Angle Detectives

Measure each angle to find out where it belongs.

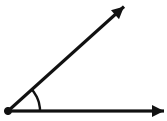
4.GM.2.1 "Measure angles in geometric figures and real-world objects with a protractor or angle ruler."

NAME _____ DATE _____

ACUTE ANGLE

Place the protractor's center on the angle's corner and line up one ray with 0°. An acute angle measures less than 90°.

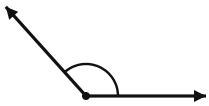
This angle measures 42°, so it is acute.



OBTUSE ANGLE

Read the protractor scale that starts at 0° on the ray you lined up. An obtuse angle measures more than 90° but less than 180°.

This angle measures 132°, so it is obtuse.



1 SORT

8 items

Measure each numbered angle with a protractor and circle ACUTE or OBTUSE, then pick one angle from each group and explain how its measurement proves your choice.

1.

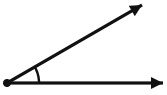


Figure 1

ACUTE OBTUSE

2.

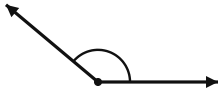


Figure 2

ACUTE OBTUSE

3.

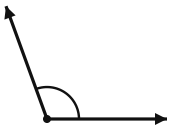


Figure 3

ACUTE **OBTUSE**

4.

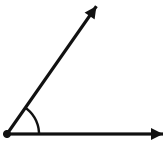


Figure 4

ACUTE **OBTUSE**

5.



Figure 5

ACUTE **OBTUSE**

6.

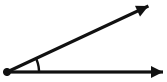


Figure 6

ACUTE **OBTUSE**

7.

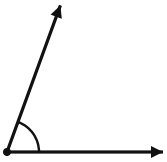


Figure 7

ACUTE **OBTUSE**

8.

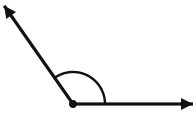


Figure 8

ACUTE **OBTUSE**

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Write one new angle measure for ACUTE and one for OBTUSE.

ACUTE _____

OBTUSE _____

CHALLENGE

A classmate measures an angle as 90°. Does it fit either group? Explain what kind of angle it is.

ANSWER KEY

Angle Detectives

GRADE 4 · 4.GM.2.1

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (angle 30°)	**ACUTE**	30° is less than 90°.
2	Figure 2 (angle 140°)	**OBTUSE**	140° is more than 90° and less than 180°.
3	Figure 3 (angle 110°)	**OBTUSE**	110° is more than 90° and less than 180°.
4	Figure 4 (angle 55°)	**ACUTE**	55° is less than 90°.
5	Figure 5 (angle 155°)	**OBTUSE**	155° is more than 90° and less than 180°.
6	Figure 6 (angle 25°)	**ACUTE**	25° is less than 90°.
7	Figure 7 (angle 70°)	**ACUTE**	70° is less than 90°.
8	Figure 8 (angle 125°)	**OBTUSE**	125° is more than 90° and less than 180°.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **ACUTE**: 50°
- **OBTUSE**: 130°

Challenge: It fits neither group because 90° is not less than or more than 90°. It is a right angle.

For Part 2, each explanation should name a figure, give its measured angle, and compare that measure with 90°. Accept small measurement differences caused by printing or protractor placement if the category is correct.