

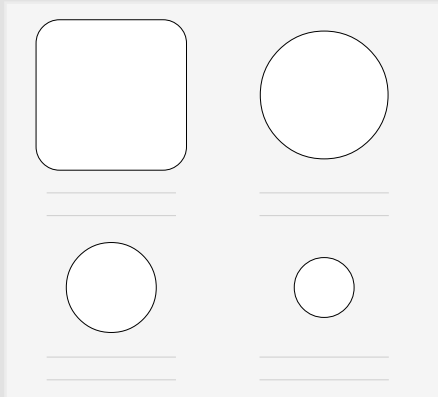
# Bottles

Approach: One to one

Level: Year 4 and year 8

Resources: 4 bottles labelled A (1litre), B (500ml), C (300ml), D (30ml); pieces of red, blue, yellow tape; 2 cards saying: "3 cups", "5 cups"; layout page.

Questions/instructions



Place the 4 bottles on the Bottles layout page.

- Here are four different bottles. I want you to tell me how much water you think each one would hold. I'll write your estimates on this sheet on the first line under each shape. You can pick the bottles up and look at them.

If the student does not say the units of measure ask:

*What unit of measure is that?*

After writing the estimates for all 4 bottles, point to container labelled B.

- This container holds 500 mls or half a litre of water. Now think again about how much the other bottles would hold. Do you want to change your mind about how much you think each bottle would hold? I'll write any changes on the second line under each shape.

If the student does not say the units of measure ask:

*What unit of measure is that?*

Give the student Bottle A and the tape.

- Here is some tape. Put the red tape on the bottle to show where you think the water would reach if the bottle was one third full.
- Now put the blue tape on the bottle to show where you think the water would reach if the bottle was three-quarters full.
- Now put the yellow tape on the bottle to show where the you think the water would reach if the bottle was 20% full.

Give the student bottle A and the '5 cups' label.

Imagine that this bottle holds 5 cups of water.

Give the student bottle B and the '3 cups' label.

Imagine that this container holds 3 cups of water.

- How could you use these two containers to measure 4 cups of water without using a cup?

	% responses	
	year4	year8
Within 20% of correct value:		
bottle A	30	71
bottle B	17	45
bottle C	11	30
bottle D	2	7
approximately correct	28	58
approximately correct	31	58
approximately correct	34	45
Explanation:		
clear and correct		10
some idea but vague		19
other		71