WALT define volume.

WILF:

- Understand what volume is a measurement of.
- Know what a cubed measurement is and when to use it (3).
- Estimate volume.
- Use problem solving language.

BBC

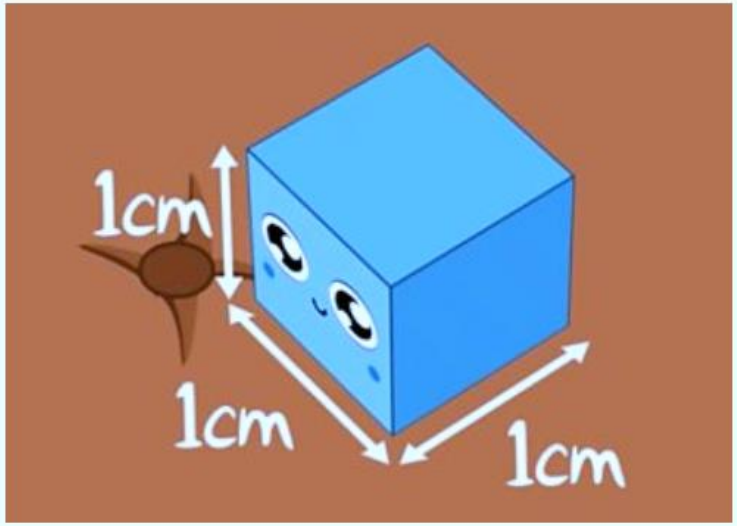
Volume

Volume is the amount of space a 3D shape takes up.

A cubic cm block takes up 1 cubic cm. This is written as 1 cm^3.

You can work out the volume of a shape by multiplying **height × width × depth.**

If the shape is made of cubic cm blocks, you can count the cubes to find the shape's volume.



Click on the image below, then watch the first 2 minutes of the video to find out how to find the volume of a shape.

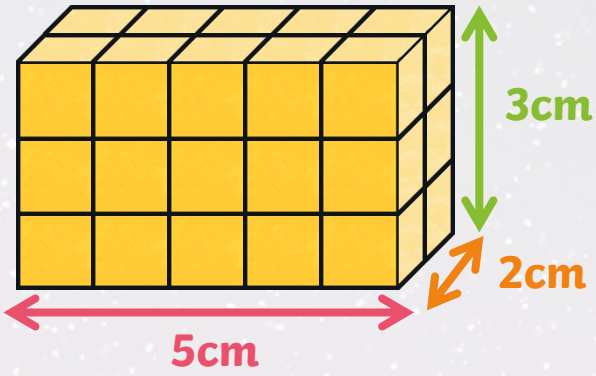
Corbettmaths primary

Remember: ^{3} = cubed, which means the number is multiplied by itself, then again.
Example: $5^3 = 5 \times 5 \times 5$
So: $5 \times 5 = 25$
$25 \times 5 = 125$

Added slide.

What Is Volume?

Volume is how we measure the amount of space something takes up.
This shape is made of $1cm^3$ blocks:



How long is it?	5cm
How wide is it?	2cm
How tall is it?	3cm
What is its volume?	$30cm^3$

This is 30 of the 1cm cubes, which each have a volume of $1cm^3$

Imagine stacking them into this cuboid. That's volume!

