

Surface Sleuth Sort

Sort solids by the kinds of surfaces they have.

MA.5.GR.1.2 "Identify and classify three-dimensional figures into categories based on their defining attributes. Figures are limited to right pyramids, right prisms, right circular cylinders, right circular cones and spheres."

NAME _____

DATE _____

ONLY FLAT FACES

These figures have flat faces only. They do not have any curved surfaces.

A cube belongs here. Every face is flat.

HAS A CURVED SURFACE

These figures have at least one curved surface. Some may also have flat circular bases.

A round bead belongs here. Its surface is curved all around.

1 SORT _____ 8 items

Circle the category for each figure, then choose two items and explain which faces or surfaces prove each choice.

- | | | |
|--------------------------------|----------------------------------|------------------------------|
| 1. 1. right rectangular prism | ☐ FLAT FACES | ☐ CURVED |
| 2. 2. sphere | ☐ FLAT FACES | ☐ CURVED |
| 3. 3. right circular cone | ☐ FLAT FACES | ☐ CURVED |
| 4. 4. right triangular pyramid | ☐ FLAT FACES | ☐ CURVED |
| 5. 5. right pentagonal prism | ☐ FLAT FACES | ☐ CURVED |
| 6. 6. right circular cylinder | ☐ FLAT FACES | ☐ CURVED |
| 7. 7. right square pyramid | ☐ FLAT FACES | ☐ CURVED |
| 8. 8. right triangular prism | ☐ FLAT FACES | ☐ CURVED |

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 for FLAT FACES and one new example for CURVED.

FLAT FACES _____

CURVED _____

CHALLENGE

A right octagonal pyramid has one octagonal base and eight triangular faces. Which category does it belong in? Explain.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	1. right rectangular prism	FLAT FACES	A right rectangular prism has only flat faces.
2	2. sphere	CURVED	A sphere has one curved surface and no flat faces.
3	3. right circular cone	CURVED	A right circular cone has one curved surface and one flat circular base.
4	4. right triangular pyramid	FLAT FACES	A right triangular pyramid has a flat triangular base and flat triangular faces.
5	5. right pentagonal prism	FLAT FACES	A right pentagonal prism has two flat pentagonal bases and flat side faces.
6	6. right circular cylinder	CURVED	A right circular cylinder has one curved surface and two flat circular bases.
7	7. right square pyramid	FLAT FACES	A right square pyramid has a flat square base and flat triangular faces.
8	8. right triangular prism	FLAT FACES	A right triangular prism has two flat triangular bases and flat rectangular side 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)

- **FLAT FACES:** A right hexagonal prism has only flat faces.
- **CURVED:** A globe, modeled as a sphere, has a curved surface.

Challenge: FLAT FACES. It has an octagonal base and eight triangular faces, and all of them are flat.

For Part 2, students should name flat faces or curved surfaces and connect that attribute to the category. Accept accurate new examples that match the stated category.