

Diving into Mastery



What Is Volume?

twinkl

Aim

- Estimate volume.

What Is Volume?

Diving



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



What Is Volume?

Diving



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?

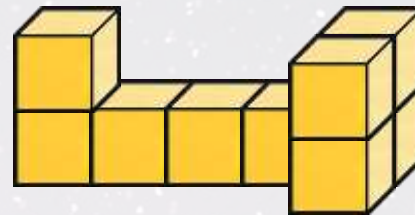
250ml





Which volume matches each shape?

9cm^3

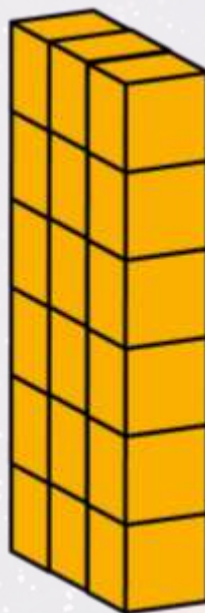
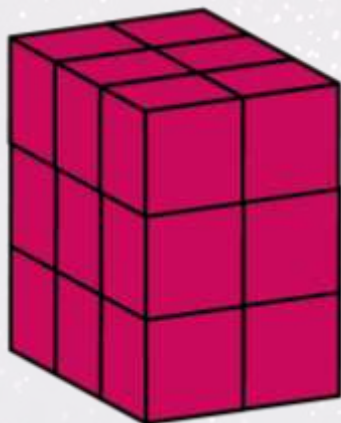


