

Volume and Capacity

Measure and Record, Volume and Capacity



twinkl

Aim

- Measure and Record Volume and Capacity.

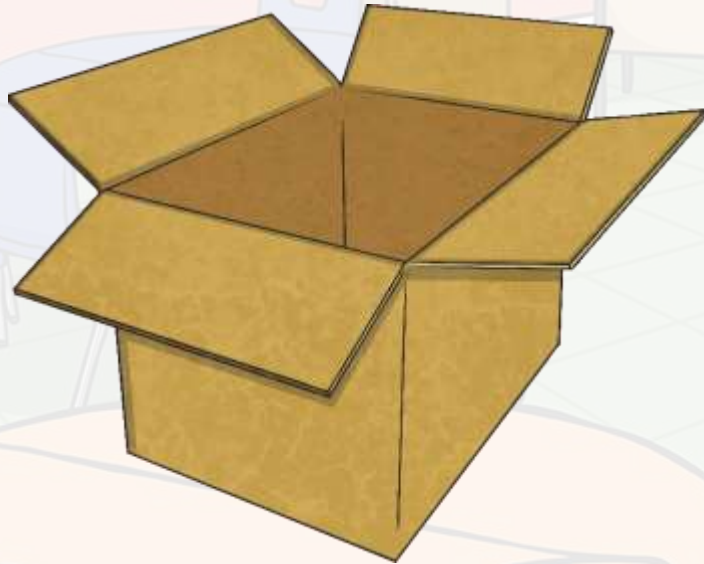
Success Criteria

- I can measure and compare volume and capacity.
- I can estimate, measure and scale volume and capacity.
- I can estimate, construct, compare and calculate the volume of cuboids using formulae.

What is Volume?

Think about it – can you come up with a definition?

Volume is the measure of the space taken up by a liquid or solid – the total space inside a container.



Units of Volume

Think about it – do you know the unit of measurement for volume?

Volume is measured in cubic units.

Think about it – how many cubic units measurements do you know?

mm^3

cm^3

m^3



Units of Capacity

Capacity is another type of volume that measures liquids. Think about it – do you know what unit of measurement is used for capacity?

Millilitres (ml)

centilitres (cl)

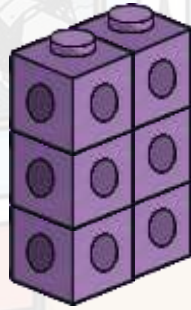
litres (l)

Each 1cm^3 is equivalent to 1ml. Each 1000cm^3 is equivalent to 1l.



Talk About It

What is the volume of each stack of cubes?



Each stack of cubes is made up of 6 individual cubes making 6 cubic units in each.

Does the shape of the stack affect the volume?

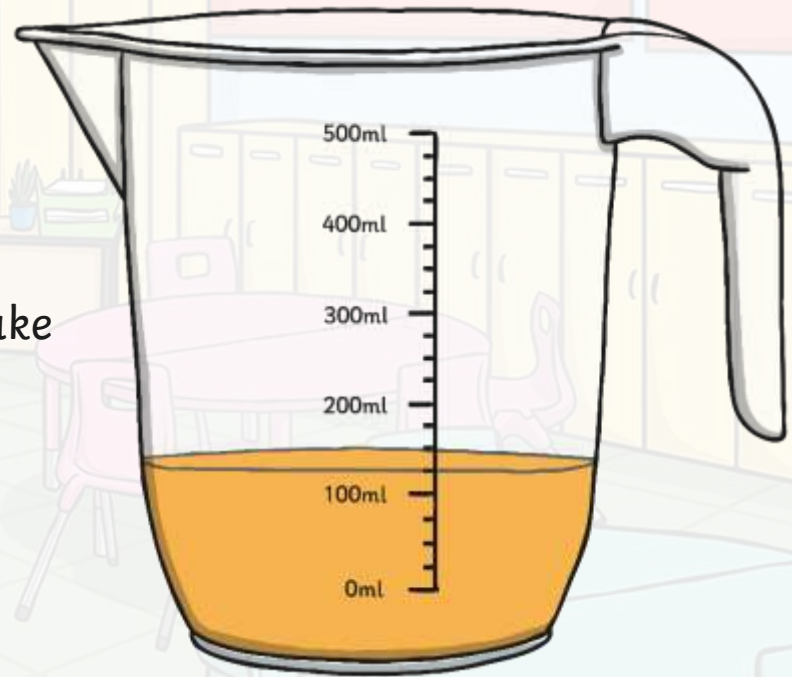
If the shape has the same number of cubes, it can have any arrangement and still have the same volume.

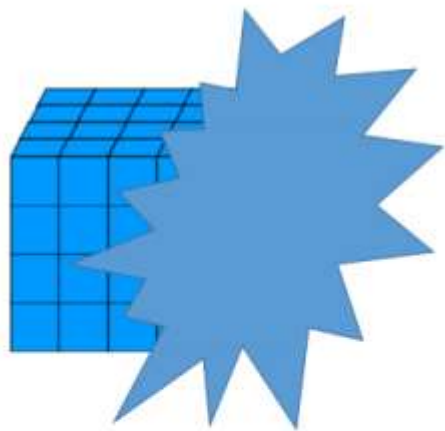
Talk About It

Some orange juice concentrate is poured into a jug.

What volume of water is needed to make 500ml of juice?

