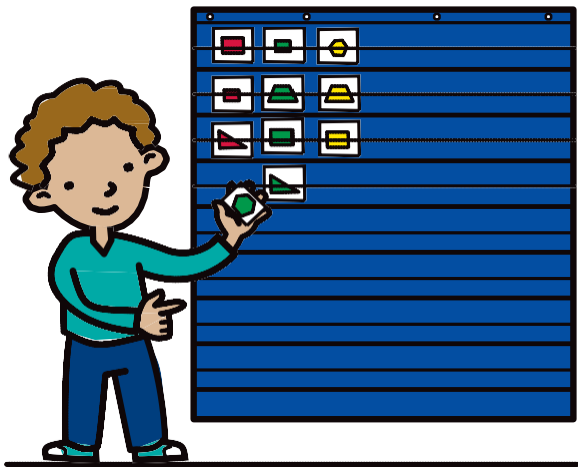
Fairfield Mathematics Grade 1

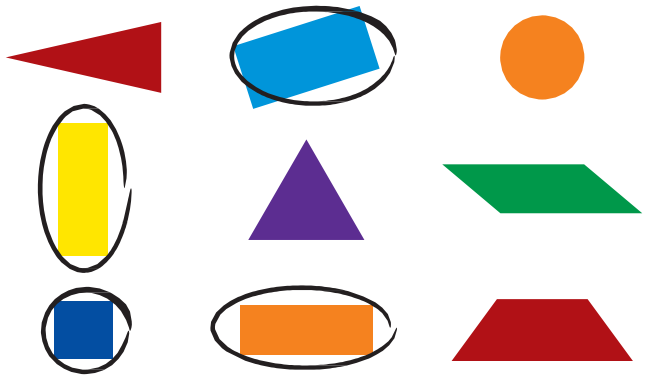
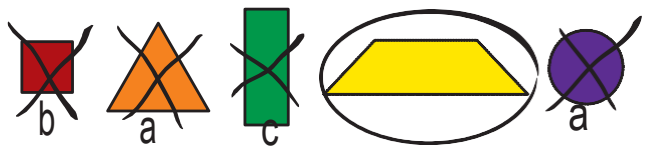
Unit 5: Geometry

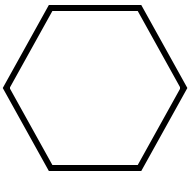
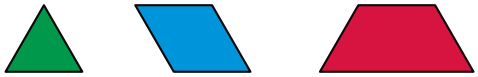
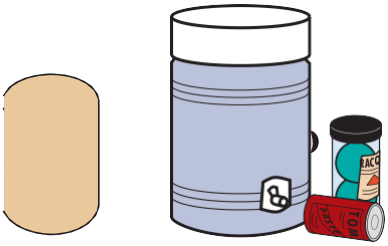
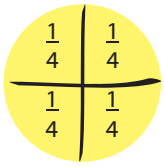


In this unit your child will:

- Identify, name, describe, and compare 2- and 3-D shapes based on their defining features
- Draw 2-D shapes and build 3-D shapes
- Use two or more geometric shapes to create a new composite shape or figure
- Split whole shapes into 2 or 4 equal parts called halves or fourths/quarters

Your child will solve problems like those shown below. Keep this sheet for reference when you're helping with homework.

Problem	Comments
Circle the rectangles below. 	In this unit students explore how shapes are defined by certain attributes. For example, a rectangle has 4 sides and 4 square corners (right angles), regardless of the length of its sides or its orientation. The square at the bottom left is a special kind of rectangle, one with 4 sides that are all the same length. The shape in the middle of the top row is also a rectangle, regardless of its tilted position, because it too has 4 sides and 4 square corners.
Use the clues to find the correct shape: a. The shape has 4 sides. b. The sides are different lengths. c. The shape does not have square corners. 	Students use clues to identify examples of 2-D shapes. After clue a, the student crossed out the shapes that did not have 4 sides. After clue b, he crossed out the square, because its sides are all the same length. After clue c, he circled the trapezoid because it is the only shape that matches all the clues. It has 4 sides; its sides are different lengths; and it does not have square corners.

