

WALT estimate volume.

WILF:

- *Understand what volume is.*
- *Use the correct unit.*
- *Compare the sizes of shapes to help with your estimation.*
- *Use your knowledge of shape to help you.*
- + *Use problem solving language.*



Recap: what is volume?

Volume tells us how much space a 3D shape takes up.

It is measured in cm^3 (cm cubed).

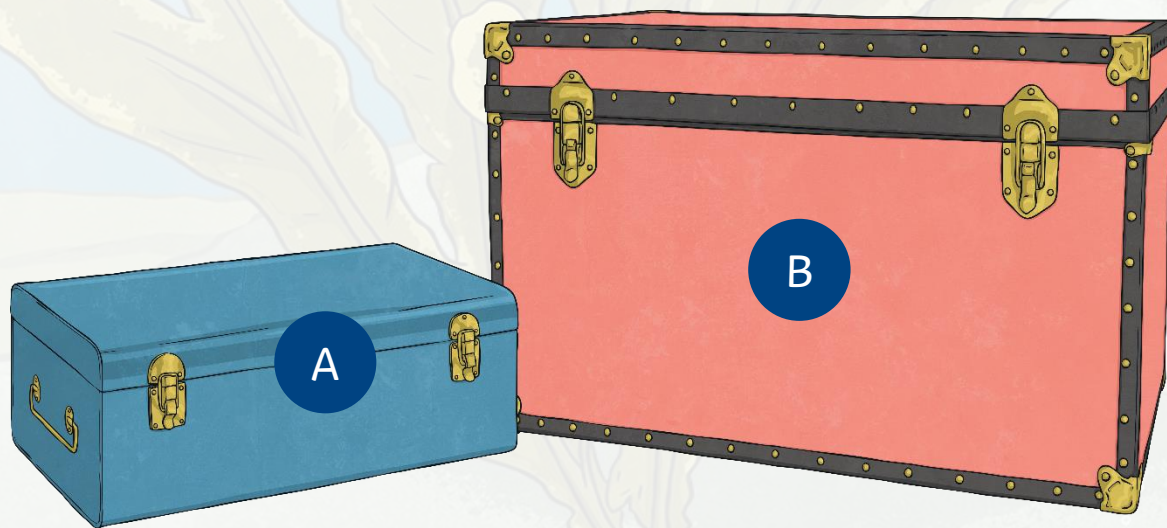
Imagine lots of 1cm cubes inside the shape.



Estimate Volume



Chest A has a volume of $10\,000\text{cm}^3$. Estimate the volume of chest B.

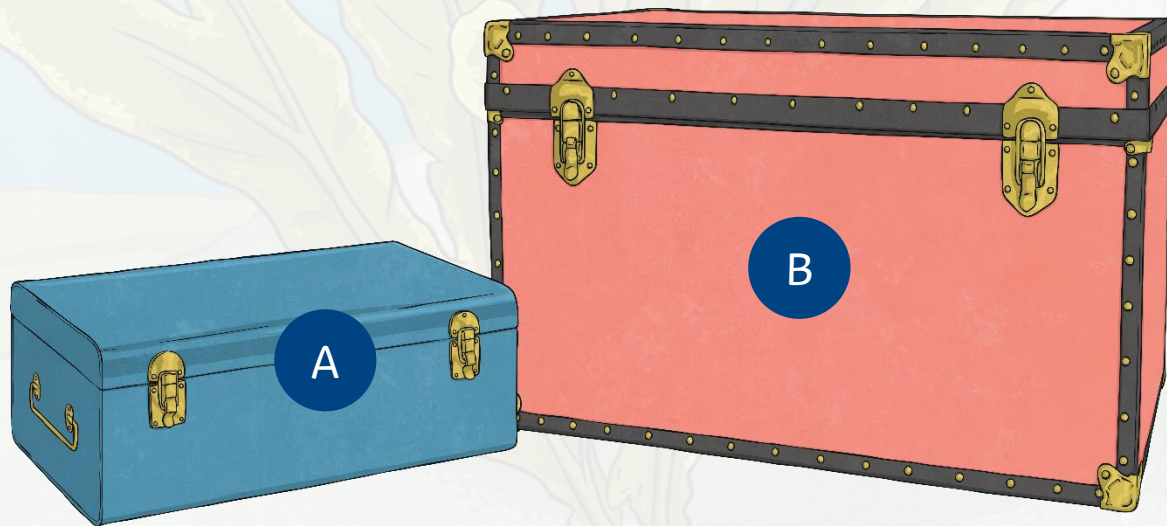


Remember, this is estimation, so you do not need an exact answer. With this question, you should look at how big A is, then think about how many would fit inside B. Then, multiply 10,000 by how many you think.

