

➤ Notes for parents.**The purpose of the activity is to help your child to:**

- Use a unit to measure the capacity of a container.
- Calculate with simple units of capacity.

Here is what to do:

Show your child the picture of the glass and 2 litre bottle. Ask them how they know how many glassfuls can be filled from the whole bottle (the actual answer is 8 – 10 glassfuls). Children often have trouble looking at all three dimensions (length, height, depth) simultaneously in making their decision. Expect answers like, *“The glass will fit up/down the bottle 5 times.”* Respond with questions like, *“So you only need to look at how high the container is. Is that right? But isn’t the bottle a lot fatter than the glass?”*

You may need to support your child to develop a benchmark for estimation, especially if their answers are ‘way off’. Actually getting a 2 litre bottle and asking your child to predict the level as each glass is poured is a useful activity. They should notice how the ‘fatness’ of the bottle at different points alters the height of each pouring.

Measurement jugs usually combine glassfuls with standard units such as millilitres and fluid ounces. When your child pours one glass into the jug encourage them to look all the equivalent measures. Point out that capacity is usually measured in millilitres and litres in New Zealand. Using the measure for one glass (200 – 250 mL) to calculate the capacity of the bottle will be challenging. Most children will know the bottle holds 2 litres but may be unaware that this is the same as 2000 mL.

Points to note:

Capacity is the volume of a liquid or gas that a container holds. The standard (conventional) units for capacity include litres and millilitres (thousandths of a litre). This task requires them to use a unit of measurement (cupfuls).



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A cupful is standardised at 250 mL though some glasses may hold only 200 mL. Using a unit requires trust. Look for understandings of the following:

1. Units (cupfuls) must all be the same size.
2. Units fit together with no gaps or overlaps, i.e. no water is lost through shrinking or expanding during pouring.
3. Units can be added and subtracted just like other things.

Measurement scales are based on copying and equal splitting of units. To create millilitres, one litre is divided into 1000 equal parts. With capacity the size of these units is not obvious. Most measurement jugs have divisions like 100 or 200 mL. Point out to your child that if the water level shows 250 mL that there are actually 250 mL of water hidden within the volume. So a millilitre is very small (the size of a 1cm cube of water).

To calculate the capacity of the bottle requires whole number place value knowledge to 4 digits. Suppose a glassful is 250mL. Then two glassfuls must be $250 + 250 = 500$ mL. Your child may want to keep adding 250mL each time. Doubling can be more efficient. *“If two glasses are 500mL then how much are 4 glasses? How much are 8 glasses?”* To do this your child will need to understand how many tens make each hundred, and how many hundreds make each thousand.



Activity | How many glassfuls?

Y2

One glass has been filled from the 2 litre bottle.

Just by looking, can you tell how many glasses of water could be filled from the bottle? How do you know?

Check your estimation by filling a glass as many times as you can from a full bottle.



When you pour one glassful into a measurement jug what does the water level read? Find as many measurements as you can.

What does 200 or 250 mL mean?

How many mL will be in the whole 2 litre bottle?