11cm^3



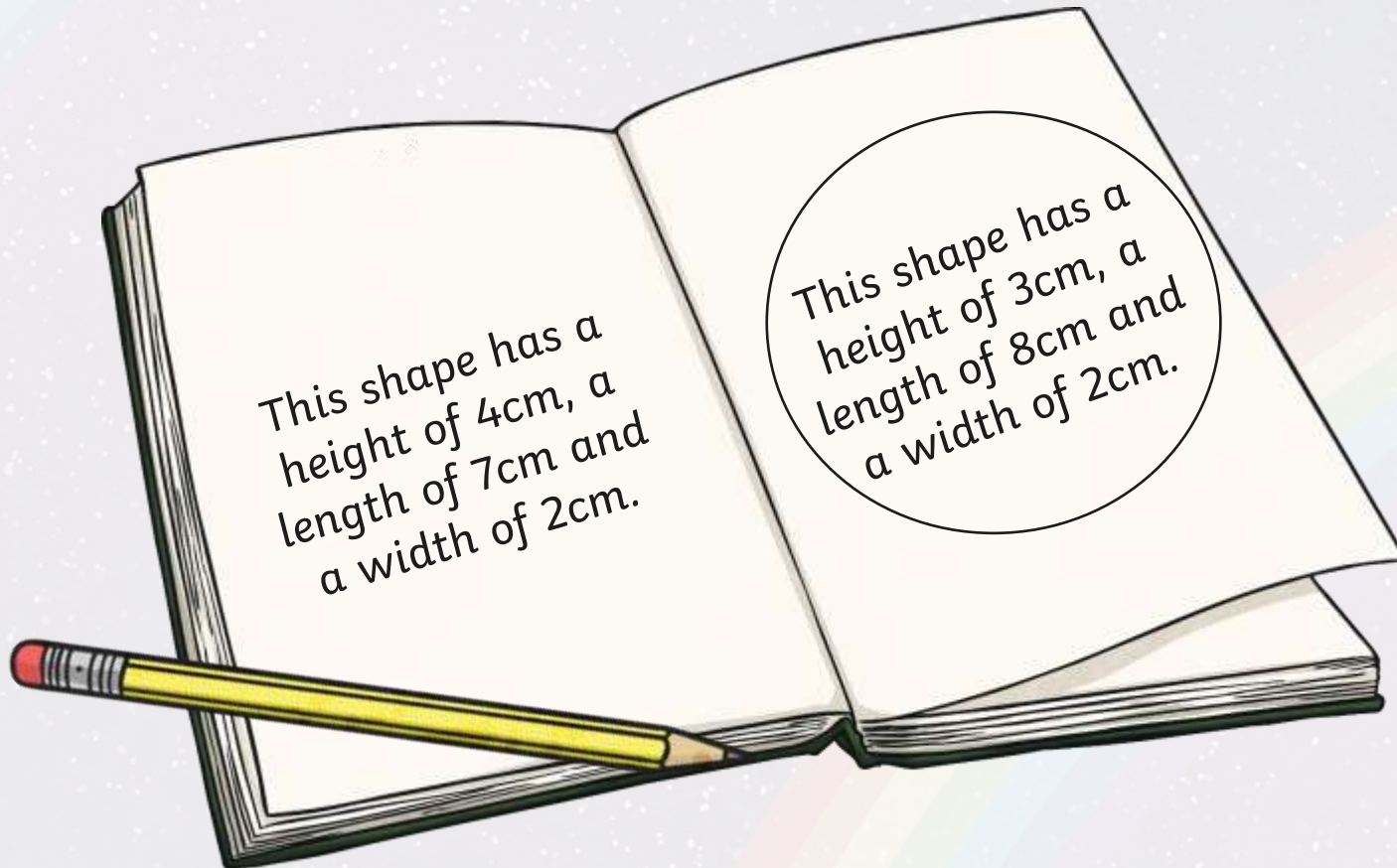


What different shapes can I make with a volume of 18cm^3 which is at least 3cm tall?





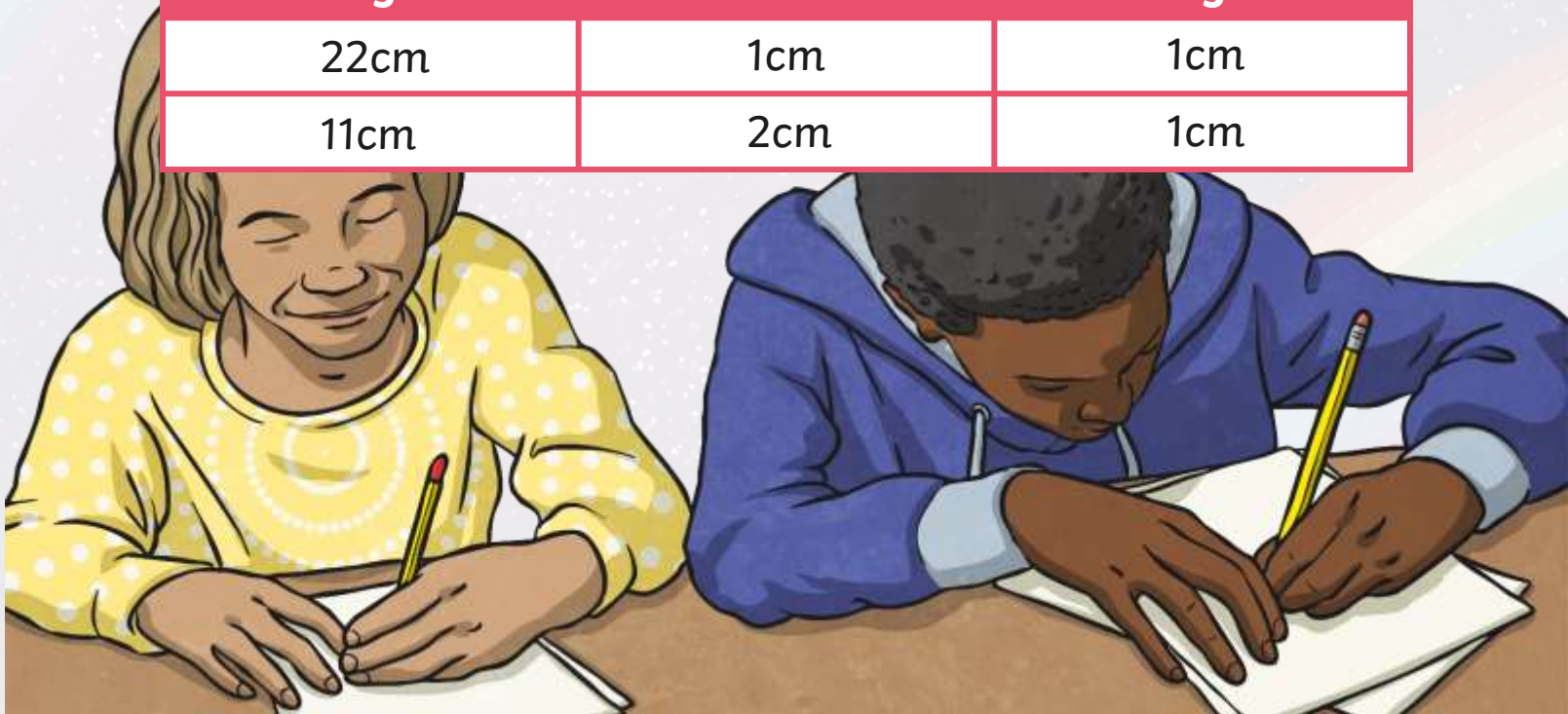
Which shape described here has the smallest volume?





