

KEY CONCEPT OVERVIEW

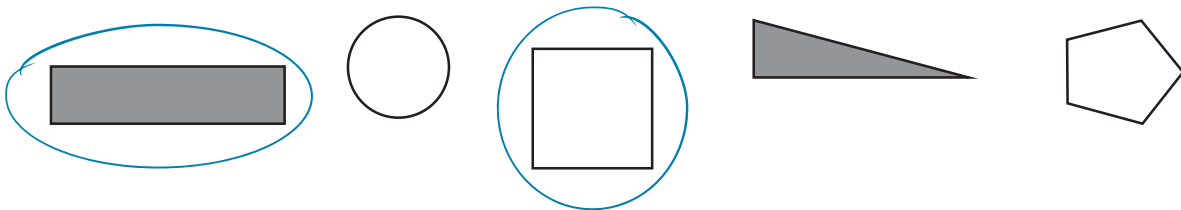
During the next few days, our math class will explore the **attributes**, or characteristics, of shapes. We will learn the names and attributes of the following **two-dimensional shapes**: circle, **triangle**, **rectangle**, **square**, **hexagon**, **trapezoid**, and **rhombus**. We will learn to describe two-dimensional shapes based on attributes of sides and corners. We will also learn the names and attributes of the following **three-dimensional shapes**: sphere, cube, cylinder, cone, rectangular prism, and triangular prism.

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

- Identify and draw a shape according to the attributes of its sides and vertices (corners).
- Name shapes and list their attributes, or name a common attribute that describes shapes in a group.
- In a group of shapes, identify the shape that does not share the same attributes as the other shapes and explain why.
- Find and list three-dimensional shapes in the home.

SAMPLE PROBLEM *(From Lesson 1)*

Circle the shapes that have four **vertices**.



HOW YOU CAN HELP AT HOME

- **Play Spot the Shape:** With your child, see who can spot the most two-dimensional and three-dimensional shapes. You can play this game at home or during a trip around town. Challenge your child to describe the attributes that define the shape as she names it. For example, if your child sees a cube, she might say, “I see a cube! It has 6 square **faces** and 8 vertices!”
- **Play Guess My Shape:** Ask your child to guess a shape you are imagining by asking yes or no questions. For example, he might ask, “Does it have square corners?” or “Does it have any faces?” or “Does it have four sides?” “Does it have more than 4 vertices?”
- **Play Draw that Shape:** Name a two-dimensional shape (circle, triangle, square, rectangle, hexagon, rhombus, or trapezoid) for your child to draw. Then ask her to list the attributes of the shape she drew.

TERMS

Attribute: Characteristic of an object such as its color or the number of its sides.

Face: A two-dimensional surface of a three-dimensional solid.

Hexagon: Flat, closed figure with six straight sides.

Rectangle: Flat, closed figure with four straight sides that form right angles (square corners) where they meet.

Rhombus: Flat, closed figure with four sides of the same length.

Square: A rectangle with four sides of the same length; this attribute makes a square a special rhombus as well as a special rectangle.

Square corners: Sides that form 90 degree, or right, angles. In Grade 1, students use a square, or the square corner of another object, to determine whether a shape has this type of angle.

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

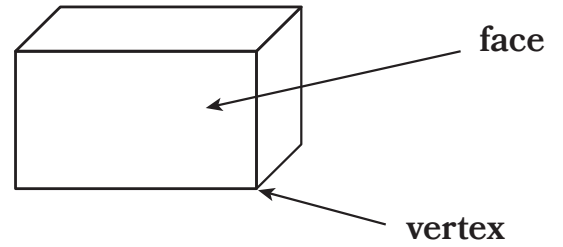
Trapezoid: Flat, closed figure with four straight sides and exactly one pair of sides that are parallel.

Triangle: Flat, closed figure with three straight sides.

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

Vertex (*plural vertices*): A point on a two-dimensional figure where two straight sides meet. The point on a three-dimensional figure where at least 3 line segments meet.

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



KEY CONCEPT OVERVIEW

During the next week, our math class will explore part–whole relationships with shapes. Just as students have learned that numbers can be made of smaller parts, they will see that shapes can be broken into smaller parts as well. We will learn to find and name smaller shapes within a larger shape. We will also learn to use positional words (e.g., *left*, *right*, *on top of*) as another way to describe how to make larger shapes with smaller shapes.

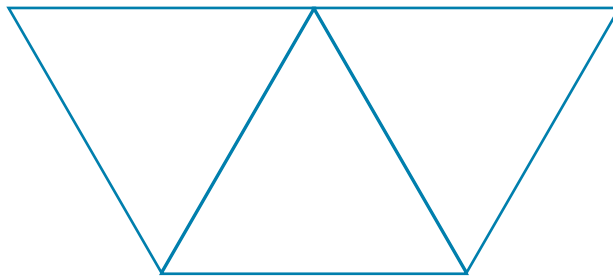
You can expect to see homework that asks your child to do the following:

- Use specific shapes to create a given larger shape; for example, use two squares to create a rectangle.
- Count the number of small squares within an image of a larger square.
- Create a structure by using three-dimensional objects found around the home.

SAMPLE PROBLEM *(From Lesson 4)*

Use pattern block shapes to create a larger shape. Trace or draw to show what you did.

