Objective

Explore shape attributes and spatial sense.

Common Core State Standards

- **K.G.4** Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).

Geometry

Exploring Shape Attributes

Geometry in the early grades begins with describing the attributes of shapes. Attributes, such as the number of sides and corners a shape has, help children tell different shapes apart. As children become familiar with shapes and their attributes, they construct a framework for understanding not only their spatial world but also other topics in mathematics and in art, science, and social studies.

Talk About It

Discuss the Try It! activity.

- **Say:** *Point to a corner of the square. Now point to a side.* **Ask:** *How many sides does a square have? How many corners?*
- **Ask:** *When you put a bear in each corner of the triangle, how many bears did you use? How many sides does a triangle have? How many corners?*
- **Ask:** *Why couldn't you put a bear in the corner of a circle? Why couldn't you put a bear on the side of a circle?*

Solve It

With children, reread the problem. Have children find the Attribute Blocks that Miguel picked out. Then have them trace the blocks on a piece of paper.

More Ideas

- Have children identify sides and corners in Pattern Blocks. Have them position several blocks on a piece of paper. Then, have them write the number of sides and the number of corners next to each shape.
- Have children draw shapes using Attribute Blocks as models. For example, tell children to choose a shape with three sides and three corners and then draw a picture of it. Then repeat with other shapes.

Formative Assessment

Have children try the following problem.

Circle the shape that has four sides. Draw an X on the shape with three corners.

Try It!   30 minutes | Pairs

Here is a problem about shape attributes and spatial sense.

Miguel and Felicia are making shape collages in class using paper cutouts of Attribute Blocks. Felicia wants to use only shapes with four corners and four sides. Miguel finds two shapes for Felicia to use. Which shapes are they?

Introduce the problem. Then have children do the activity to solve the problem.

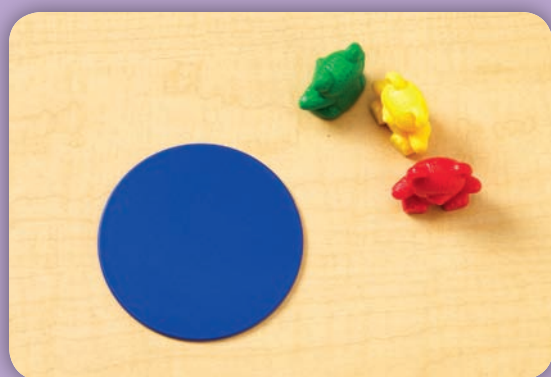To begin, give each pair of children blocks and five Three Bear Family Counters.

Materials
- Attribute Blocks (1 of each shape per pair)
- Three Bear Family® Counters (5 assorted bears per pair)

1. Hold up the large square block. Point out that it has four sides and four corners. **Say:** *Put a bear on one of the sides.* Make sure children are able to place bears correctly. **Say:** *Now put a bear in one of the corners.* Watch to see that children put the counters in a corner.

2. Hold up the large triangle block. Point out that it has three corners and three sides. **Say:** *With your partner, put a bear in each corner of the triangle.* Make sure children correctly identify the corners of the triangles by placing the counters in them.

⚠ Look Out!

Some children may think that placing a bear somewhere on the perimeter of the circle is the same as placing a bear on the side. Make sure that children understand that a side is straight, and that circles do not have sides.

