myTeachingPartner Math Science

Building Triangles and Rectangles

Skill Supported: Shape Recognition and Properties

Small Group

GET READY

Objectives

- Build and sort rectangles and triangles
- Compare and describe the relative length (longer, shorter, same) of two lines

Topic(s)

Geometry
Shapes

Use the Lingo

- Triangles
- Rectangles
- Straight sides
- Pair
- Starting point
- Measuring
- Longer
- Shorter
- Opposite side

Materials Needed:

- Coffee stirrer 'sticks' (seven per student: five long and two short)
  -Alternatively, use straws
- Coffee stirrer 'sticks' of varying lengths (three per small group)
  -Alternatively, use straws
- Rectangle and triangle foam shapes (one of each per student)
- Tape
- Colored paper (one piece per student)

Additional Preparation Required:

- None

Teaching Tip: *Be the Best*

Encourage students to use specific language to explain the properties of shapes. For example, the number of sides, length of the stirrers, and types of lines.

ENGAGE

1. Say: *Today we are going to learn about triangles and rectangles! We are going to build our own triangles and rectangles! I have three sticks. What shape could I make with these three sticks?*
   - Model how to make a triangle with three varied length sticks. Ask: *What shape did I make?*

INVESTIGATE

2. Explore and build a triangle.
   - Give each student the three sticks for their triangle.
   - Compare the sticks to determine if they are the same size or if some are longer and some are shorter. Emphasize the importance of laying them side by side and using the same starting point (e.g., the edge of the paper) when comparing objects.
   - Tape the triangles to the paper after students have aligned the sticks so that all three are touching and form a triangle.
   - Discuss how triangles can look different but still be triangles: the sides can be different lengths, but if all three sides are straight lines and the ends are touching, it's a triangle.
   - Take a student's paper and ask: *What shape is this? Rotate the paper and ask: Is it still a triangle? How do you know?*

3. Repeat for rectangle.

- Emphasize measuring the sticks to tell which *pair* of sticks are longer and which *pair* is shorter. Remind students to make sure to line up the ends at the same starting point: Have students stand the sticks up on the table to look at their lengths and determine which are shorter sticks and which are the longer sticks.
- Create rectangles by arranging the shorter sticks on opposite (facing) sides of the rectangle, and the longer sticks on opposite sides. Make sure the ends all touch in the corners before taping them down.
- Encourage conversation about what makes the rectangle a rectangle, and what makes it the same and/or different from other shapes.
- Discuss how rectangles can look different but still be rectangles. Some pairs of sides might be very long, some very short, etc. Recall how squares are a special type of rectangle with all four sides the same length.

INVESTIGATE

4. 🗨 Say: *Today we learned about triangles and rectangles!*

   🗨 *Can you tell me about how you made a rectangle? What did you need to make it?*

   🗨 *How about triangles-what did you need to make a triangle?*

- Encourage students to discuss the properties of rectangles and triangles and to use the new language about sides and measuring.

DISCUSS

Have students practice drawing and recognizing shapes.

- Encourage students to use stencils to trace shapes.
- Ask students to use cutouts of shapes to make a picture.
- Ask students to point out rectangles and triangles that they see in the classroom.

EXTEND

For Students Requiring More Challenge

- Using drawings of rectangles and squares, draw lines through opposite corners to show how they can be split into triangles.

For Students Requiring More Support

- Give students a piece of paper with triangle and rectangle outlines drawn. Allow students to place their sticks on the outlines and tape them down.

MAKE IT WORK

Adapted, by permission, from M. Kinzie, R.C. Pianta, J. Vick Whittaker, M.J. Foss, E. Pan, Y. Lee, A.P. Williford, & J.B. Thomas, *MyTeachingPartner—Math/Science* (Charlottesville: University of Virginia, Curry School of Education, The Center for Advanced Study of Teaching and Learning, 2010).