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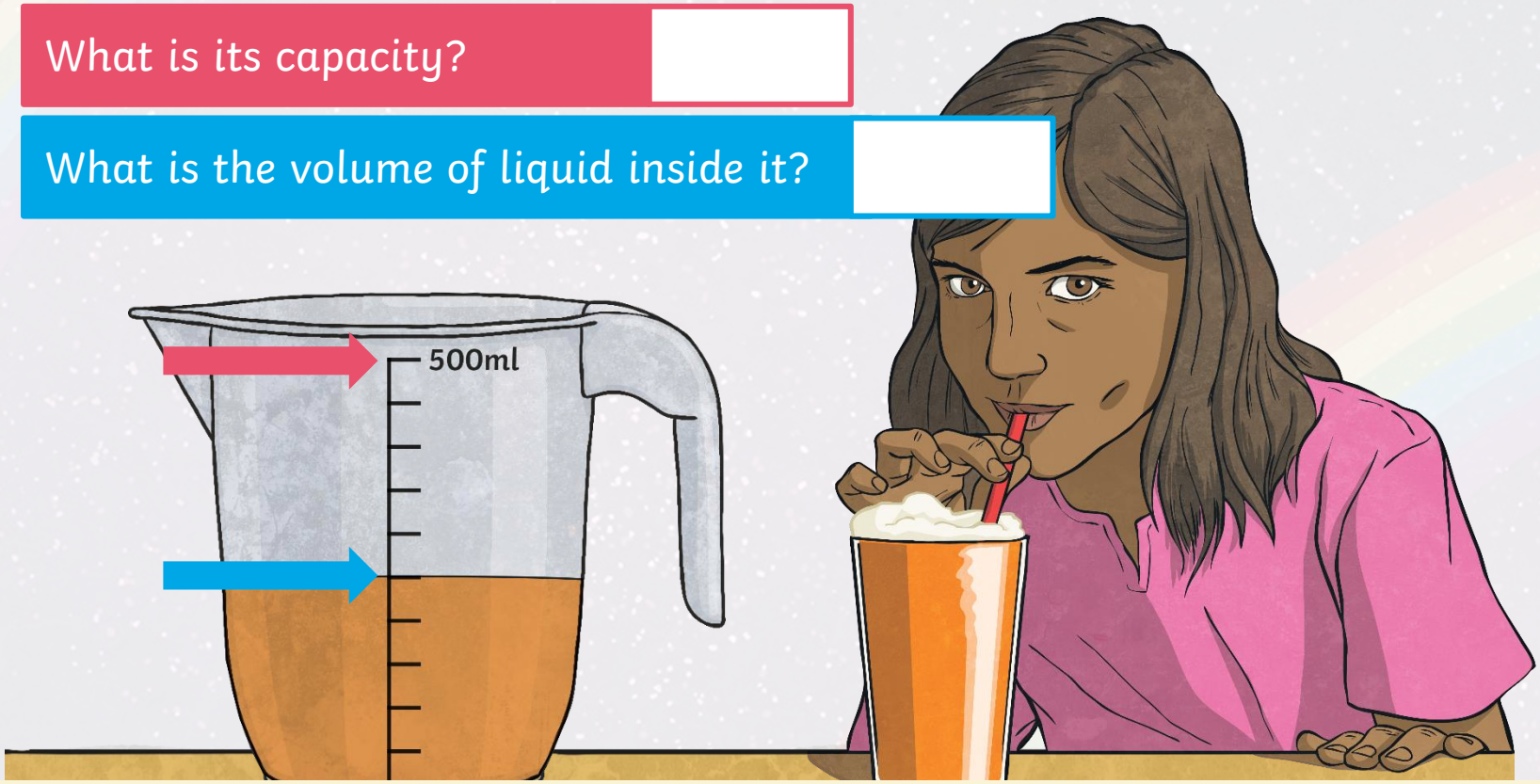
What Is Volume?

We measure the amount a container will hold as its capacity.

Look at this jug and use your knowledge of what the different lines represent to help you.

What is its capacity?

What is the volume of liquid inside it?



