parallelograms, rhombuses, trapezoids and triangles.
- Use equations to solve area problems.
- Absolute value can be used to find the distance between two points with the same x and y coordinates.
- Use nets to find surface area.
- Find the volume of rectangular prisms

Technology Integration

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.

8.1.8.NI.3: Explain how network security depends on a combination of hardware, software, and practices that control access to data and systems.

Activity:

Tech-Desmos polygraph for coordinate points. It works like the game "Guess Who" where you can only use yes/no questions while using the proper math vocabulary. For example: "Is your point located on the y-axis?", "Is your x-coordinate negative?". Students are randomly paired each round and the goal is to get the correct ordered pair in the least amount of questions. Students then complete a review together about *the coordinate plane through a series of questions.

Diversity Integration

Objective: Students will create a quilt of their assigned country's flag.

Description of Activity

Students will measure the area of each shape on the quilt to determine the amount of material needed.

Enduring Understandings

Geometry

6.G.1 Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

6.G.2 Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l w h$ and $V = B h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

6.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 these techniques in the context of solving real-world and mathematical problems

6.G.4 Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

The Number System

6.NS.6c 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. 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.

6.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.

Mathematical Practices Focus

1. Make sense of problems and persevere in solving them. Lesson 13.1, 13.3, 14.1, 15.1,
2. Reason abstractly and quantitatively. Lesson 13.2, 13.4, 14.1, 14.2, 15.1, 15.2, 15.3
3. Construct viable arguments and critique the reasoning of others. Lesson 13.1, 13.2, 13.3, 14.1, 15.1, 15.3
4. Model with mathematics. Lesson 13.1, 13.2, 13.3, 13.4, 14.1, 14.2, 15.1, 15.2, 15.3
5. Use appropriate tools strategically. Lesson 13.1, 13.2, 14.1, 14.2,
6. Attend to precision. Lesson 13.4, 14.2, 15.1, 15.2, 15.3
7. Look for and make use of structure. Lesson 13.1, 13.2, 13.3, 13.4, 14.1, 15.2,
8. Look for and express regularity in repeated reasoning. Lesson 15.3