Estimate Volume



Chest A has a volume of $10\,000\text{cm}^3$. Estimate the volume of chest B.



B looks like it would fit 3-5 of A inside it. Therefore, any answer between $30,000\text{cm}^3$ and $50,000\text{cm}^3$ is correct as an estimation.

Estimate Volume



If the capacity of the bucket is 2000cm^3 , estimate the volume of the sand inside.



Think about the amount of space inside the bucket the sand is taking up. The capacity is the maximum amount.

Estimate Volume



If the capacity of the bucket is 2000cm^3 , estimate the volume of the sand inside.

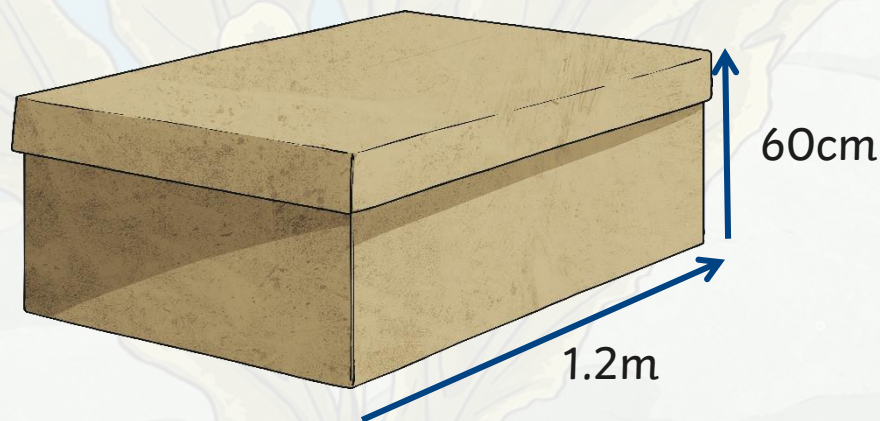


The bucket looks around half way full.
Therefore, you can estimate anywhere
between 800cm^3 and 1200cm^3 .

Estimate Volume



Look at this box:



It is 1.2m wide and 60cm high. How deep do you estimate it to be?

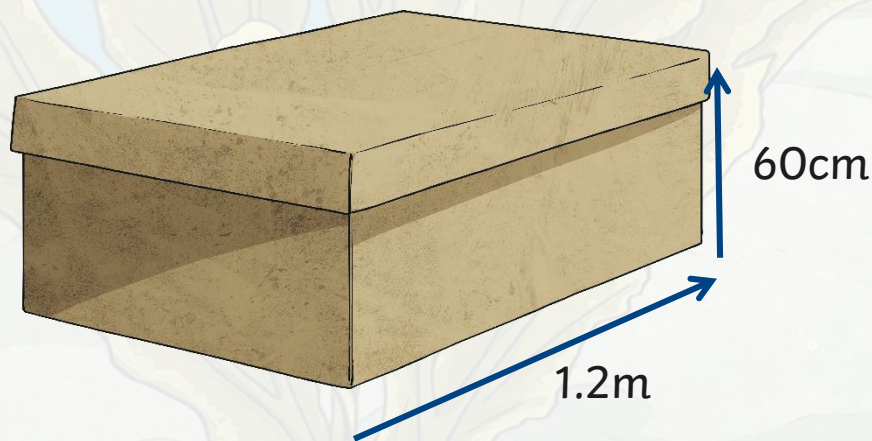
What is the approximate volume?

To answer this, think about your knowledge of rectangles and cuboids. If the width is 1.2m, then the depth will be somewhere between the height and the width (somewhere between 60 and 120).

Estimate Volume



Look at this box:



It is 1.2m wide and 60cm high. How deep do you estimate it to be?
What is the approximate volume?

