How Much Space Is Inside?

Understanding volume of solid figures

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Vote: Which Is Trickiest to Pack?

Which box would be hardest to fit in a truck?

- **A** Tall thin box
- **B** Short wide flat box
- **C** Cube-shaped box

Vote with your hands, then explain why.

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DID YOU KNOW?

A 10 cm cube holds 1,000 1-cm cubes.

That same space is called 1 liter.



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BIG IDEA

Volume is how much space a solid takes up.



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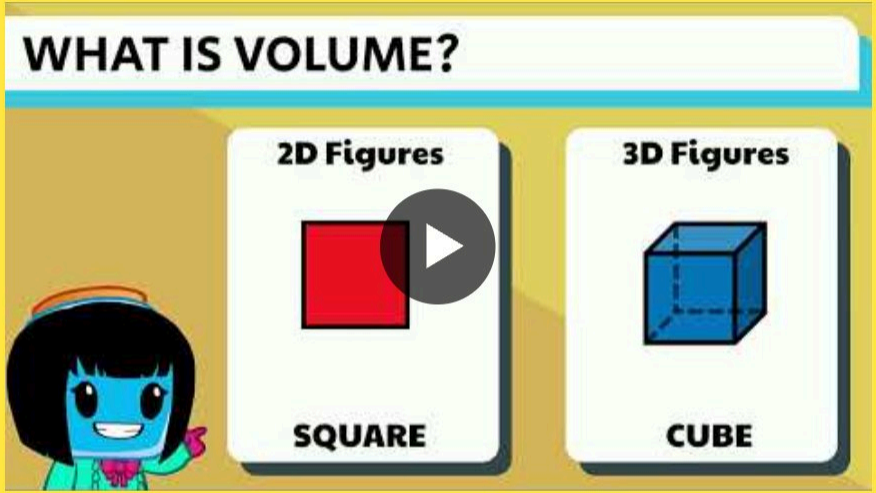
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Think, pair, share

How is filling a box different from wrapping it?

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Volume Is an Attribute



▶ 0:00 – 3:02

- Watch for: what counts as volume
- Watch for: why flat shapes have none

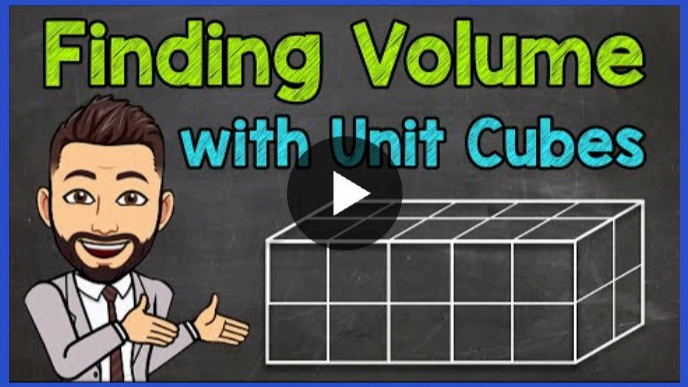
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How to Measure Volume

1. Pick one unit cube.
2. Fill with no gaps.
3. Make no overlaps.
4. Count cubes for volume.

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Counting Unit Cubes



▶ 0:00 – 5:00

- Watch how cubes fill layers
- Watch how you count them all

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Your task

Build two small solids and compare their volume.

1. 1. Make two shapes from 12 cubes each.
2. 2. Count cubes to check volume.
3. 3. Decide: more space, or tie?

15 min

In pairs

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Key words

volume

how much space inside a solid

solid figure

3D shape with length, width, height

unit cube

one small block used for measuring space

cubic centimeter

space taken up by a block 1 cm on each side

capacity

the most a container can hold



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Quick quiz

1. Volume, area, or perimeter: filling a toy chest?
2. What unit do we use for volume?
3. A shape uses 8 cubes. What is its volume?

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