

KEY CONCEPT OVERVIEW

During the next few days, our math class will explore geometric shapes, or **polygons**. We will learn the names and **attributes**, or characteristics, of the following **two-dimensional shapes**: **triangle**, **quadrilateral**, **pentagon**, and **hexagon**. We will learn to recognize, describe, and draw these shapes based on the number of sides and **angles** they have. We will use this knowledge as we learn about **parallel** lines, **right angles** (square corners), **trapezoids**, **parallelograms**, **rectangles**, and **rhombuses**. Finally, we will build a **three-dimensional shape**, the **cube**, to explore the connection between it and its two-dimensional counterpart, the **square**.

You can expect to see homework that asks your child to do the following:

- Identify the number of sides and angles for a given shape.
- Count the number of sides and angles to identify polygons.
- Use a straightedge or ruler to draw a polygon based on a given set of attributes.
- Name the attributes of a cube and practice drawing cubes.

SAMPLE PROBLEM (From Lesson 3)

Use a straightedge to draw the polygon with the given attributes.

Draw a polygon with 3 angles.



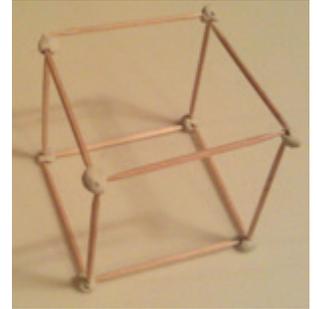
Number of sides: **3**

Name of polygon: ***triangle***

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at GreatMinds.org.

HOW YOU CAN HELP AT HOME

- Give your child a handful of toothpicks or straws and encourage her to create two-dimensional shapes (e.g., triangle, parallelogram, pentagon). As she creates each shape, ask her to identify it and describe its attributes. For example, she might make a triangle and say, “This is a triangle because it has 3 sides and 3 angles.”
- Invite your child to teach you how to construct a cube by modeling the process for you. (See image at right.) You will need 24 toothpicks and 16 pieces of a sticky material such as mini marshmallows or gumdrops. Have fun! As he builds, ask your child questions about the attributes of a cube: “How many **faces** does a cube have? How many corners? How many edges? What shape are the faces of a cube?”
- Go on a shape hunt around the home and around town. Challenge your child to spot as many shapes as she can and to prove she is correct by naming the attributes that define the shape. For example, she might spot a street sign and say, “I see a rectangle! It has 4 sides and 4 right angles!”



TERMS

Angle: A figure formed when two straight sides share a common endpoint. (See Figure 1.)

Attributes: The characteristics of a shape, such as the number of sides, angles, or faces.

Cube: A three-dimensional shape with six square faces of equal size.

Faces: The two-dimensional surfaces of a three-dimensional solid. A face can be a circle, triangle, square, or other flat shape.

Hexagon: A six-sided polygon.

Parallel: Used to describe opposite sides of a parallelogram in Grade 2. For example, “These sides are parallel because if they kept on going, they’d never intersect!”

Parallelogram: A quadrilateral in which both pairs of opposite sides are parallel.

Pentagon: A five-sided polygon.

Polygon: A closed figure with three or more straight sides (e.g., triangle, quadrilateral, pentagon, hexagon).



Figure 1

Quadrilateral: A four-sided polygon.

Rectangle: A parallelogram with four right angles.

Rhombus: A parallelogram with four sides of equal length.

Right angle: A square corner (a 90 degree angle). (See Figure 2.)

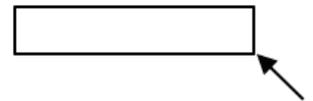


Figure 2

Square: A rectangle with four sides of equal length.

Three-dimensional shape: An object that has depth, height, and width such as a cube, rectangular prism, cylinder, sphere, or cone.

Trapezoid: A quadrilateral in which at least one pair of opposite sides is parallel.

Triangle: A three-sided polygon.

Two-dimensional shape: A flat shape with no depth such as a circle, triangle, rectangle, square, hexagon, or trapezoid.