3. Now hold up a circle. **Ask:** *Can you put a bear in a corner of this shape? Can you put a bear on a side of the shape?* Tell children that they cannot do either of these things because the circle has no sides and no corners.
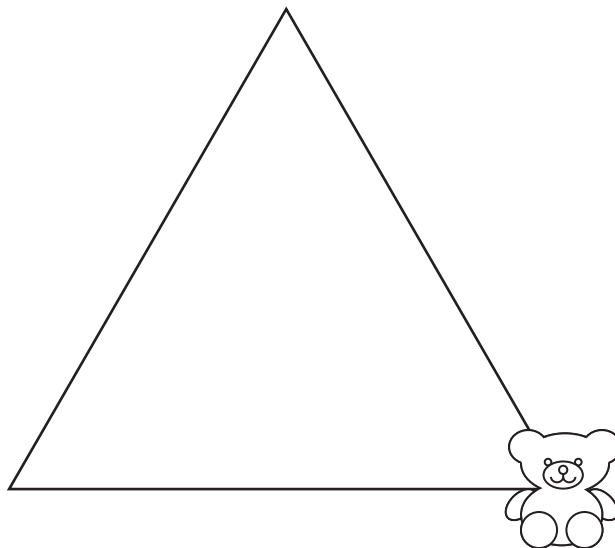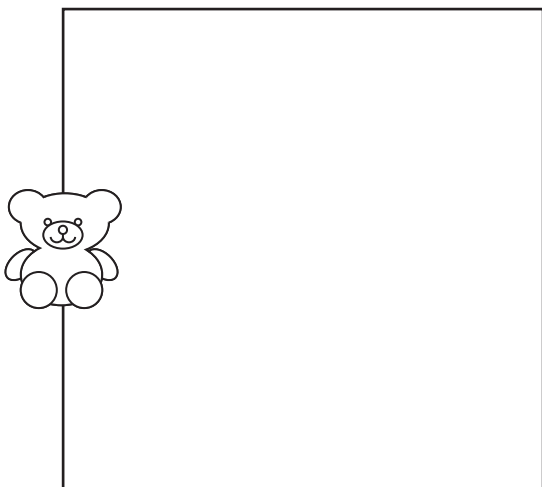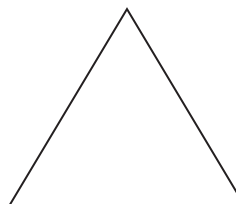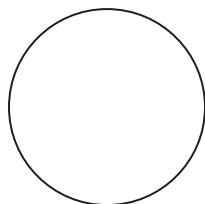
1.

Check children's work.

_____ 3 _____ sides _____ 3 _____ corners

2.

Directions

1. Color the shape that has a bear at a corner. How many sides does this shape have? How many corners? **2.** Find the shape with no sides and no corners. Color it green. Find the shape with 4 corners. Color it orange.
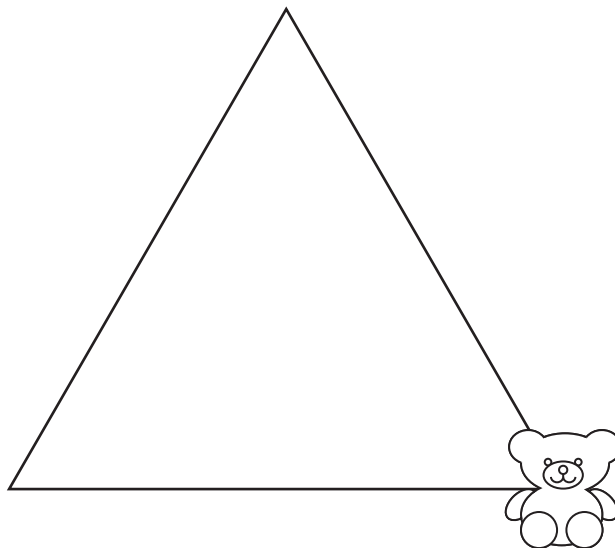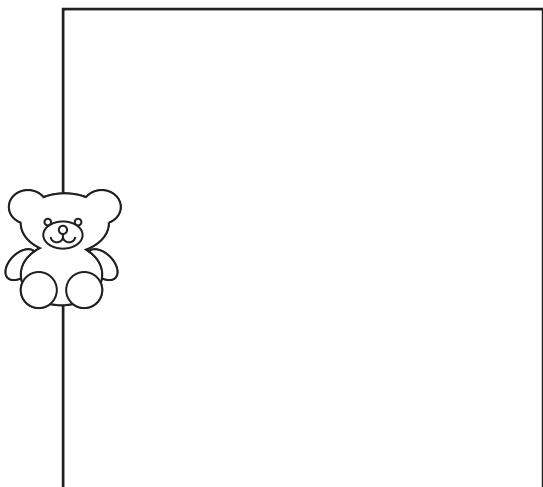
Answer Key

Challenge

Use Attribute Blocks. Find a shape with 3 sides and 3 corners. Draw it and color it yellow. Find a shape with 4 sides and 4 corners. Draw it and color it red.
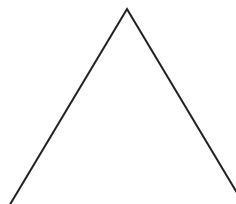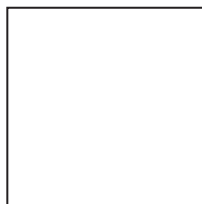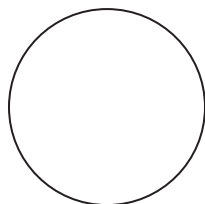
Name _____

1.

