Chapter 8
Lesson 1

Identifying Angles

You will need

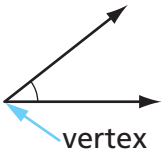
- Semaphore Signals (blackline master)
- a ruler

GOAL

Identify and classify angles.

angle

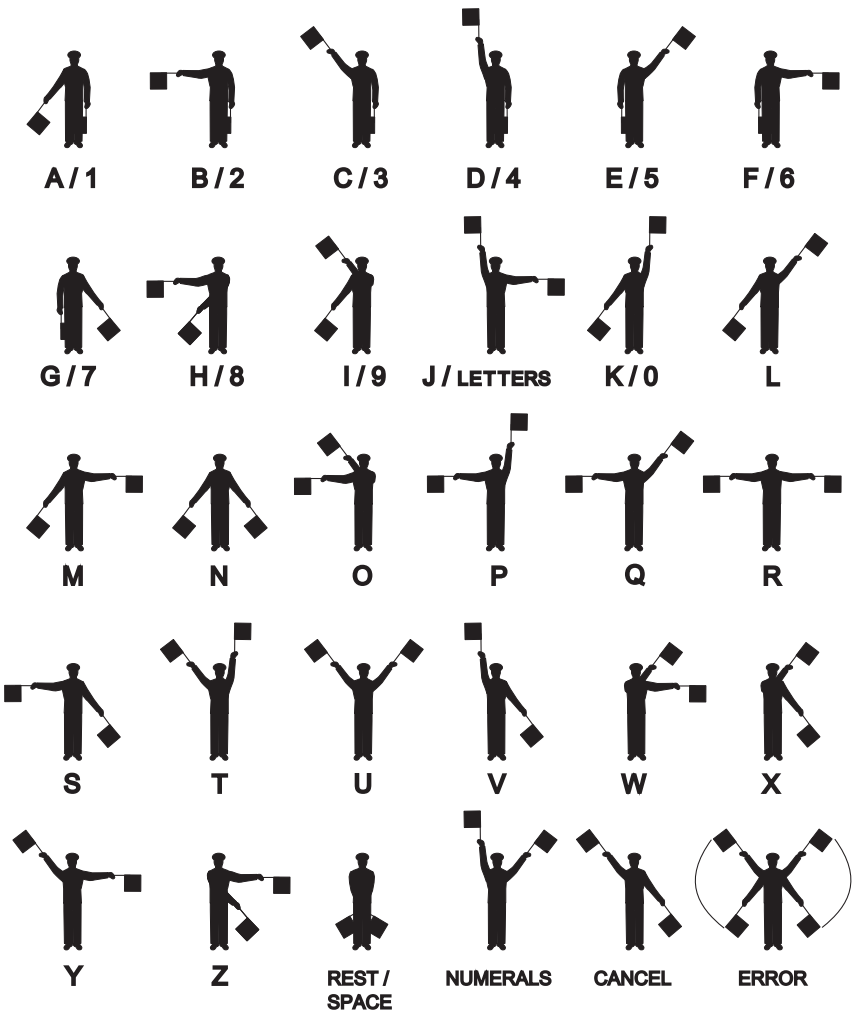
A figure formed by two **rays** that have the same endpoint; the endpoint is called the *vertex* of the angle.



ray

A part of a line, with one endpoint

Scouts use *semaphore* to communicate. The **angle** formed by the arms and flags represents a letter or a number.



What words can you make with signals that all have the same type of angle?

Walid's Solution

I need to find letters represented by the same type of angle and see what words I can make. I'll begin by comparing each semaphore signal with a **right angle**. I can do this by placing the corner of a piece of paper on each signal.

The letter B is represented by a right angle.

A. Which other letters are represented by a right angle?

B. What words can you make with letters that are represented by a right angle?

C. The letter A is represented by an **acute angle**. Which other letter signals are acute angles? How can you tell?

D. The letter C is represented by an **obtuse angle**. Which other letter signals are obtuse angles? How can you tell?

E. The letter D is represented by a **straight angle**. Which other letter signal is a straight angle? How can you tell?

F. Walid said the letter Q can be represented by an obtuse angle or a **reflex angle**. Do you agree? Explain.

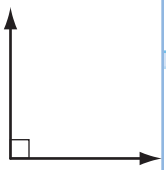
Reflecting

G. How does knowing what right angles and straight angles look like help you classify other angles? Use examples to explain.

