



Chapter 9 Two-Dimensional Figures and Spatial Sense

This chapter introduces children to geometry concepts of two-dimensional figures. In the beginning of the chapter, children sort figures by different attributes. They see that figures can be sorted, manipulated, combined, and cut apart to make other figures. Children learn visualization skills as they use concrete materials and draw pictures of geometric- models.

About the Math

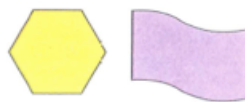
- Young children begin reasoning by *resemblance* or appearance. Children can also reason by *attributes*, describing geometry figures in terms of specific components such as number of sides, the length of sides, or the size of the angles.
- By considering attributes, children begin to find shared features of figures.
- *Flipping* something upside down (in a mirror) and *turning* (or rotating) it upside down are quite different, but the term “upside down” does not distinguish between the two. It is important to use specific words to help children learn how to express these ideas.

Vocabulary

open figures



closed figures



polygon



Each figure is a polygon.

congruent



Figures that are the same size and shape are **congruent**.

similar



Literature Connection

Let's Fly a Kite

By Stuart J. Murphy

Math Concept: exploring
symmetry



In the Car Activities

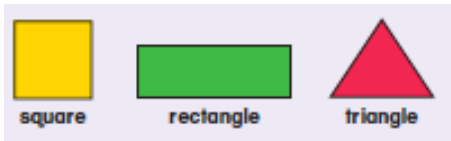
- ★ Play "I spy", identifying objects by shape
- ★ Identify pictures of shapes as polygons or not polygons

Family Fun

I Spy

Work with your child to play a game about two-dimensional figures called *I Spy*.

- Review the names of these figures.



- To play the game, you secretly choose an object in the room that is (or contains) one of these figures. Then you say, "I spy a square (rectangle or triangle)."
- Your child asks yes/no questions about the object until he or she guesses the correct one. Some good questions to ask are: "Is the square in a place that we can easily see?" or "Does the object have more than one square?"
- Take turns selecting an object and asking the questions.

Lines of Symmetry

Work with your child to make a figure that has a line of symmetry.

- You will need paper and scissors. Help your child fold the sheet of paper in half. Make sure the two halves match.
- Help your child draw a design that starts and ends at the fold. Together, guess what the shape will look like when it is cut out and the paper is opened.
- Hold the folded side of the paper and cut out the design. You should not cut along the fold.
- Invite your child to unfold the paper and draw a line down the fold. You made a line of symmetry!

