Space Takers

Sort figures by whether they have volume.

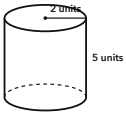
CCSS.Math.Content.5.MD.C.3 "Recognize volume as an attribute of solid figures and understand concepts of volume measurement."

NAME _____ DATE _____

HAS VOLUME

A solid figure takes up space. You can measure how many cubic units fill it.

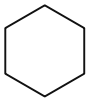
A cylinder has volume because it is a solid that takes up space.



NO VOLUME

A flat shape has no thickness. Cubic units cannot fill it.

A hexagon is flat, so it has no volume.



1 SORT

8 items

For Part 1, circle VOLUME or FLAT for each figure; for Part 2, choose two item numbers and explain how you knew each choice.

1.

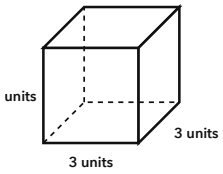


Figure 1

VOLUME FLAT

2.

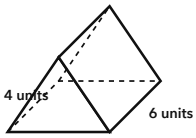


Figure 2

VOLUME FLAT

3.

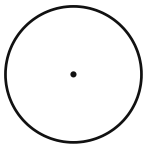


Figure 3

VOLUME FLAT

4.

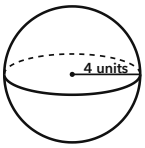


Figure 4

VOLUME FLAT

5.

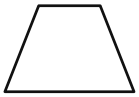


Figure 5

VOLUME FLAT

6.

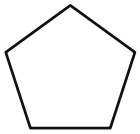


Figure 6

VOLUME FLAT

7.

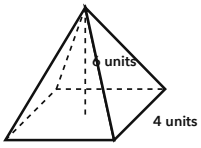


Figure 7

VOLUME FLAT

8.

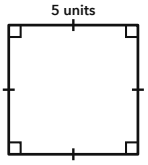


Figure 8

VOLUME 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

For Part 3, write one new example that has volume and one new example that is flat.

VOLUME _____

FLAT _____

CHALLENGE

Draw a solid made of 8 unit cubes. Label it VOLUME, then write one sentence telling why it is not flat.

ANSWER KEY # Space Takers

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (cube)	**VOLUME**	A cube is a solid figure that takes up space.
2	Figure 2 (triangular_prism)	**VOLUME**	A triangular prism is a solid figure that takes up space.
3	Figure 3 (circle)	**FLAT**	A circle is a flat, two-dimensional shape with no thickness.
4	Figure 4 (sphere)	**VOLUME**	A sphere is a solid figure that takes up space.
5	Figure 5 (trapezoid)	**FLAT**	A trapezoid is a flat, two-dimensional shape with no thickness.
6	Figure 6 (pentagon)	**FLAT**	A pentagon is a flat, two-dimensional shape with no thickness.
7	Figure 7 (pyramid)	**VOLUME**	A pyramid is a solid figure that takes up space.
8	Figure 8 (square)	**FLAT**	A square is a flat, two-dimensional shape with no thickness.

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)

- **VOLUME**: Has volume: A cone is a solid that takes up space, so it has volume.
- **FLAT**: A rectangle is flat, so it has no volume.

Challenge: Draw a 2 by 2 by 2 cube of unit cubes and label it VOLUME. It is not flat because 8 unit cubes can fill it, so it takes up space.

Part 2 explanations should mention that solid figures take up space and can be filled with cubic units, or that flat shapes have no thickness. Accept different correctly named examples in Part 3.