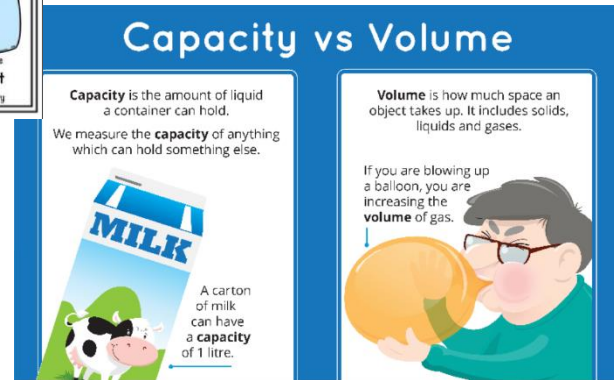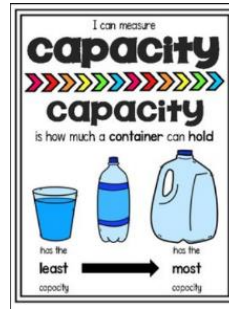# Maths – Capacity and Volume

Thirsty? Group problem solving activity

Image 1:

A copy of image 1 will be sent for you to print. Rather than printing you can draw copies, or even find 4 tall and 4 short glasses and use real orange and blackcurrant juice!

What do you notice about the images of the glasses with orange and blackcurrent?

What is the same and what is different? Can you sort the images in different ways and talk about how you have sorted them?

You can use words like 'full', 'empty', ''half full', 'short', 'tall', 'shorter', 'taller' etc.

Read the clues and order the glasses (start with the cards with a dot)

There are seven glasses in a line.
Put them in the correct order.

The third glass and the fifth glass are empty.

The first glass is full of blackcurrant juice.

The two glasses full of orange juice are next to each other.

The last glass is tall, and it is full.

The middle glass is half full.

You do not need this glass:

The tall glasses are second, fifth and last in the line.

Do you think the glasses are in the correct order? How do you know?

The second glass is half full.

There is orange juice in the second, sixth and seventh glasses.

You can write out 1ˢᵗ, 2ⁿᵈ, 3ʳᵈ, 4ᵗʰ, 5ᵗʰ, 6ᵗʰ, 7ᵗʰ, 8ᵗʰ cards to help with ordering.
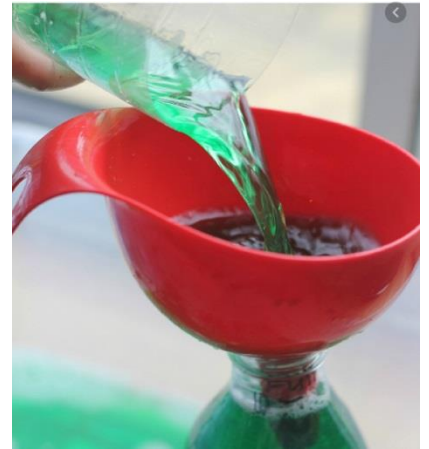
Hedgehog Class

Explore the **capacity** of different sized and shaped containers using different materials such as water, sand, rice, cereal and a variety of loose parts e.g. marbles.

Choose one container. Make your container **full, nearly empty, half full.**

Can you find a container which holds **more** than your container? Can you find one which holds **less**?

Investigate

Gather a selection of containers. Investigate which holds the **most**?

You can do this by pouring directly from one container to another

OR

You can use a small cup to fill each container, counting **how many** small cup-fulls the containers hold. **Estimate** first before filling your containers. **Record** your results by drawing or writing.

Swift Class

You can either do the same as Hedgehogs class, or try this if you'd like more of a challenge.

You will need:
- water
- measuring jug (with scale marked in ml)
- a selection of containers, labelled A, B, C, D etc
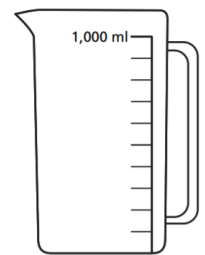
First, estimate and order the containers - which do you think will hold the most and least?

Then, use a measuring jug to measure the capacity of each container in **ml** – simply fill the container with water then pour it into the jug. Ask an adult to help you read the scale.

Write your results in a table like this one:

Container	Capacity (ml)
A	
B	
C	

Talk about:
Which container held the most?
Which container held the least?
Were your estimates correct?
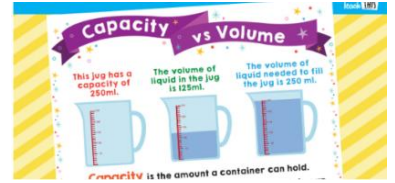
REVISION: Can you remember how many millilitres (ml) in a litre (l)?

REMEMBER:

Volume = measures the space the object/liquid takes up

Capacity = measures the total amount the object can hold

You decide the capacity of the full size glass, e.g. 1 litre.   Remember units!

Write capacity of full size glass = _____.

Write capacity of half size glass = _____.

Q1:   What volume of liquid does each glass contain? (Label the pictures 1-8 to help you.) Explain how you know and show your working out.

Q2:   How much liquid volume is there altogether?

Q3:   How much capacity is there altogether in the eight glasses?

Have a look at the pictures on the first page.

In TOTAL there is 1.25 litres (1250ml) of juice in all of the glasses put together.

Use this information to decide how much is in each of the glasses. Don't just guess! I want you to think about HOW you could work it out and how you could be as accurate as possible. Would you use equipment to help you? What would you need to make sure of?

Write down how much is in each glass, then explain your method below, using these sentence starters:

First I . . . . .

Then I . . . .

Then I . . .

I checked it by . . .