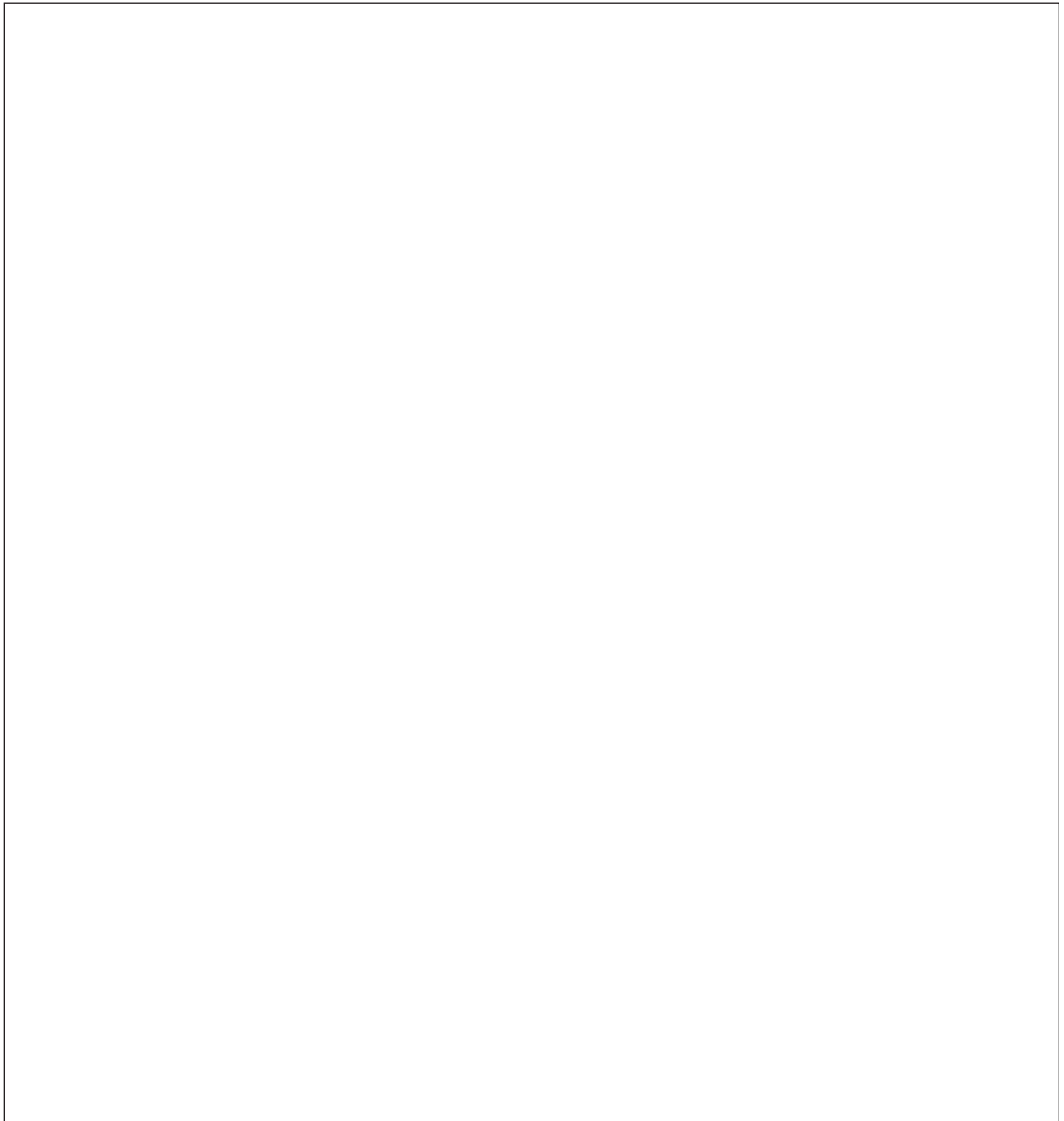_____ sides _____ corners

2.

_____

Directions

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