

Name \_\_\_\_\_

# Triangles

**Essential Question** How can you classify triangles?

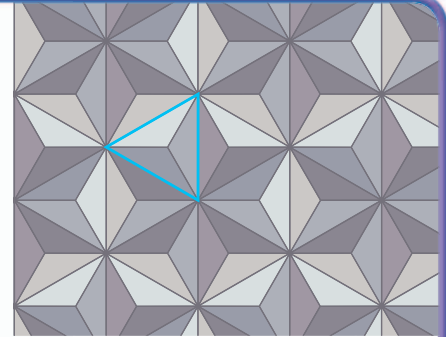


Geometry—  
5.G.3, 5.G.4

**MATHEMATICAL PRACTICES**  
MP.1, MP.4, MP.6, MP.7

## Unlock the Problem

If you look closely at Epcot Center’s Spaceship Earth building in Orlando, Florida, you may see a pattern of triangles. The triangle outlined in the pattern at the right has 3 congruent sides and 3 acute angles. What type of triangle is outlined?

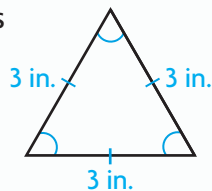


Complete the sentence that describes each type of triangle.

**Classify triangles by the lengths of their sides.**

An **equilateral triangle** has

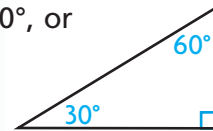
\_\_\_\_\_ congruent sides.



**Classify triangles by the measures of their angles.**

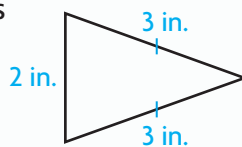
A **right triangle** has one  $90^\circ$ , or

\_\_\_\_\_ angle.



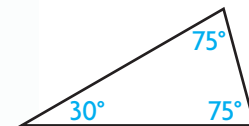
An **isosceles triangle** has

\_\_\_\_\_ congruent sides.



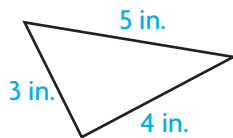
An **acute triangle** has 3

\_\_\_\_\_ angles.



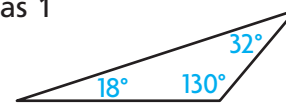
A **scalene triangle** has

\_\_\_\_\_ congruent sides.



An **obtuse triangle** has 1

\_\_\_\_\_ angle.



The type of triangle outlined in the pattern can be classified by the length of its sides as an \_\_\_\_\_ triangle.

The triangle can also be classified by the measures of its angles as an \_\_\_\_\_ triangle.

**Math Talk**

**Mathematical Practices**

Is an equilateral triangle also a regular polygon? **Explain.**

# Activity



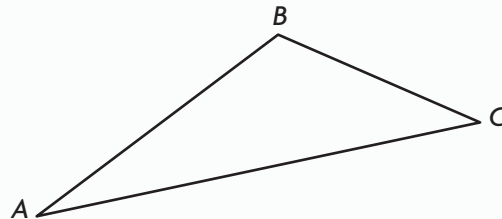
Classify triangle  $ABC$  by the lengths of its sides and by the measures of its angles.

**Materials** ■ centimeter ruler ■ protractor

**STEP 1** Measure the sides of the triangle using a centimeter ruler. Label each side with its length. Classify the triangle by the lengths of its sides.

**STEP 2** Measure the angles of the triangle using a protractor. Label each angle with its measure. Classify the triangle by the measures of its angles.

- What type of triangle has 3 sides of different lengths?  
\_\_\_\_\_
- What is an angle called that is greater than  $90^\circ$  and less than  $180^\circ$ ?  
\_\_\_\_\_



Triangle  $ABC$  is a \_\_\_\_\_ triangle.

**Try This!** Draw the type of triangle described by the lengths of its sides and by the measures of its angles.

Triangle by Length of Sides		
	Scalene	Isosceles
Triangle by Angle Measure	Acute	
	Obtuse	

*Think: I need to draw a triangle that is acute and scalene.*

**Math Talk**

**Mathematical Practices**

Can you draw a triangle that is right equilateral? **Explain.**

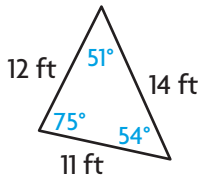
Name \_\_\_\_\_

## Share and Show



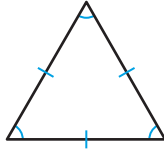
Classify each triangle. Write *isosceles*, *scalene*, or *equilateral*. Then write *acute*, *obtuse*, or *right*.

1.



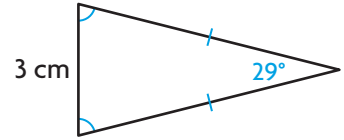
\_\_\_\_\_

2.



\_\_\_\_\_

3.



\_\_\_\_\_

## On Your Own

A triangle has sides with the lengths and angle measures given. Classify each triangle. Write *isosceles*, *scalene*, or *equilateral*. Then write *acute*, *obtuse*, or *right*.

4. **sides:** 3.5 cm, 6.2 cm, 3.5 cm

**angles:**  $27^\circ$ ,  $126^\circ$ ,  $27^\circ$

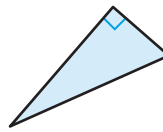
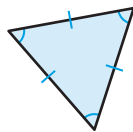
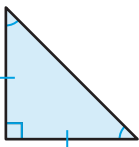
\_\_\_\_\_

5. **sides:** 2 in., 5 in., 3.8 in.

**angles:**  $43^\circ$ ,  $116^\circ$ ,  $21^\circ$

\_\_\_\_\_

6. Circle the figure that does not belong. Explain.



\_\_\_\_\_

7. **Go DEEPER** Draw 2 equilateral triangles that are congruent and share a side. What polygon is formed? Is it a regular polygon?

\_\_\_\_\_

**Math Talk**

**Mathematical Practices**

Can you tell that a triangle is obtuse, right, or acute without measuring the angles? **Explain.**