

Scaffolding Task: Shape Robot

Approximately 1 Day

Adapted from www.k-5mathteachingresources.com

STANDARDS FOR MATHEMATICAL CONTENT

MCC.2.G.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

STANDARDS FOR MATHEMATICAL PRACTICE

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

*****Mathematical Practices 1 and 6 should be evident in EVERY lesson.*****

BACKGROUND KNOWLEDGE

Students should have had prior experiences and/or instruction with plane figures from first grade and kindergarten. Students should be familiar with identifying sides (edges), vertices (corners), angles, circles, triangles, quadrilaterals (squares, rectangles,) and pentagons. Students should have been exposed to these terms since as early as Kindergarten.

Teachers may want to spend some time watching this video to assist in teaching the necessary vocabulary.

<http://gadoe.georgiastandards.org/mathframework.aspx?PageReq=MathName>

ESSENTIAL QUESTIONS

- How do we use the terms: angle, vertices, faces, sides, and edges to describe geometric figures?
- How do we describe geometric figures?

MATERIALS

- *The Shape of Things* by Dayle Ann Dodds or similar text
- Tangrams
- Crayons
- Handout

- Dot paper

GROUPING

Whole group, Individual, Partners

TASK DESCRIPTION, DEVELOPMENT, AND DISCUSSION

Part I

Gather students together to read *The Shape of Things* by Dayle Ann Dodds, or a similar book about shapes. During the story, ask students questions about the shapes and their observations from the book. Create an anchor chart of vocabulary generated during this discussion for future reference.

Part II

After completing the story, explain to the students that they will be building a robot from shapes and drawing the food that a robot will eat for lunch. Allow the students to build their robot using tangrams or pattern blocks and then draw their robot, either tracing the shapes used or free hand, in the space provided. Ask the students to label each piece of their robot using the shape vocabulary that they know. This will give you an idea of the shapes that the students can identify. This is a great opportunity to integrate writing by having the students create a story about their robot. This writing could include a story about a day in the life of a robot (narrative writing), an advertisement advising the reader of all the uses of your robot (persuasive), or a descriptive paragraph of all the shapes that make up the robot (informational).

FORMATIVE ASSESSMENT QUESTIONS

- What do you notice about the shapes?
- How do we categorize shapes?
- Can you identify the number of vertices?
- Can you identify the number of sides?
- How many of each shape did you use to create your robot?
- Did you use any shapes that you do not know the name of?
- Was it easier to use one shape more than another? Why or why not?
- What did you notice about the (adjacent) sides when you drew two shapes?

DIFFERENTIATION

Extension

- Students who demonstrate an understanding of the shapes presented in this lesson may combine shapes to form a number of different polygons, and name them, based on their understanding of shapes, or by researching the shapes.

Intervention

- Students who have difficulty drawing the shape can choose from pre-cut shapes or build the shapes with tangram pieces and trace the shape.

Georgia Department of Education

Common Core Georgia Performance Standards Framework

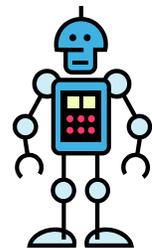
Second Grade Mathematics • Unit 5

- Use dot paper to assist students in drawing various shapes such as triangles, quadrilaterals, pentagons, hexagons, etc.
- Use a geoboard to assist students in creating various shapes.

Name: _____

SHAPE ROBOT is READY FOR LUNCH

Draw/create your Shape Robot here.



MATHEMATICS • GRADE 2 • UNIT 5: Understanding Plane and Solid Figures

Georgia Department of Education

Dr. John D. Barge, State School Superintendent

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