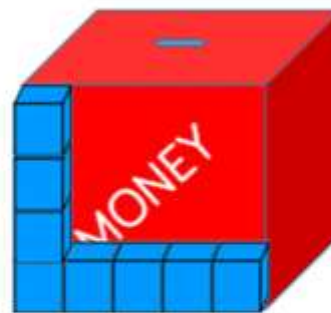
$$500\text{ml} - 125\text{ml} = 375\text{ml}$$





Each cube has a volume of 1 m^3
The volume of the whole shape is
between 64 m^3 and 96 m^3
What could the shape look like?

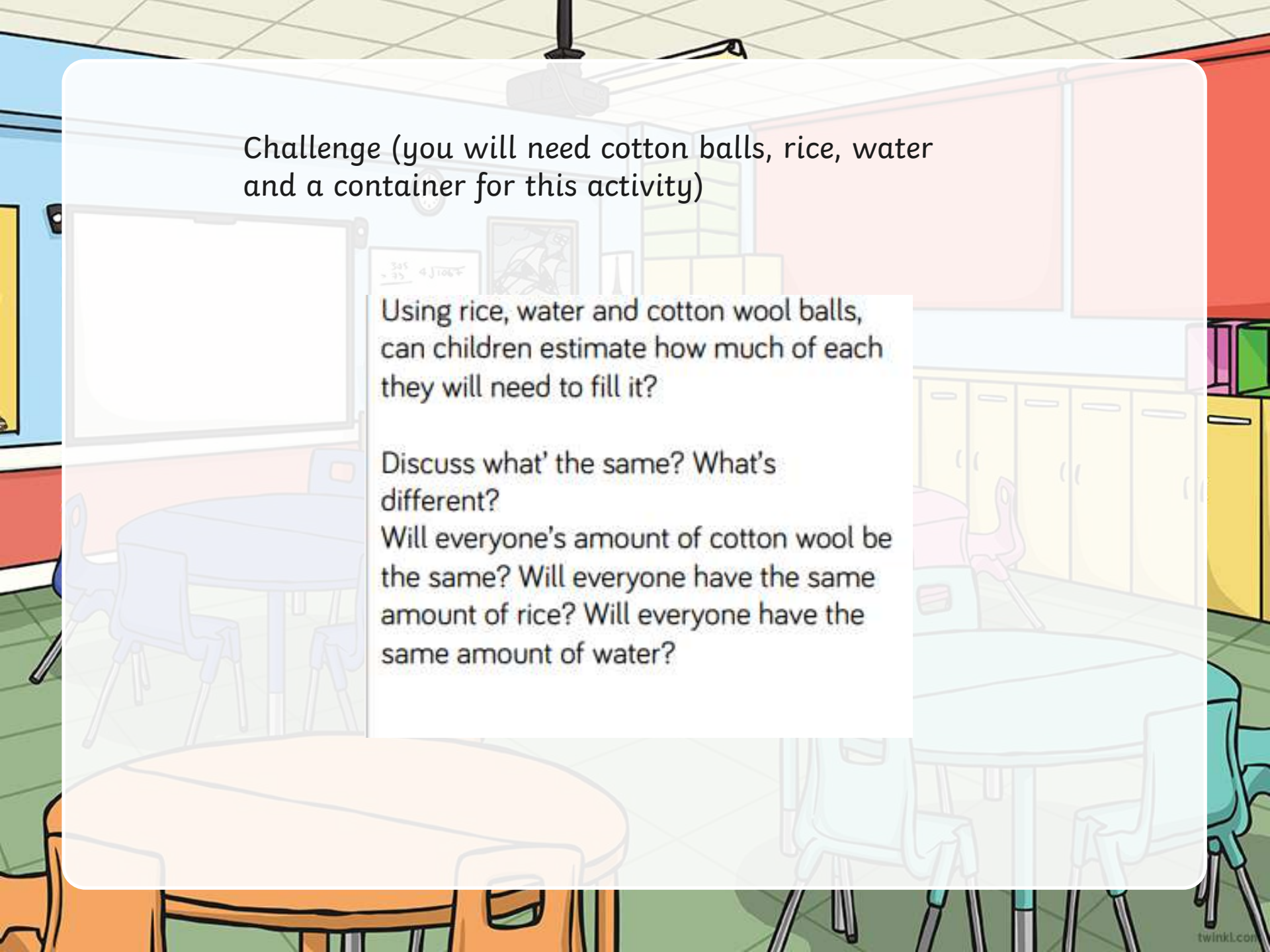
Stephen is using cubes to estimate the
volume of his money box.



He says the volume will be 20 cm^3

Do you agree with Stephen?
Explain your answer.

What would the approximate volume of
the money box be?



Challenge (you will need cotton balls, rice, water and a container for this activity)

Using rice, water and cotton wool balls, can children estimate how much of each they will need to fill it?

Discuss what's the same? What's different?

Will everyone's amount of cotton wool be the same? Will everyone have the same amount of rice? Will everyone have the same amount of water?

A Variety of Volumes

You will need a variety of containers with different capacities, water and a measuring container for this activity.

Using a variety of containers, predict which will hold the least to the most capacity of water by arranging them in order. Number the containers and predict the volume of water each will hold. Record your predictions in the table. Using a measuring jug, accurately measure the volume of water that each container holds and record that in the table.

Challenge: Calculate the difference between your prediction and the actual measurement.

Container Order	Prediction of volume of water held (ml).	Actual volume of water held (ml).	Difference (+ or - ml)
Number _____			_____ ml
Number _____			_____ ml
Number _____			_____ ml
Number _____			_____ ml
Number _____			_____ ml
Number _____			_____ ml
Number _____			_____ ml
Number _____			_____ ml