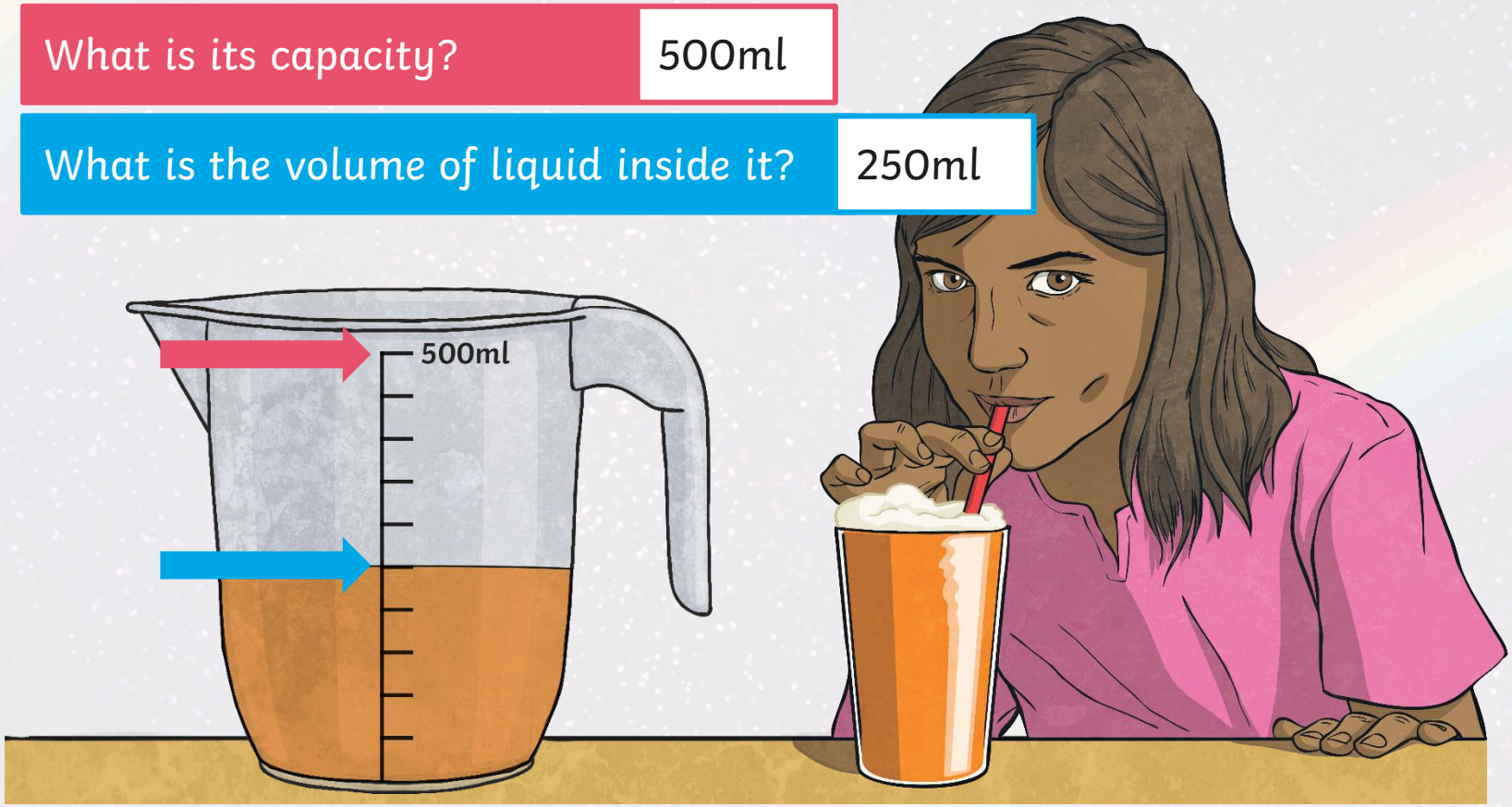
Pssst: Capacity is the maximum amount the container can hold.
Try recreating this image with a real jug and water at home to measure if you are confused.

E

What Is Volume?

We measure the amount a container will hold as its capacity.
Look at this jug:

What is its capacity?	500ml
What is the volume of liquid inside it?	250ml

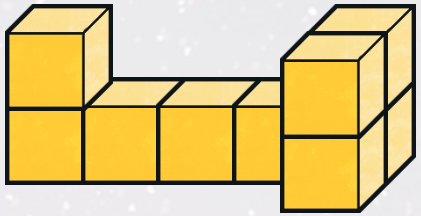


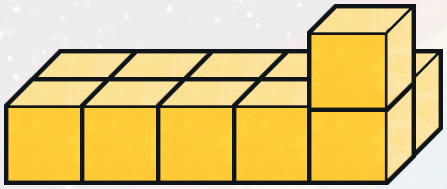
What Is Volume?

Which volume matches each shape?

