

Shape Up!

Reporting Category Geometry

Topic Exploring plane geometry

Primary SOL 1.12 The student will identify and trace, describe, and sort plane geometric figures (triangle, square, rectangle, and circle) according to number of sides, vertices, and right angles.

Related SOL 1.13, 1.16

Materials needed

- Attribute blocks
- Digital camera (if available)
- Recording sheet (divided into three columns headed “0 Sides,” “3 Sides,” and “4 Sides”)

Vocabulary

triangle, square, rectangle, circle, trace, curved, straight, sides, vertices, right angles

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Begin by providing students with a variety of attribute blocks. Tell them that you are going to call out a shape, and they are to pick up the shape you name and hold it above their heads for you to see. As you call out each shape, observe which students are able to identify it correctly. For each shape, ask students questions such as, “How do you know this is a (triangle)? What can you tell me about a (triangle)?” Have students identify a triangle, square, rectangle, and circle.
2. Direct students to make a person or animal with their attribute blocks. Give them a few minutes to complete their design. Circulate to clarify, offer assistance as needed, and encourage mathematical discussion. When students have completed their attribute block designs, take pictures of them, if possible, to be attached to final projects.
3. Distribute copies of the recording sheet. Have students take apart their people or animals and place each block one at a time under the correct heading (e.g., the triangle under the 3-Sides column). Have students trace each shape in the appropriate column on their recording sheet.
4. When students have completed their work, put away the blocks, and have students discuss the number of sides of each traced shape on their recording sheets. Point out that the number of sides helps to define the type of shape. Once students understand this concept, repeat this activity, using different ways of sorting—i.e., by number of vertices or number of right angles.

Assessment

- **Questions**
 - “How is the recording sheet you made today like the recording sheet you used yesterday? How is it different?”

- “Think about how you sorted the shapes by the number of right angles. Look around the room and find one object that has a right angle and one object that doesn’t. How did you choose these objects? How do you know you chose correctly?”
- **Journal/Writing Prompts**
 - “Look at the recording sheet you made today, and write about or draw how you sorted the shapes.”
 - “Write about or draw objects that you can see in the environment that are shaped like a triangle, a square, a rectangle, and a circle.”
- **Other**
 - Work with students to create a riddle book about shapes (e.g., “I have three sides and no right angles, and I have three vertices. Who am I?”).
 - Use attribute blocks and a Venn diagram (or hula hoops) to sort blocks by given attributes.
 - Place attribute blocks in a long sock, and have students take turns putting their hand in and describing to the class the attributes of the shape they are feeling. Classmates must identify the shape from the described attributes.
 - Pair students, and give each pair some attribute blocks hidden in a long sock. Partner A describes the attributes of a shape to his/her partner, who must then reach in and find the shape being described. Partners take turns.

Extensions and Connections (for all students)

- Have students play Four Corners, in which a shape (circle, square, rectangle, or triangle) is hung in a corner of the classroom. When you count to three, students walk to a corner and wait until the person who is “it” (with eyes shut and facing away from the students) describes the attributes of one of the shapes (e.g., “zero vertices and zero sides”). Students who are under the described shape are “out” and must sit out one turn before returning to the game. Students remaining in the game must change corners after every turn.
- Provide shape templates in your art center so students may practice tracing each of the four basic shapes. Have him/her name the attributes of the shapes as he/she works.

Strategies for Differentiation

- Provide a sentence frame such as, “I know it is a _____ because it has _____ sides and _____ vertices.”
- Provide visual cues such as a poster with the names and pictures of the shapes. Label sides, vertices, and right angles on the chart for reference.