



## **Practice Task: The Shape of Things**

Approximately 1 Day

### **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**

(Information quoted from Van de Walle and Lovin, Teaching Student-Centered Mathematics: Grades K-2, page 193)

“Children need experiences with a rich variety of both two- and three-dimensional shapes. It is useful for students to be able to identify common shapes, notice likenesses and difference among shapes, become aware of the properties that different shapes have, and eventually use these properties to further define and understand their geometric world. As students find out more about shapes over time, they can begin to appreciate how definitions of special shapes come to be.”

### **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**

- *When a Line Bends, a Shape Begins* by Rhonda G. Greene
- “The Shape of Things” Student recording form.

### **GROUPING**

Individual, partners

### **TASK DESCRIPTION, DEVELOPMENT, AND DISCUSSION**

#### **Part I**

Gather students together to read *When a Line Bends, a Shape Begins* by Rhonda G. Greene. During the story, question the students about the attributes of the shapes mentioned in the book. Students should have demonstrated prior knowledge of shapes in the previous task. This questioning will provide you with knowledge of the students' understanding. After reading the story, ask students to identify the shapes around the classroom. Reinforce the correct terminology of words such as: triangles, quadrilaterals, pentagons, hexagons, and cubes. Don't use this conversation to "teach" these terms, but rather to have students explain what they are noticing around them. If the students produce misconceptions, use that opportunity to better clarify.

#### **Part II**

After the class discussion of shapes around the room, present the students with "The Shape of Things" Student Recording Form. Create a connection between the conversation that you had about the classroom and the playground shown on the Student Recording Form. Take this opportunity to go over the expectations of a clear explanation and the illustration of the shapes.

#### **Student Recording Form Directions:**

*Examine the scene of the playground. There are many different shapes that make up the toys and play-equipment. Name, draw, and describe clearly all shapes you can see in the playground picture.*

#### **Part III**

Take class outside to investigate and record all the shapes they see on the playground(s) at your school. This could easily be extended into a homework assignment by having students describe the shapes of any play equipment near their home.

### **FORMATIVE ASSESSMENT QUESTIONS**

- What shapes do you see around the room?
- How do you know it is that shape?
- What attributes or characteristics does that shape have?
- How are these shapes similar?
- How are these shapes different?
- Are there any shapes on your playground that you can see around the room?

### **DIFFERENTIATION**

**Extension**

- Students who demonstrate an understanding of the shapes presented in this lesson may draw a picture using the shapes in this lesson and include the heptagon (7-sided polygon), octagon (8-sided polygon), nonagon (9-sided polygon), and decagon (10-sided polygon).

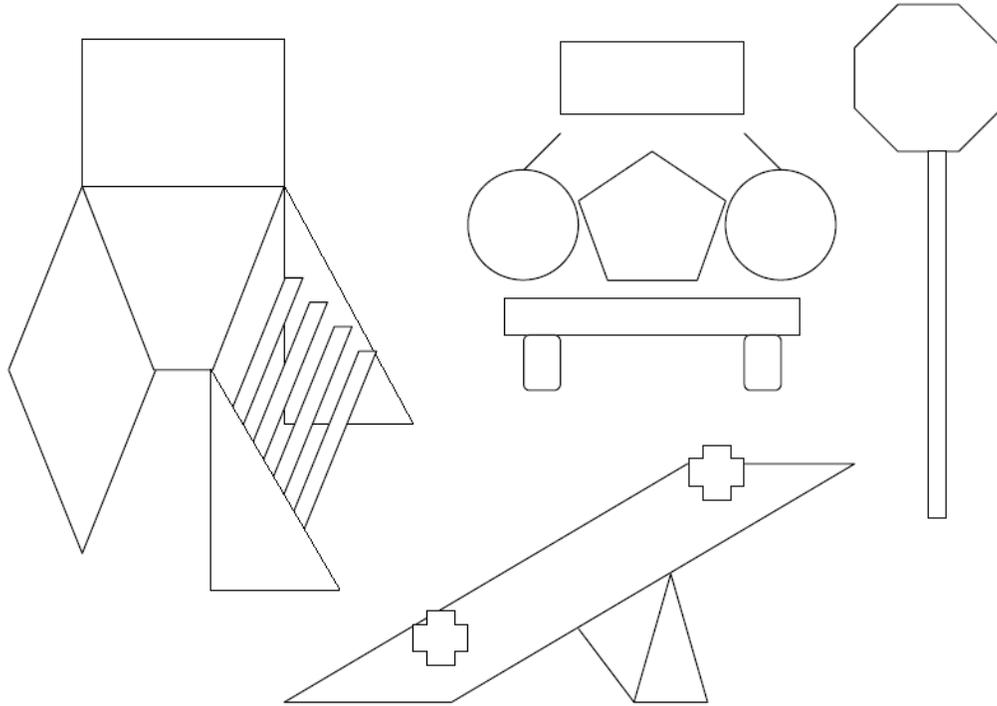
**Intervention**

- Assist students in creating a chart labeling the polygons in various orientations. This could be created by gluing on pre-cut shapes, or by having students draw and cut out shapes. This student-created chart becomes an anchor chart for whole class reference after being created as an intervention strategy.

Name: \_\_\_\_\_



## The Shape of Things



Examine the scene of the playground above. There are a lot of different shapes that make up the toys and play-equipment. Name, draw and describe clearly all shapes you can see in the playground picture.

(Information adapted from the Noyce Foundation, Problems of the Month)