Hint: each cube is $1cm^3$

$11cm^3$





$9cm^3$

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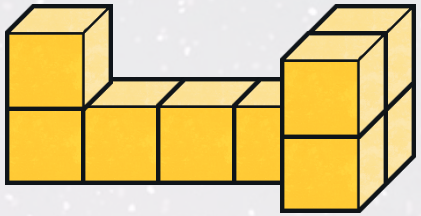
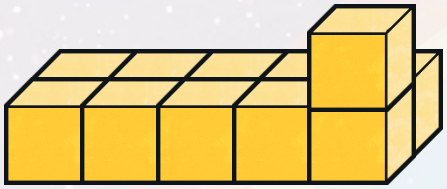
What Is Volume?

Which volume matches each shape?

$9cm^3$



$11cm^3$



Because we know that each cube is $1cm^3$, if the shape is odd, we can simply count the cubes to find the volume. If you didn't get this, try counting the cubes now.

What Is Volume?

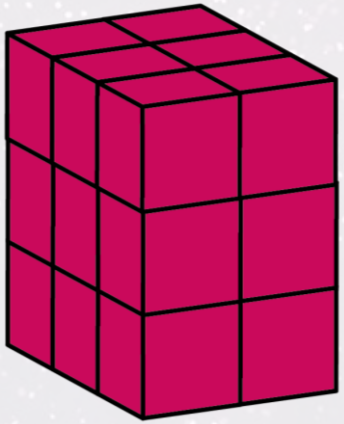
What different shapes can I make with a volume of $18cm^3$ which is at least 3cm tall?

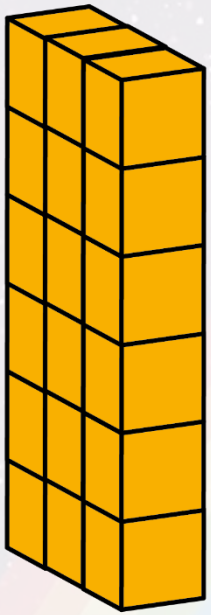
Try drawing some rough shapes that could fit this by arranging cubes. Remember, each cube is 1 cm^3

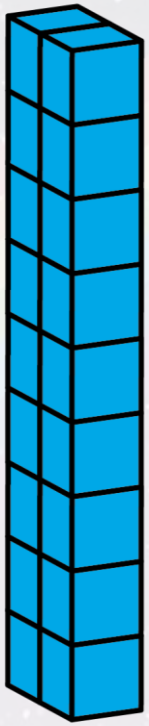
What Is Volume?

What different shapes can I make with a volume of $18cm^3$ which is at least 3cm tall?

Here are some examples. As long as you included 18 cubes and it was at least 3 cubes tall, you would be correct.