Use 3 triangles to make 1 trapezoid.

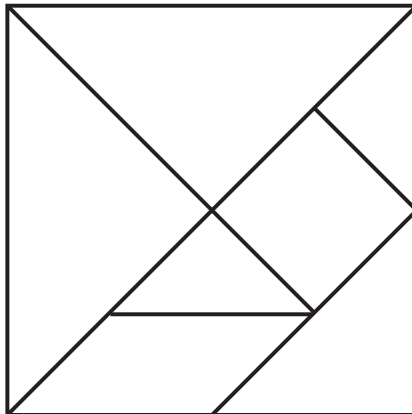


HOW YOU CAN HELP AT HOME

- With your child, look for and name shapes you find within larger shapes around the home and around town. For example, a rectangular window may contain six or nine smaller squares, or the pattern on a rug may contain a rhombus created from two triangles.
- Model math vocabulary and positional words while playing with building blocks with your child. Encourage your child to describe her creations or her blocks by using shape names (e.g., cube), attributes (e.g., six square faces), and positional words (e.g., *on top of*).
- Build shapes, animals, designs, or anything else your child desires with the **tangram** pieces from the Lesson 5 Homework, allowing him to use his creativity and new knowledge about shapes. As he places a piece, ask him to tell you about it, naming the shape (e.g., triangle) and its attributes (three vertices and three sides).

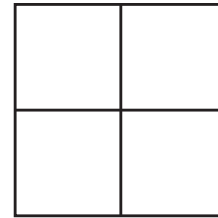
MODELS

Tangram: A geometric puzzle consisting of a square cut into seven shapes that can be arranged to make various other shapes.

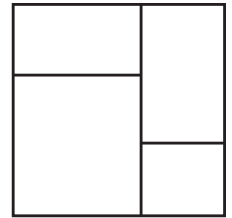


KEY CONCEPT OVERVIEW

During the next few days, our math class will explore equal parts. We will learn to look at the differences between shapes made from equal parts and shapes made from unequal parts. (See image at right.) Next, we will look at partitioned circles and rectangles and name their equal parts as either **halves** or **quarters**. Finally, we will compare halves and quarters of the same-sized whole and realize that as we break apart a whole into more equal shares, we create smaller and smaller units.



Equal Parts



Non-equal Parts

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

- Identify shapes made from equal parts and count the number of equal parts.
- Draw lines to break a shape into equal parts and name the smaller shapes (e.g., break a rectangle into two equal parts and identify the parts as squares).
- Use the terms *halves*, *quarters*, and *fourths*.
- Compare different-sized parts of a shape (e.g., one quarter of the circle is smaller than one half of the same circle).

SAMPLE PROBLEM (From Lesson 9)

Color part of the shape to match its label. Circle the phrase that makes the statement true.

One half of the circle

is larger than

is smaller than

is the same size

one quarter of the circle.

HOW YOU CAN HELP AT HOME

- Look for shapes or objects made from parts and ask your child to determine whether they are equal parts or unequal parts. For example, when cutting sandwiches, intentionally cut 2 unequal parts to discuss why the 2 pieces are not called halves. Ask your child how you could have cut the sandwich to make equal parts.
- Explore halves and fourths (quarters) in paper crafts, particularly when folding or cutting. Ask your child, “How can we fold the paper to make sure our four parts will be equal? How can we fold the paper to ensure we have halves and not just two parts?”
- Explore equal parts with objects as well. Give your child a number of equally sized objects (e.g., 12 lima beans or 10 pennies) and ask her to show you how many different ways she can break the set of objects into equal parts. For example, when working with 8 beans, your child may make 2 equal parts by making 2 piles of 4 beans.

TERMS

Halves: When a whole is divided into two equal parts, the parts are halves.

Quarters or Fourths: When a whole is divided into four equal parts, the parts are quarters or fourths.



KEY CONCEPT OVERVIEW

During the next week, our math class will learn to tell time to the hour and half hour by using **digital** and **analog clocks**. We will learn that 12:30, for example, is called both twelve thirty and **half past** twelve.

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

- Match an analog clock with a given time and/or with a digital clock showing the same time.
- Identify the analog or digital clock that correctly shows a given time.
- Draw the hour hand and minute hand on an analog clock to match a given time.
- Write the time in either digital (e.g., 5:30) or word form (five thirty).

SAMPLE PROBLEM *(From Lesson 11)*

Write the time on the line under the clock.



12:30 or half past twelve

HOW YOU CAN HELP AT HOME _____

- Encourage your child to use an analog clock at home. Consider covering digital clocks to reinforce practice with the analog clock.
- Set particular routines such as bedtime, dinner, or homework time to the hour and half hour so your child can notice and tell time to the hour and half hour. For example, challenge your child to consider what time it will be at the end of his one-hour sports practice or half-hour TV show.
- When given the opportunity, talk to your child about time. For example, you might say, “You have 10 minutes until we have to leave,” or “Let’s look at the clock. It will take us half an hour to get to the zoo.”

TERMS _____

Half past: An expression for 30 minutes after a given hour. For example, 12:30 is half past twelve.

MODELS _____

Analog Clock: A clock or watch that displays time by the positions of the hour and minute hands.



Digital Clock: A clock or watch that displays the time with digital numbers.

