

Drips

Related outcomes

- WM 3.2: A student selects and uses appropriate problem solving strategies to complete investigations.
- WM 3.3: A student uses mathematical terminology and some conventions to explain, interpret and represent mathematical situations in a variety of ways.
- WM 3.6: A student selects appropriate technology and uses it to help carry out mathematical investigations.
- S 3.4: A student uses simple coordinates or compass points to describe position, and marks out points on a grid.
- M 3.1 (a): A student selects from a range of units and measuring devices to measure accurately and record in practical situations.
- M 3.2: A student estimates, measures and records lengths in metric units from millimetres to kilometres.
- N 3.5: A student selects and uses appropriate mental, written and calculator techniques to approximate and calculate solutions to problems involving whole numbers, money and decimal fractions.
- VA 14: A student appreciates how mathematics is used in a range of aspects of society.
- VA 18: A student appreciates the impact of mathematical information on daily life.

Possible indicators

A student can:

- locate taps on a grid map of the school
- calculate the volume of water lost over time
- use a calculator to determine the volume of water lost, per tap, over a year
- discuss alternative ways of spending money
- solve problems based on the use of money.

Syllabus links

Measurement Number	Volume 11 Addition 8, 9 Multiplication 11, 12 Money 7
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Teaching activity

1. Students identify the location and number of taps on a map of the school.
2. Students, in groups, complete a survey of all taps and bubblers in the school, recording whether a tap is dripping or not.
3. In groups, students consider the implications of dripping taps in the school. This could be recorded in the form of a concept map.
4. In groups, students brainstorm strategies to measure the volume of water lost from individual taps. For example, they may, for a specified period of time, collect drips in a container, then measure it in mL.

5. If there are no dripping taps in the school, present the following situation:
One leaking tap loses five drops of water per minute, another tap loses 12 drops of water per minute, and the third leaking tap loses eight drops every three minutes. Calculate the amount of water lost in one hour, in a day, in a month, in a year. How many kilolitres is this?
6. Students contact Sydney Water to find the cost of water per kilolitre. They then calculate the cost of the wasted water per year. Looking at the school's water bill can provide students with interesting information. Costs, and other useful information regarding water can be found on the Internet at <http://www.waterboard.nsw.gov.au>
7. Students suggest alternative methods of spending this amount of money to improve the school. They might also investigate the cost of replacing washers.

Language

volume, millilitre, litre, kilolitre, cost

Equipment

collection containers, millilitre and litre measures, eyedropper, calculators, school map