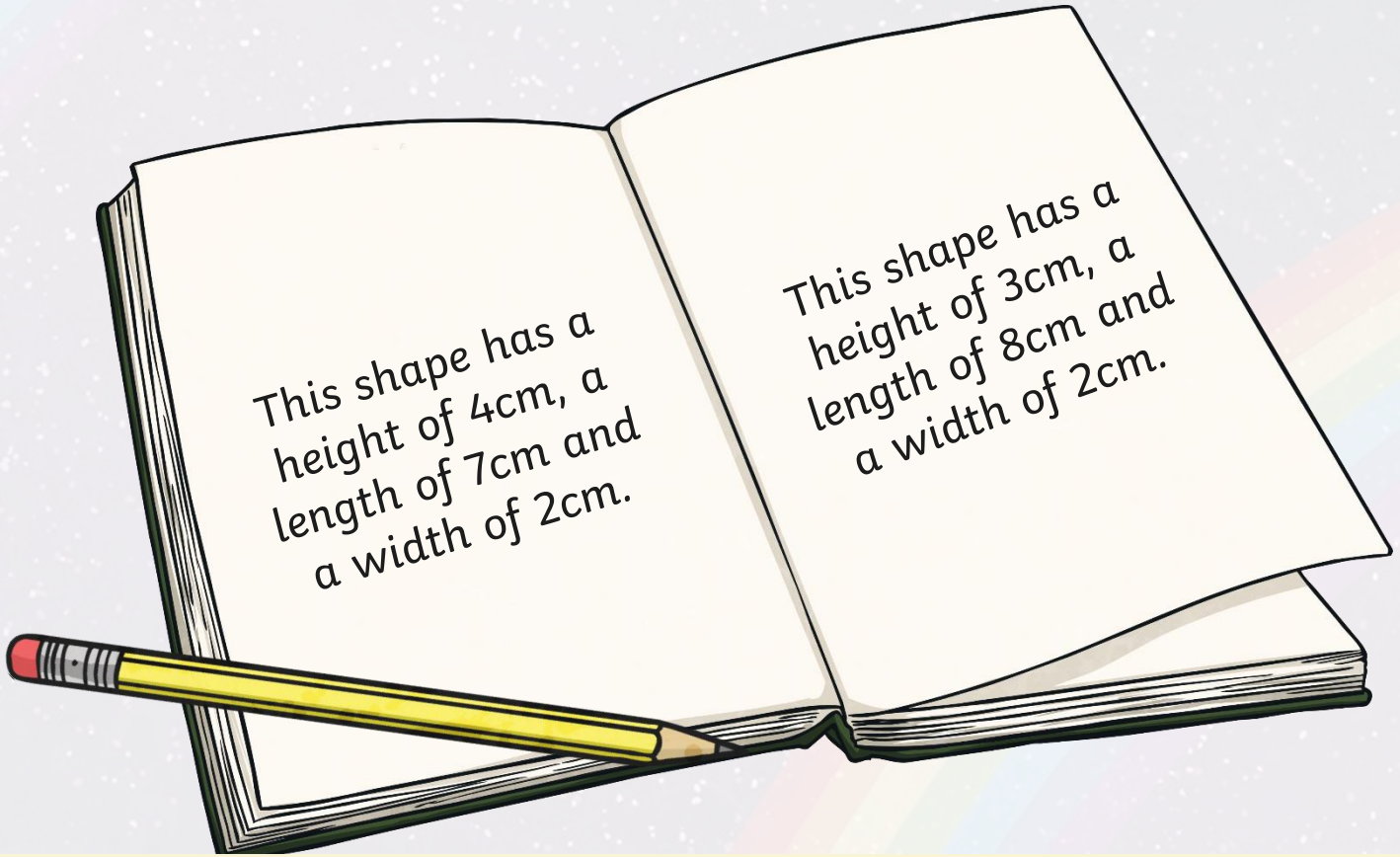






What Is Volume?