Problem	Comments
Trace the pattern blocks to show two ways to fill in this hexagon.   triangle rhombus trapezoid	Students use pattern block shapes to create new composite shapes. There are many ways to fill in the hexagon using these pattern block shapes. When students consider those different ways, they are thinking about the relationships among the shapes. How do the angles of the different shapes fit together? How many triangles fit in a trapezoid?
Find things that are shaped like a cylinder. 	Geometric shapes surround our students. The homes they live in, the schools they attend, the toys they play with, and the foods they eat are three-dimensional shapes. Students go on a 3-D shape hunt looking for shapes in their environment.
Draw lines to show how 4 people can share a cake.  How can you cut a sandwich in 2 equal parts or halves? 	Students explore ways to split shapes into equal parts or shares. This sets a foundation for understanding fractions. In this unit, students use paper shapes to represent sharing a sandwich and a cake. First graders relate well to food and fractions since often their first experience with fractions is sharing a treat with a sibling or friend. They learn that there is often more than one way to split a shape into equal parts, as shown. Students learn to describe the parts as halves, fourths, and quarters and to read and write the fraction notation (½, ¼).

FREQUENTLY ASKED QUESTIONS ABOUT Unit 5

Q: I can't remember what so many of the geometry words mean. Where can I go for help?

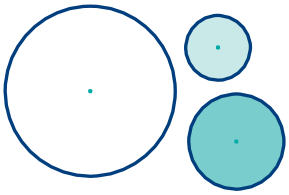
A: These geometry words let us name shapes and talk about them in precise ways. See the attached Geometry Vocabulary Terms for a refresher.

Q: My child calls 3-D objects by 2-D names. Why is this, and how can I help?

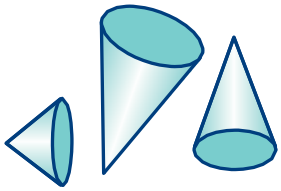
A: Children are generally taught the names of two-dimensional shapes early on in their preschool years. When looking at 3-D items, first graders are likely to talk about the faces of the objects, and will most likely refer to the sphere and cylinder as circles, the cube as a square, and so on. Help your child recognize the similarities and differences. For example, just as a square is a rectangle with equal side lengths, a cube is a rectangular prism with equal edge lengths. Learning the correct terms consistently both models the language of geometry accurately and avoids future misconceptions.

GEOMETRY VOCABULARY TERMS *page 1 of 2*

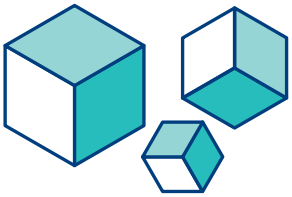
circle a two-dimensional (flat) shape made by drawing a curve that is always the same distance from a point called the center



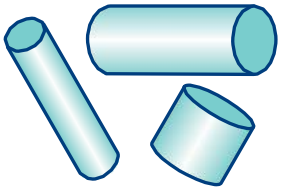
cone a three-dimensional shape (solid) with a circular or elliptical base and a curved surface that tapers to the vertex



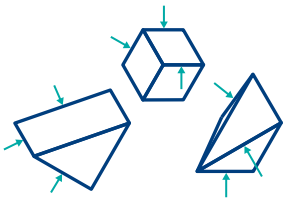
cube a three-dimensional shape (solid) whose 6 faces are all squares



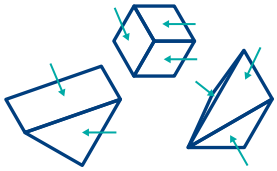
cylinder a three-dimensional shape (solid) with one curved surface and two congruent flat ends that are circular or elliptical



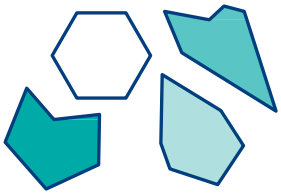
edge the line along which 2 faces of a three-dimensional shape (solid) meet



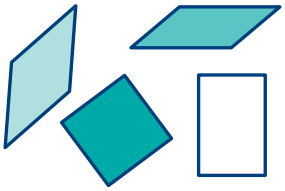
face a flat surface of a three-dimensional shape (solid)



