Mathematical Background

Here is an overview of the content students will learn in this unit.

Sorting and Classifying Shapes

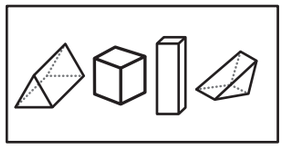
Use attributes to sort and classify three-dimensional shapes.

TEKS 3.6.A

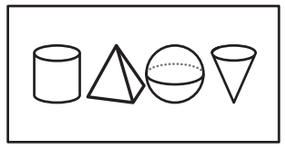
- Attributes such as vertices, edges, and faces can be used to describe, sort, and classify three-dimensional shapes.
  - » *Vertices* are where 2 edges meet at a point, *edges* are where 2 flat faces meet, and *faces* are the flat surfaces on a shape.
  - » The *base* can be used to name the shape.

The shapes in Sort Y are **prisms** and the shapes in Sort Z are non-prisms. Prisms have 2 identical polygon-shaped bases and faces that are flat. Most notably in this sort, pyramids are not prisms because they do not have 2 identical polygon-shaped bases.

Sort Y



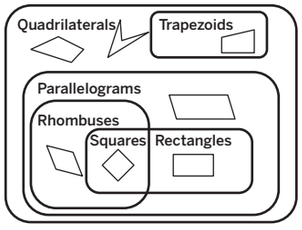
Sort Z



Use attributes to recognize examples of quadrilaterals.

TEKS 3.6.B

- The attributes of each quadrilateral determine the name of the shape.
  - » Quadrilaterals can be sorted and classified based on attributes.
  - » Quadrilaterals can be precisely named as rhombuses, **parallelograms**, **trapezoids**, rectangles, and squares using the attributes that define them.



parallelogram

- 4 straight sides
- 4 vertices
- 2 sets of opposite parallel sides

trapezoid

- 4 straight sides
- 4 vertices
- Only 1 set of parallel sides

rhombus

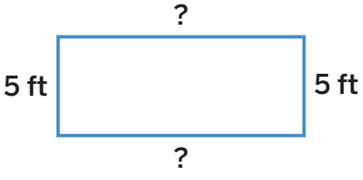
- 4 straight sides
- 4 vertices
- All sides are the same length

Determine the perimeter of polygons.

TEKS 3.7.B

- **Perimeter** is the total length of the boundary of a two-dimensional shape.
  - » The perimeter can be determined using addition or multiplication.
  - » Perimeter measures the distance around the shape while area measures the space inside a shape.
  - » Unknown side lengths can be determined by understanding the attributes of a polygon and applying reverse operations of addition and subtraction.

The perimeter of the rectangle is 24 feet.



$$2 \times 5 = 10$$
$$24 - 10 = 14$$
$$2 \times ? = 14$$
$$? = 7$$

Unit Investigation

Lesson 1 is the Unit Investigation. Students describe and sort two-dimensional shapes, or flat shapes, based on their attributes to build curiosity and apply their own knowledge in a variety of ways. Use the **Caregiver Connection** to help students continue to explore the math they will see in the unit.

Caregiver Connection

Students may enjoy sorting flat objects into categories at home, such as envelopes, paper plates, coasters, etc.

You can ask:

- "How did you decide to categorize these shapes together?"
- "What attributes (or characteristics) do they have in common?"