

Space Takers

Sort figures that have volume from figures that are flat.

NY-5.MD.3 "Recognize volume as an attribute of solid figures and understand concepts of volume measurement."

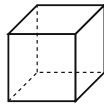
NAME _____

DATE _____

SOLID FIGURE

A solid figure has length, width, and height. It takes up space, so its volume can be measured in cubic units.

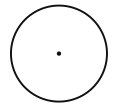
A cube takes up space, so it has volume.



FLAT FIGURE

A flat figure has only length and width. It does not take up space, so it does not have volume.

A circle is flat and does not have volume.



1 SORT _____ 8 items

Part 1 SORT: Circle SOLID or FLAT for each figure; Part 2 PROVE IT: pick two figures and explain how you knew where each belongs.

1.

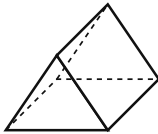


Figure 1

SOLID

FLAT

2.

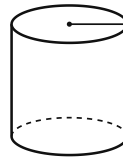


Figure 2

SOLID

FLAT

3.

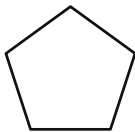


Figure 3

SOLID

FLAT

4.

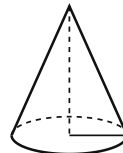


Figure 4

SOLID

FLAT

5.



Figure 5

SOLID

FLAT

6.

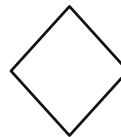


Figure 6

SOLID

FLAT

7.

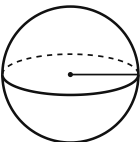


Figure 7

SOLID

FLAT

8.

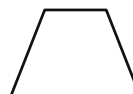


Figure 8

SOLID

FLAT

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

Part 3 MAKE YOUR OWN: Write one new example of a solid figure and one new example of a flat figure.

SOLID

FLAT

CHALLENGE

A rectangular prism is 3 unit cubes long, 2 unit cubes wide, and 4 unit cubes high. How many unit cubes fill it? Write its volume.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (triangular_prism)	SOLID	A triangular prism is a solid figure that takes up space.
2	Figure 2 (cylinder)	SOLID	A cylinder is a solid figure that takes up space.
3	Figure 3 (pentagon)	FLAT	A pentagon is a flat, two-dimensional figure.
4	Figure 4 (cone)	SOLID	A cone is a solid figure that takes up space.
5	Figure 5 (rectangle)	FLAT	A rectangle is a flat, two-dimensional figure.
6	Figure 6 (rhombus)	FLAT	A rhombus is a flat, two-dimensional figure.
7	Figure 7 (sphere)	SOLID	A sphere is a solid figure that takes up space.
8	Figure 8 (trapezoid)	FLAT	A trapezoid is a flat, two-dimensional figure.

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)

- **SOLID:** A pyramid is a solid figure.
- **FLAT:** An octagon is a flat figure.

Challenge: $3 \times 2 \times 4 = 24$, so the volume is 24 cubic units.

Sort key: 1 SOLID, 2 SOLID, 3 FLAT, 4 SOLID, 5 FLAT, 6 FLAT, 7 SOLID, 8 FLAT. In Part 2, students should state that solids take up space and have length, width, and height, while flat figures do not.