Between 500 000cm³ and 720 000cm³

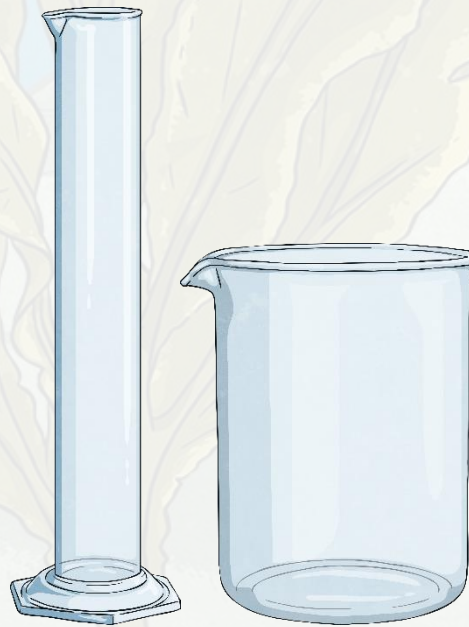
How? Example: If the depth was 80cm, $80 \times 120 = 9600$ $9600 \times 60 = 576,000\text{cm}^3$

If the depth was 90cm, $90 \times 120 = 10,800$ | $10,800 \times 60 = 648,000\text{cm}^3$

Estimate Volume

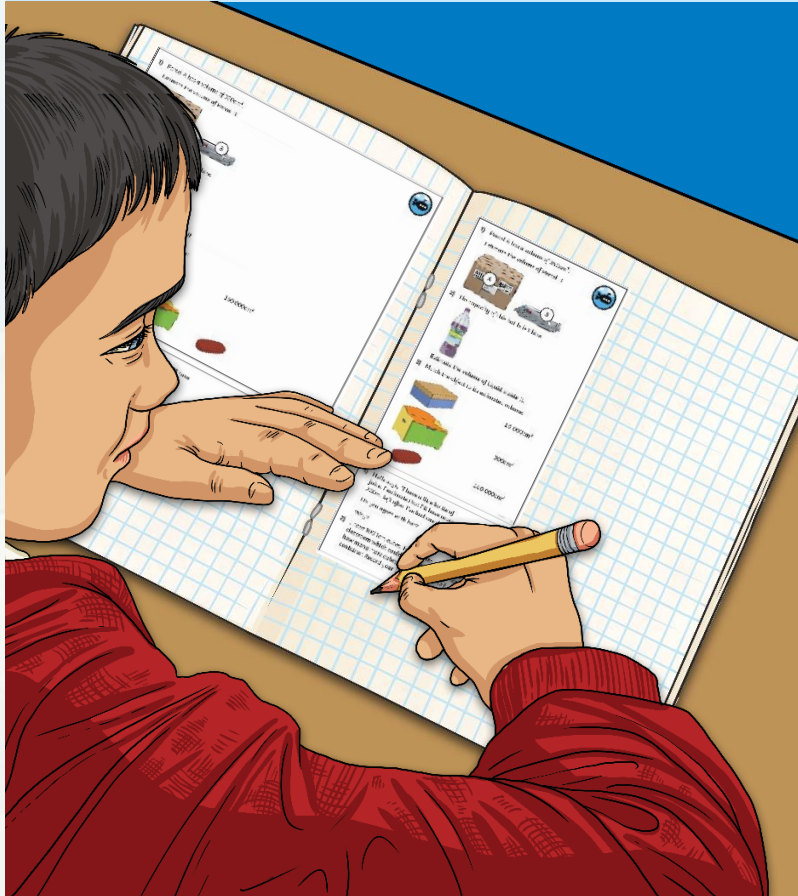


Which container do you think will hold more water for Eric's science experiment?




Discuss how you could prove it.


Now have a go at today's activity.
Challenge yourself with your sheet selection. If you start one and it is too easy, move to the next one.



1) Parcel A has a volume of 350cm³. Estimate the volume of Parcel B.




2) The capacity of this bottle is 1 litre. Estimate the volume of liquid in the bottle.




3) Match the object to its estimate.

15 000cm³



1) Class 5B have dug up a time capsule. They can see the top sticking out of the soil.



They measure the part they can see. The end is 40cm long and 50cm wide. Estimate the total volume of the time capsule. Explain your reasoning.

2) Rhys says, "The taller the container, the larger the volume will be." Is he correct? Prove it!

1) Halle says, "I have a litre bottle around 200ml left after I've had my drink." Do you agree with her? Why?

2) I have 100 1cm cubes. Find 3 cubes. estimate how many more cubes I need to make 1000cm³.

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