Angle Detectives

Sort angles by comparing them to a right angle.

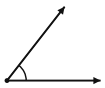
MA.4.GR.1.2 "Estimate angle measures. Using a protractor, measure angles in whole-number degrees and draw angles of specified measure in whole-number degrees. Demonstrate that angle measure is additive."

NAME _____ DATE _____

ACUTE ANGLE

An acute angle is smaller than a right angle. It measures more than 0° and less than 90°.

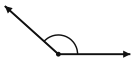
This angle measures 52°, so it is acute.



OBTUSE ANGLE

An obtuse angle is larger than a right angle. It measures more than 90° and less than 180°.

This angle measures 138°, so it is obtuse.



1 SORT

8 items

For each figure, circle ACUTE or OBTUSE, then choose two figures in Part 2, measure them with a protractor, and explain how you knew.

1.

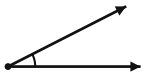


Figure 1

ACUTE OBTUSE

2.

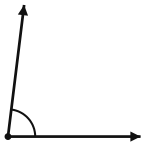


Figure 2

ACUTE OBTUSE

3.

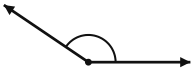


Figure 3

ACUTE OBTUSE

4.

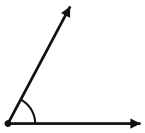


Figure 4

ACUTE OBTUSE

5.

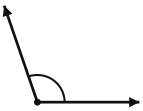


Figure 5

ACUTE OBTUSE

6.



Figure 6

ACUTE OBTUSE

7.

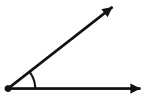


Figure 7

ACUTE OBTUSE

8.

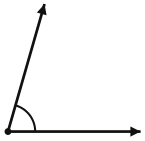


Figure 8

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 example of an acute angle and one new example of an obtuse angle. Include the measure of each angle.

ACUTE _____

OBTUSE _____

CHALLENGE

Draw an obtuse angle measuring 130°. Split it into two adjacent angles, and label both smaller angles so their measures add to 130°.

ANSWER KEY # Angle Detectives

GRADE 4 · MA.4.GR.1.2

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (angle 27°)	**ACUTE**	27° is less than 90°.
2	Figure 2 (angle 83°)	**ACUTE**	83° is less than 90°.
3	Figure 3 (angle 146°)	**OBTUSE**	146° is greater than 90° and less than 180°.
4	Figure 4 (angle 62°)	**ACUTE**	62° is less than 90°.
5	Figure 5 (angle 109°)	**OBTUSE**	109° is greater than 90° and less than 180°.
6	Figure 6 (angle 171°)	**OBTUSE**	171° is greater than 90° and less than 180°.
7	Figure 7 (angle 38°)	**ACUTE**	38° is less than 90°.
8	Figure 8 (angle 74°)	**ACUTE**	74° is less than 90°.

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**: A 44° angle is acute.
- **OBTUSE**: A 135° angle is obtuse.

Challenge: Draw a 130° angle with an interior ray that makes adjacent angles of 50° and 80°. 50° + 80° = 130°.

Sort answers: 1 ACUTE, 2 ACUTE, 3 OBTUSE, 4 ACUTE, 5 OBTUSE, 6 OBTUSE, 7 ACUTE, 8 ACUTE. For Part 2, accept explanations that compare each protractor measurement to 90°.