H. Do you think all acute angles look the same? All obtuse angles? All right angles? All straight angles? Explain your thinking.

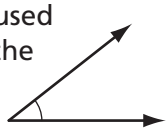
right angle

An angle that forms a square corner; a square symbol is used to show that an angle is a right angle.



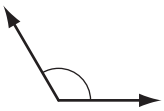
acute angle

An angle that is narrower than a right angle; an arc is used to show the angle's rotation.



obtuse angle

An angle that is wider than a right angle but narrower than a straight angle

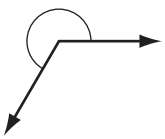


straight angle

An angle that forms a straight line

reflex angle

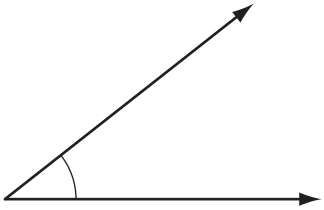
An angle that is wider than a straight angle



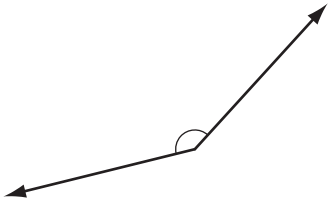
Checking

1. Is each angle acute, straight, right, obtuse, or reflex?

a)



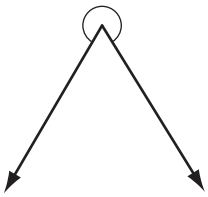
b)



Practising

2. Is each angle acute, straight, right, obtuse, or reflex?

a)



b)

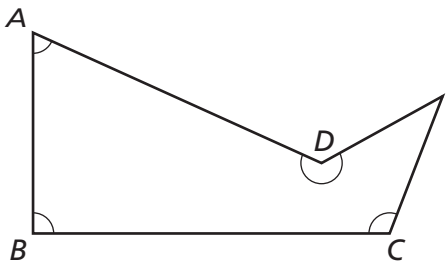
3. The World's Largest Ukrainian Easter Egg, or *pysanka*, is in Vegreville, Alberta. Sketch and name the different types of angles in the design.

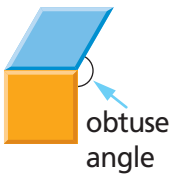
4. Luca opens a door all the way.

a) What types of angles are formed as the door opens? Sketch each type of angle, and name it.

b) What type of angle can the open door not form? Why?

5. Classify each angle in the shape below by comparing it with a right angle or a straight angle. Explain what you did.





6. Use pattern blocks to create each of the five types of angles. Trace and name each type of angle.

7. Find one example of each of the five types of angles in your classroom. Sketch and name each type of angle.

8. Name a time when the minute hand and hour hand on a clock would form each type of angle.

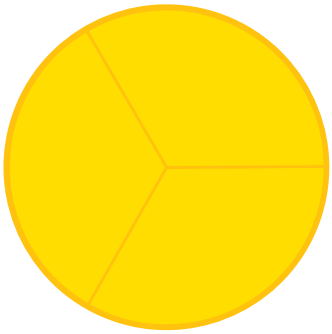
a) acute angle

b) right angle

c) straight angle

d) reflex angle

9. Sketch circles and divide them into sections to represent $\frac{1}{4}$, $\frac{1}{8}$, and $\frac{2}{3}$. What type of angle does each fraction form?



10. Brandon made spinners by dividing circles into three sections.

a) What type of angle is formed when the spinner has three equal sections? Explain your thinking.

b) Suppose Brandon used different types of angles in each spinner. Record the possible spinners in a chart like this.

Types of Angles

	acute	right	obtuse	straight
Spinner 1	×	×	✓	×
Spinner 2				

11. What types of angles do you see in these road signs?

a)

b)

c)

d)

12. Which type of angle do you think is the most common in the world? Explain your reasoning.