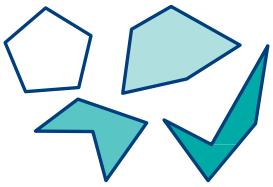
hexagon a two-dimensional (flat) shape with 6 sides



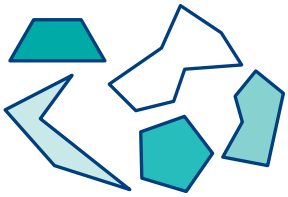
parallelogram a two-dimensional (flat) shape with 4 sides, with both pairs of opposite sides parallel



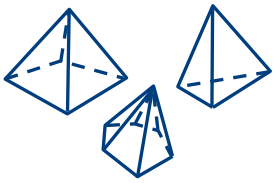
pentagon a two-dimensional (flat) shape with 5 sides



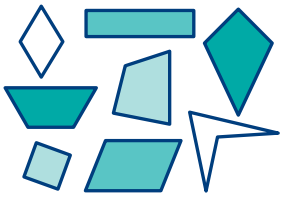
polygon a two-dimensional (flat) shape with 3 or more sides



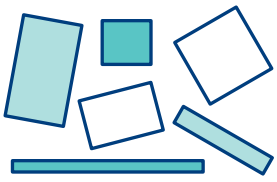
pyramid a three-dimensional shape (solid) that has a base with 3 or more sides, and has triangular faces that meet at a point



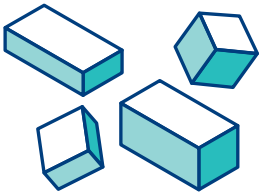
quadrilateral a two-dimensional (flat) shape with 4 sides



rectangle a two-dimensional (flat) shape with 2 pairs of parallel sides (4 sides total) and 4 right angles

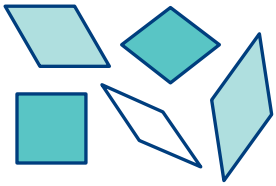


rectangular prism a three-dimensional shape (solid) whose 6 faces are all rectangles

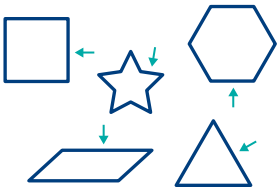


GEOMETRY VOCABULARY TERMS *page 2 of 2*

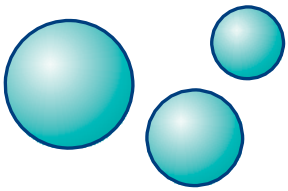
rhombus a two-dimensional (flat) shape with 4 congruent sides



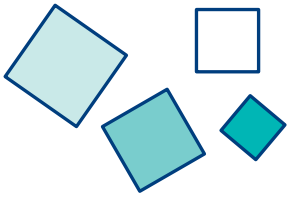
side a line segment that, with other line segments, form a two-dimensional (flat) shape



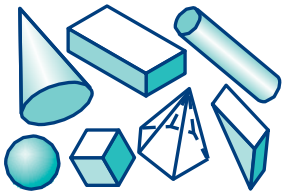
sphere a three-dimensional shape (solid) constructed so that every point of the surface is the same distance from a point called the center



square a two-dimensional (flat) shape with 4 congruent sides and 4 right angles

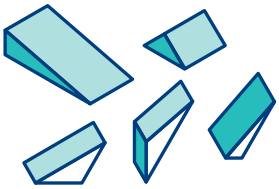


three-dimensional (3-D) shape a solid shape with depth, width, and height; a shape that has volume

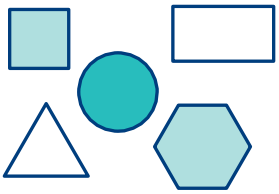


triangle a two-dimensional (flat) shape with 3 sides

triangular prism a three-dimensional shape (solid) with 2 triangular bases and 3 rectangular faces



two-dimensional (2-D) shape a flat shape with length and width; a shape that has area but not volume



vertex or corner the point at which the sides of a two-dimensional (flat) shape or the edges of a three-dimensional shape (solid) intersect