SCHOOL-to-HOME CONNECTIONS

Chapter 12

Angles, Lines, and Two-Dimensional Figures

Dear Family,

In this chapter, your child will learn about angles, lines, and two-dimensional, or flat, shapes. Skills your child will practice include:

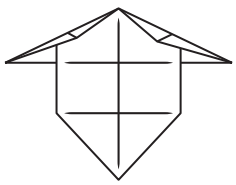
- finding angles in plane figures and real-world objects
- comparing angles to a right angle
- defining and identifying perpendicular and parallel lines
- identifying open and closed plane figures, special polygons, and special quadrilaterals
- recognizing polygons by their attributes

Math Practice

We are surrounded by angles, lines, and two-dimensional shapes. With your child, look for examples in your home, such as the parallel lines formed by window blinds, the perpendicular lines that form right angles on door corners, and the surfaces of objects like the table tops, cupboard doors, window frames, television sets, and kites. At the end of this chapter, you may want to carry out these activities with your child. These activities will help to strengthen your child's understanding of angles, parallel lines, perpendicular lines, and help your child identify polygons.

Activity 1

- Help your child fold a rectangular piece of paper to make a variety of angles to identify. Use the folded piece of paper to reinforce acute or obtuse angles to your child.



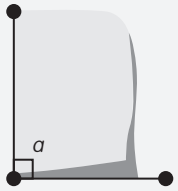
Activity 2

- Take your child outdoors to locate more parallel and perpendicular line segments, as well as angles. For example, the parallel line segments formed along crosswalks, and the perpendicular line segments that form right angles at the corners of square and rectangular street and park signs.

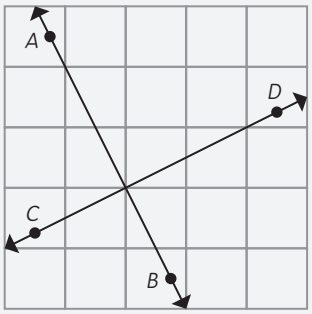
Math Talk

Explain to your child that when two line segments share the same endpoint, they form an **angle**.

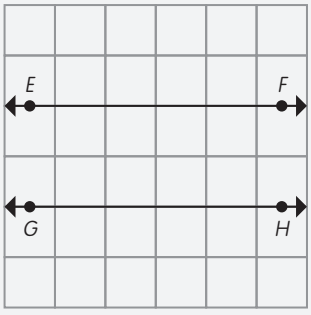
Angle *a* is a **right angle**.



Help your child see that **perpendicular lines** are at right angles to each other.



Parallel lines will never meet, even if they are extended.



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Activity 3

- Look at online images of common road signs, such as:
  - a yield sign (triangle)
  - a street name or speed limit sign (rectangle)
  - a sign alerting drivers to an upcoming traffic signal or to road crews working (rhombus)
  - a stop sign (octagon)

Activity 4

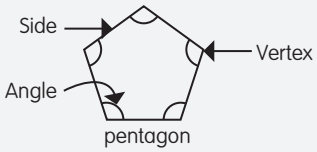
- Check out a book at your local library or go online to find examples of origami, or paper folding.
- To make an origami animal, have your child use a ruler to measure and cut a square from a piece of notebook paper.
- Then, help him or her follow the directions for creating an animal, discussing the kinds of polygons they can identify from the folds.



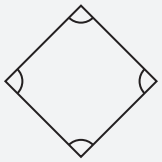
Math Talk

Explain to your child that a **polygon** is a closed figure formed by three or more line segments.

Use the following **pentagon** to help your child recognize that the prefix *penta* means "5." Have your child identify the 5 **sides,** 5 **vertices** (the plural form of *vertex*, the point at which two lines or line segments meet), and 5 **angles**.



Next, use the following **rhombus** to help your child recognize that the prefix *quad* means "4." Point out that a **quadrilateral** is a polygon with 4 sides, 4 vertices, and 4 angles.



Then, ask your child to identify two pairs of **parallel lines** in the rhombus.



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