

Angle Detectives

Sort angles by how wide they open.

4.GSR.8.1 “Explore, investigate, and draw points, lines, line segments, rays, angles (right, acute, obtuse), perpendicular lines, parallel lines, and lines of symmetry. Identify these in two-dimensional figures.”

NAME _____

DATE _____

ACUTE ANGLES

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

The small angle between the hands of a clock at 1:00 is acute.

OBTUSE ANGLES

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

The smaller angle between the hands of a clock at 4:00 is obtuse.

1 SORT _____ 8 items

For Part 1, circle ACUTE or OBTUSE for each angle, then for Part 2, choose two items and explain how each angle's measure helped you decide.

- | | | |
|-----------------------------------|-----------------------------|------------------------------|
| 1. An angle measuring 18° | ☐ ACUTE | ☐ OBTUSE |
| 2. An angle measuring 89° | ☐ ACUTE | ☐ OBTUSE |
| 3. An angle measuring 121° | ☐ ACUTE | ☐ OBTUSE |
| 4. An angle measuring 47° | ☐ ACUTE | ☐ OBTUSE |
| 5. An angle measuring 175° | ☐ ACUTE | ☐ OBTUSE |
| 6. An angle measuring 96° | ☐ ACUTE | ☐ OBTUSE |
| 7. An angle measuring 143° | ☐ ACUTE | ☐ OBTUSE |
| 8. An angle measuring 62° | ☐ 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 acute angle measure and one new obtuse angle measure.

ACUTE _____

OBTUSE _____

CHALLENGE

Draw one acute angle and one obtuse angle that add to 180° , and label both measures.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	An angle measuring 18°	ACUTE	18° is less than 90° .
2	An angle measuring 89°	ACUTE	89° is less than 90° .
3	An angle measuring 121°	OBTUSE	121° is greater than 90° and less than 180° .
4	An angle measuring 47°	ACUTE	47° is less than 90° .
5	An angle measuring 175°	OBTUSE	175° is greater than 90° and less than 180° .
6	An angle measuring 96°	OBTUSE	96° is greater than 90° and less than 180° .
7	An angle measuring 143°	OBTUSE	143° is greater than 90° and less than 180° .
8	An angle measuring 62°	ACUTE	62° 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:** An angle measuring 25° .
- **OBTUSE:** An angle measuring 150° .

Challenge: Draw an angle labeled 65° and an angle labeled 115° .

For Part 2, accept explanations that compare each chosen measure with 90° . For Part 3, accept any acute measure from 1° to 89° and any obtuse measure from 91° to 179° .