

## **Early Elementary**

# **Stretchy Shapes**



The objective of this activity is to promote children's understanding of shape attributes. In this activity, children will make two-dimensional shapes with stretchy bands. They will explore attributes of shapes, such as corners (vertices) and sides (edges), and discover how to add sides to existing shapes to make new shapes.

# Key Concepts

- Learn about shapes and their attributes.
- Use knowledge about shapes and their attributes to make a variety of shapes.
- Name shapes and describe their attributes.

## **Materials and Setup**

 One stretchy band or a long piece of yarn for each group of three to five children



activity

Small groups or as a whole class



Large indoor or outdoor open space

# **Activity Instructions**

Below are some ideas for exploring stretchy shapes. Each of the steps of this activity builds on the previous one, so we encourage you to engage children in the activity in the order provided.

However, consider your group's understanding of shapes and shape attributes. For younger children, you might end the activity after they have made four-sided shapes in step 3. For older children, you might encourage them to complete steps 1 to 4.





- Divide the children into groups of three or more children. Provide each group with one stretchy band. Ask each group to make a triangle with their stretchy band. Ask them to make it larger and then smaller. Encourage them to notice all the different triangles that they can make (see Figure 1).
  - a. You might ask children the following questions as they explore how to make a triangle: How did you make the triangle smaller or larger? What stayed the same? What was different?



Figure 1. Pictures of four triangles: equilateral, isosceles, scalene and right-angled triangles.

- Ask children to predict what shape they would make if they added one side (edge) and one corner (vertex) to the triangle. Discuss possible answers by introducing simple shape names, such as square, rectangle, and rhombus in kindergarten, and more complex shapes, such as trapezoid, hexagon, octagon, and quadrilateral in early elementary.
- 3. Invite children to add one side (edge) and one corner (vertex) to their triangle. Discuss what they observe and what shape they have made. Ask children to make a square and a four-sided shape that is not a square.
- 4. If there is time, invite children to continue constructing shapes by adding more sides and corners. Before they create each shape, ask them what they think the new shape will be.

# Using M<sup>5</sup> to Support Children's Shape Learning

This section offers ways to use the M<sup>5</sup> Early Math Approach to support children's learning and development during this activity.

## Mutual Learning

- Observe children as they create different shapes using stretchy bands.
  - Consider ways that the shapes children make might connect to their lived experiences, culture, or families. Ask children to share where they have observed these shapes in their environments. For example, they might create a rectangle and notice it is the same shape as their kitchen table.
- Notice the languages, gestures, and vocabulary children use while they create and describe shapes.
  - Invite children to use visuals or gestures to describe shapes' attributes.





## Meaningful Math Investigations

- Ask open-ended questions to prompt children to use attribute language while describing shapes they make. For example, you might ask:
  - "How do you know this is a triangle?"
  - "What did you have to do to make a four-sided shape that was not a square? How did you move your bodies to make this shape?"

### Materials and Learning Environment

- Observe how children are using the stretchy band, the environment, and their bodies to make shapes.
  - Encourage children to make the shapes bigger and smaller.
  - Invite children to change the orientation of the stretchy band. For example, if children are making a triangle that is parallel to the ground, ask children if they can make a triangle that has one point toward the ground and two points toward the sky.

### Math Vocabulary and Discourse

- Encourage multilingual learners to name shapes and shape attributes in their home languages, English, or a combination of languages.
- Consider introducing "corners" and "sides" in preschool and transitional kindergarten, and "vertices" and "edges" in kindergarten.

#### **Multiple Representations**

- Invite children to interact with shapes they created.
  - Use their hands to trace the shapes' paths.
  - Move their bodies inside of the shapes.
- Offer other opportunities for children to demonstrate their understanding of shapes and their attributes.
  - Engage children in a "Guess the Shape" game: Children feel an object without looking at it. Then they identify the shape's name and how they know it is that shape.
  - Invite children to make shapes with their bodies or with materials like wax craft sticks.