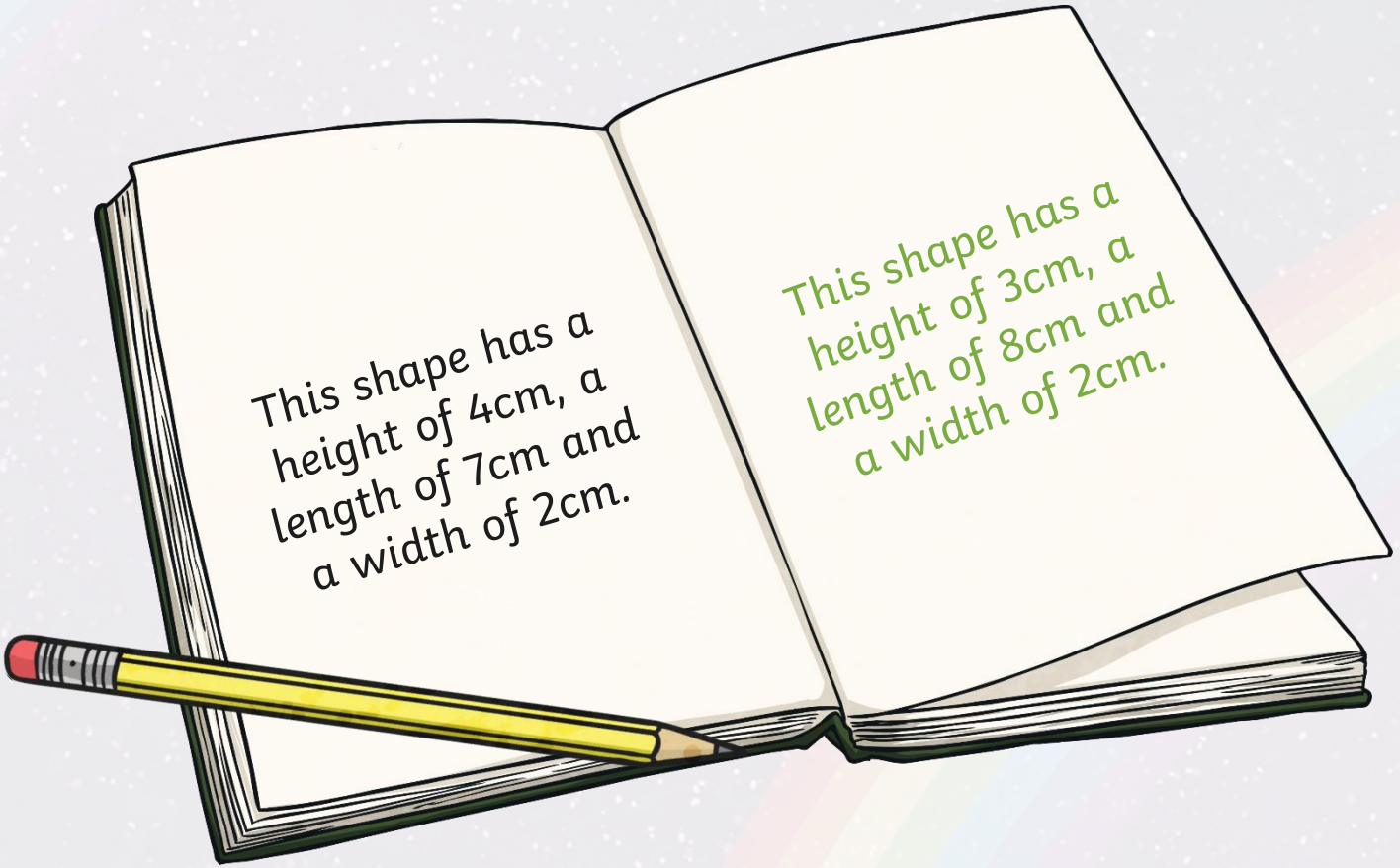
Which shape described here has the smallest volume?



