

Foundation Lesson 4 Measuring water

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Learning objectives

Students will:

- understand that water can be measured by volume
- identify that different activities use different volumes of water
- identify ways to reduce the volume of water used in common behaviours.

Learning outcomes

Subject	Strand & content descriptors
Mathematics	Measurement and geography <ul style="list-style-type: none">• Use direct and indirect comparisons to decide which is longer, which is heavier or holds more, and explain reasoning in everyday language. (ACMMG006) Numbers and Algebra <ul style="list-style-type: none">• Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond.(ACMNA002)
English	Literacy <ul style="list-style-type: none">• Deliver short oral presentations to peers. (ACELY1647)

Important questions

- How can we measure how much water we have used?
- Why is it important to know how much water certain activities use?

Background information

Measuring water is important. Understanding how much water certain activities use allows us to develop strategies and techniques to use water wisely.

Water is measured in order to charge for its use - so understanding how much water we use could save money on our water bills. Water is commonly measured in litres: 1000 millilitres (mL) = 1 litre; 1000 litres = 1 kilolitre (kL); water is generally charged per kilolitre.

Volume refers to the measurement of the amount of space inside a solid figure; it can also be referred to as capacity. Volume can be used to measure the amount of space taken up by solids (a container of rice for example); gases (the volume of gas in a barbeque cylinder) as well as water in a swimming pool or bath.

Lesson plan

This lesson uses activities associated with measuring the volume of various containers to introduce concepts and behaviours associated with saving water in the home.

Show children two different containers (clear if possible) and a measuring cup.



Ask students to predict which container will hold the most water; in other words how many measuring cups of water will it take to fill each container?

As a group, observe and count the number of cups used to fill the containers; discuss predictions and observations.

Introduce the word volume; explaining that the volume (in this case how many cups) is a way we can measure how much water we use. Students may be able to identify other liquids that are measured in volume (e.g. juice; milk or soft drink).

Dividing the class into small groups provide each group with a range of plastic containers and bottles (a variety of 'tall' and shallow 'containers' is recommended) and a measuring cup. Using a bucket of water students fill each of the containers with the measuring cup and then place the containers in a line from the container that used the most water to the one that used the least. Students should explain their findings to their peers.

Discuss the results. Were the students surprised at how much or little water was used to fill some containers?

As a class, students identify how they use water at home. Announce that the class will try and identify how much water (how many cups) some of these behaviours use. For example:

Washing hands: placing a plug in a sink, a student turns on the tap and washes their hands. Once finished, the amount of water in the sink is measured by using the measuring cup. The volume is recorded and displayed. This activity can be repeated for behaviours such as cleaning teeth. Similarly if the classroom has a shower, run the shower for 30 seconds into a bucket and then measure how much water was used. Ask the students how many minutes they spend in the shower.

Students then identify how they could change their behaviour to use less water - such as turning off the tap once they have soaped their hands or using a glass of water to rinse their mouth when brushing their teeth. Students could represent these behaviours through drawings, short presentations or in role play.

Resource requirements

- Containers of various shapes and sizes
- Measuring cups

Additional activities

Collect extra data by weighing containers (both empty and full) and plotting this information alongside the data on how much water is in each container.