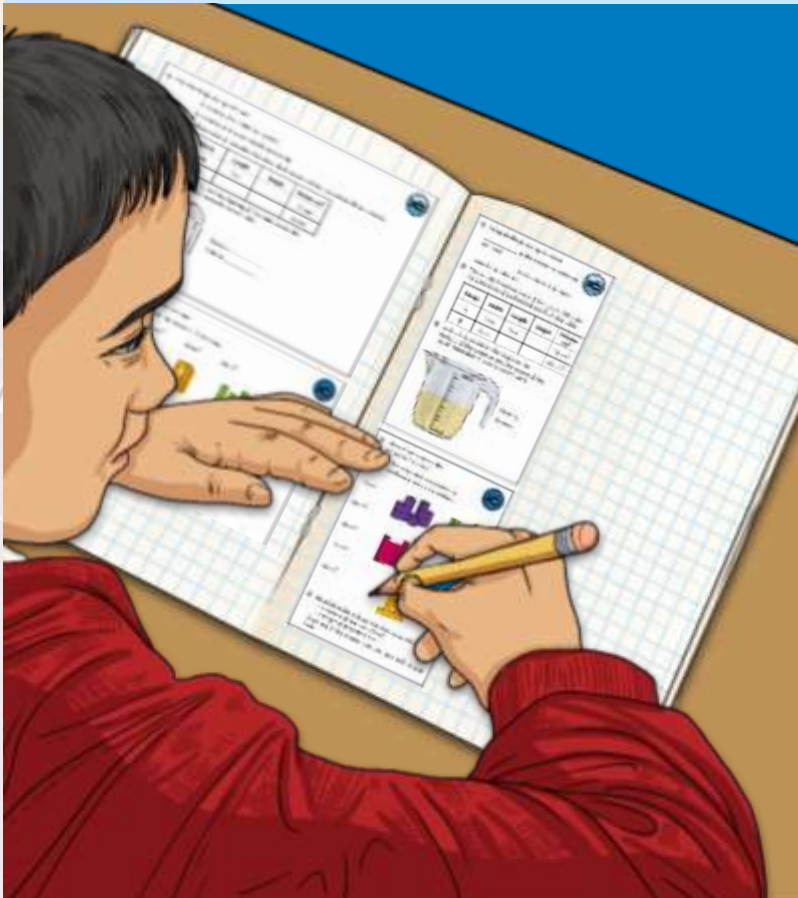
What could the possible measurements be of a cuboid with a volume of 22cm^3 ?

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



What Is Volume?

Dive in by completing your own activity!



1) Which shape described here has the greatest volume?
 Shape A is 8 cubes long, 3 cubes wide and 2 cubes high.
 Shape B is 8 cubes long, 2 cubes wide and 3 cubes high.
 Shape C is 4 cubes wide, 2 cubes high and 3 cubes long.
 Prove it:

2) Aya builds a cuboid with a volume of 24 cm³.
 a) What could the width, length and height be?

 b) She builds a shape with the same volume but with a different width, length and height.

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

4) The objects 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	_____	_____	56 cm ³

5) Look at the containers. Identify both the capacity of the container and the volume of the liquid. Remember to use the correct units.

Capacity: _____
 Volume: _____

6) a) Draw lines to match the volume to the shape.
 b) Use shape and one volume that do not have a match. Circle them.

12cm³ 24cm³ 21cm³ 12cm³ 22cm³

7) Abdul has made a shape with 1cm cubes which has:
 • a volume of less than 20cm³
 • a height of more than 2cm
 Draw one of the shapes you have built here:

Activities

- 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		18cm^3
B	4cm			60cm^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:



Capacity: _____

Volume: _____

1) Draw lines to match the volume to the shape.

b) One shape and one volume do not have a match. Circle them.



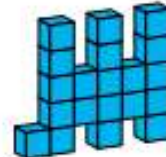
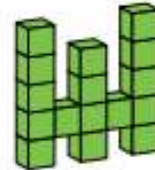
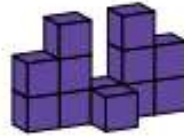
12cm³

20cm³

21cm³

11cm³

22cm³



2) Abdallah makes a shape with 1cm cubes which has:

- a volume of less than 22cm³;
- a height of more than 2cm.

a) Use cubes to make shapes which could fit this description.

b) Draw one of the shapes that you have built in your book.

- 1) Which shape described here has the greatest volume?



Shape A is 8 cubes long, 3 cubes wide and 2 cubes tall.

Shape B is 9 cubes long, 2 cubes tall and 2 cubes wide.

Shape C is 4 cubes wide, 2 cubes long and 6 cubes tall.

Prove it.

- 2) Kyla builds a cuboid with a volume of 16cm^3 .
- What could the width, height and length be? Find three possible solutions.
 - She builds a shape with half the volume of her first shape. What could the width, height and length of the new shape be?