If you need to, you can draw the shapes out to help you (or build them if you have cubes or Lego squares). Remember: each square is $1cm^3$

What Is Volume?

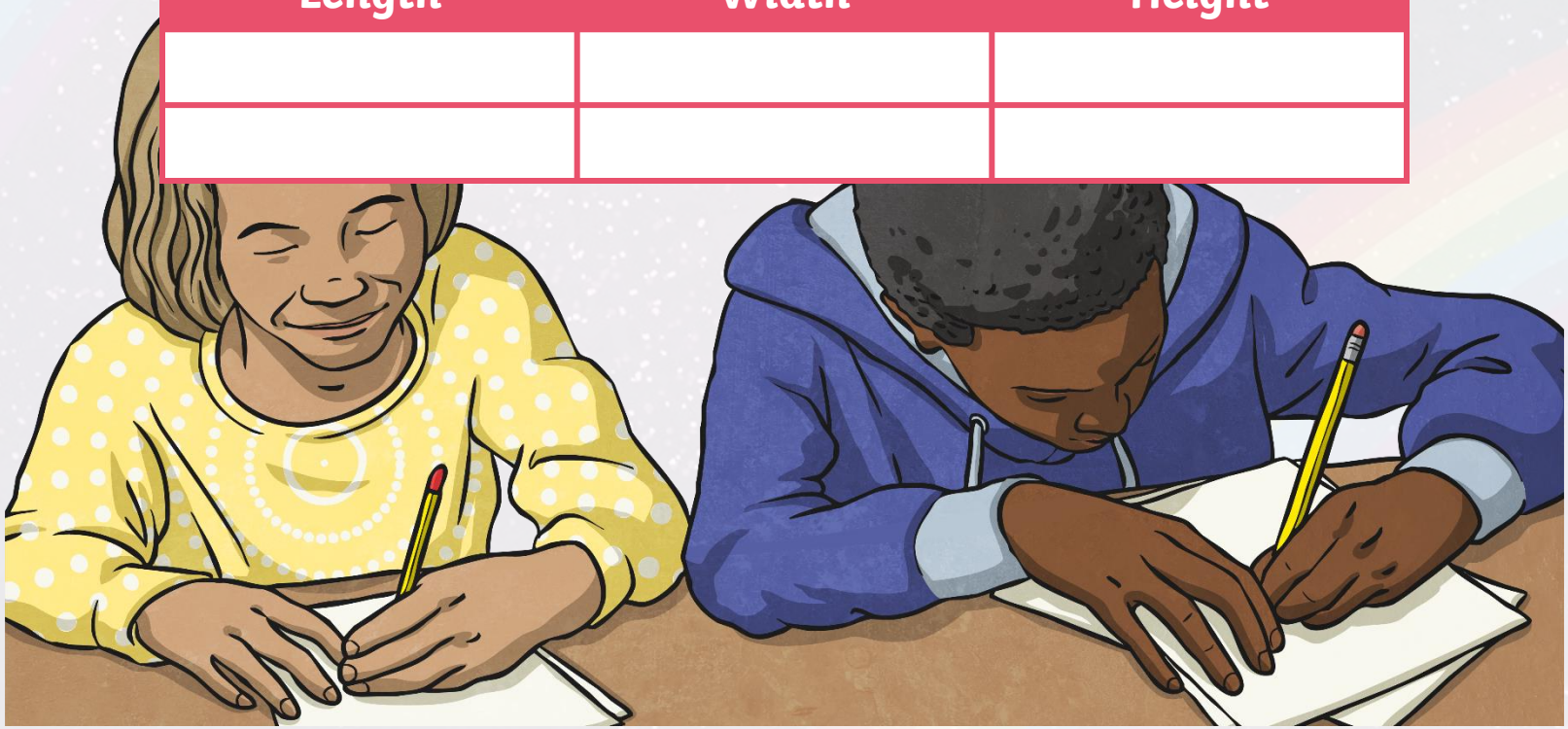
Which shape described here has the smallest volume?



