Surface Detectives

Sort solids by the kinds of surfaces they have.

2.8.B "classify and sort three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes as special rectangular prisms), and triangular prisms, based on attributes using formal geometric language;"

NAME _____ DATE _____

HAS A CURVED SURFACE

This solid has at least one surface that is round, not flat.

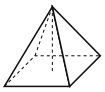
A hemisphere has a curved surface.



ONLY FLAT FACES

Every surface on this solid is a flat face. It has no curved surface.

A pyramid has only flat faces.



1 SORT

8 items

For Part 1, circle CURVED or FLATFACES for each figure, then for Part 2, choose two figures and explain which surfaces helped you sort them.

1.

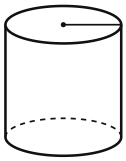


Figure 1

CURVED FLATFACES

2.

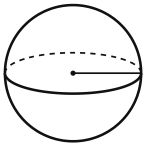


Figure 2

CURVED FLATFACES

3.

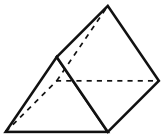


Figure 3

CURVED FLATFACES

4.

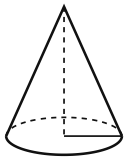


Figure 4

CURVED FLATFACES

5.

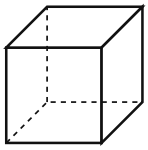


Figure 5

CURVED FLATFACES

6.

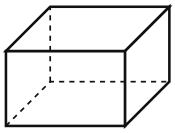


Figure 6

CURVED FLATFACES

7.

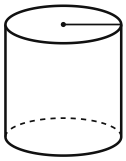


Figure 7

CURVED FLATFACES

8.

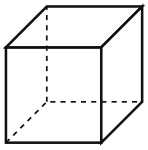


Figure 8

CURVED FLATFACES

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 solid example for CURVED and one new solid example for FLATFACES.

CURVED _____

FLATFACES _____

CHALLENGE

Draw a solid with a curved surface. Write its name and tell whether it also has any flat faces.

ANSWER KEY # Surface Detectives

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (cylinder)	**CURVED**	A cylinder has one curved surface and two flat circular faces.
2	Figure 2 (sphere)	**CURVED**	A sphere has one curved surface and no flat faces.
3	Figure 3 (triangular_prism)	**FLATFACES**	A triangular prism has only flat faces.
4	Figure 4 (cone)	**CURVED**	A cone has one curved surface and one flat circular face.
5	Figure 5 (cube)	**FLATFACES**	A cube is a rectangular prism with only flat square faces.
6	Figure 6 (rectangular_prism)	**FLATFACES**	A rectangular prism has only flat rectangular faces.
7	Figure 7 (cylinder)	**CURVED**	A cylinder has a curved surface.
8	Figure 8 (cube)	**FLATFACES**	A cube has only flat faces.

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)

- **CURVED**: A cone.
- **FLATFACES**: A triangular prism.

Challenge: I drew a cylinder. It has a curved surface and two flat faces.

Part 2 explanations should name a curved surface or flat faces and match the selected figures. Accept other correct solid examples in Part 3 and the challenge.