What Is Volume?

What could the possible measurements be of a cuboid with a volume of $22cm^3$?

Length	Width	Height

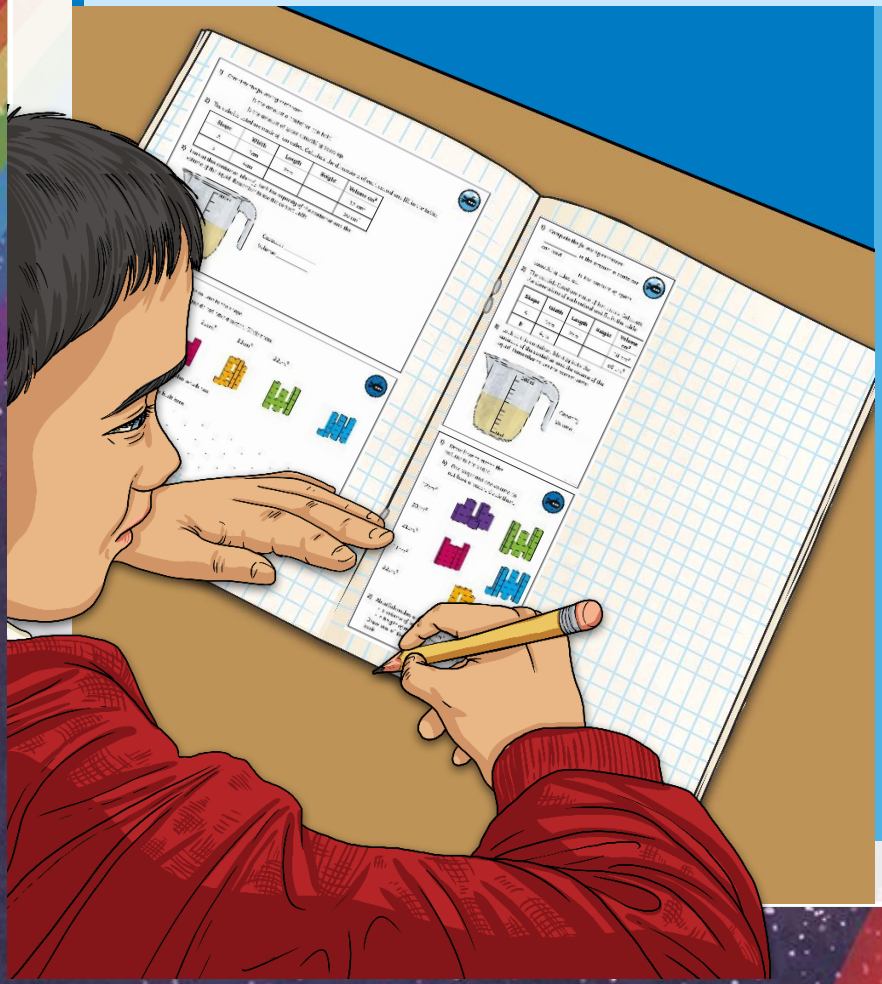


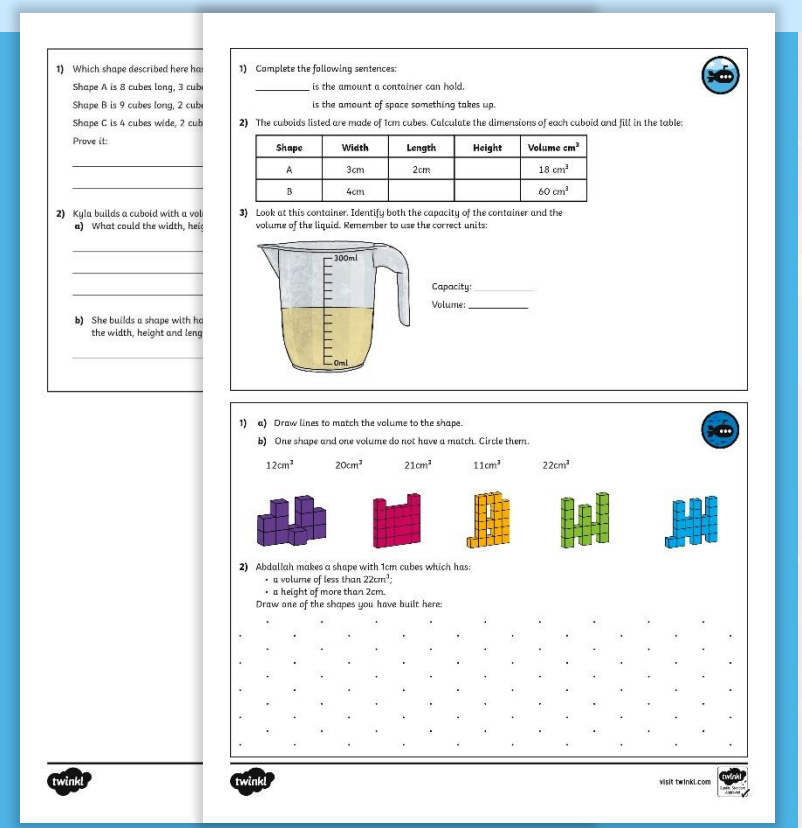
What Is Volume?

What could the possible measurements be of a cuboid with a volume of $22cm^3$?

Length	Width	Height
22cm	1cm	1cm
11cm	2cm	1cm

Now have a go at today's activity. Please challenge yourself with the sheet you choose. If you start and it is not challenging, move to the next sheet.





1) Which shape described here has
Shape A is 8 cubes long, 3 cube
Shape B is 9 cubes long, 2 cube
Shape C is 4 cubes wide, 2 cub
Prove it:

2) Kyla builds a cuboid with a vol
a) What could the width, heig

b) She builds a shape with ho
the width, height and leng

twinkl

1) Complete the following sentences:
_____ is the amount a container can hold.
is the amount of space something takes up.

2) The cuboids listed are made of 1cm cubes. Calculate the dimensions of each cuboid and fill in the table:

Shape	Width	Length	Height	Volume cm^3
A	3cm	2cm		18 cm^3
B	4cm			60 cm^3

3) Look at this container. Identify both the capacity of the container and the volume of the liquid. Remember to use the correct units:

300ml
0ml

Capacity: _____
Volume: _____

1) a) Draw lines to match the volume to the shape.
b) One shape and one volume do not have a match. Circle them.

12cm^3 20cm^3 21cm^3 11cm^3 22cm^3

2) Abdallah makes a shape with 1cm cubes which has:
- a volume of less than 22cm^3;
- a height of more than 2cm.

Draw one of the shapes you have built here:

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