

Year 2

Lesson 3

How water gets to our houses

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Learning objectives

Students will be able to:

- understand how water reaches our homes
- recognise ways to use water wisely.

Learning outcomes

| Subject | Strand & content descriptors |
|-----------|---|
| Science | Science understanding: <ul style="list-style-type: none">• Earth's resources, including water, are used in a variety of ways. (ACSSU032) Science as a human endeavour <ul style="list-style-type: none">• Science involves asking questions about and describing changes in, objects and events. (ACSHE034)• People use science in their daily lives, including when caring for the environment or living things. (ACSHE035) |
| Geography | Geographical knowledge & understanding <ul style="list-style-type: none">• Environment: The environment is the source of every material thing we use. Geographical inquiry skills <ul style="list-style-type: none">• Observing and questioning: Pose and respond to several questions for an inquiry, based on a variety of question stem and stimulus. |

Important questions

- How do we use water in our homes?
- Where does the water in our taps come from?
- How is water cleaned?

Background information – sources, pipes and taps

In Australia we collect our water from three main sources, groundwater, surface water and the ocean. Groundwater is rain drained underground and collected in impermeable layers. Surface water is rain drained into rivers or creeks or collected in dams and water tanks. Water from the ocean is treated by desalination. Desalination removes salts and other minerals from sea water and transforms it into drinking water.

Before water can be used for drinking or washing it must be 'cleaned' at a water treatment plant through several treatment processes. Mixing alum (aluminium sulphate) with water and allowing it to settle removes mud, dirt and other particles. Sand and gravel-filled filters remove tiny particles and chlorine is added to kill bacteria.

The treated water is pumped to reservoirs for storage. Reservoirs are usually on high ground so that water can flow into underground pipes or water mains. The water in the mains flows into the house when you turn on the tap.



Linking locally

Most of the water used by Logan residents comes from various source points. These include:

- Wivenhoe Dam treated at Mt Crosby water treatment plant,
- Hinze Dam treated at Mudgeeraba and Molendina water treatment plants,
- Leslie Harrison Dam treated at the Capalaba water treatment plant,
- Stradbroke Aquifer (not treated), and
- Seawater treated at the Gold Coast Desalination Plant at Tugun.

Water from these source points are supplied to the city through 6 water supply zones. These zones supply different suburbs in Logan. Logan City uses approximately 55 megalitres per day. This will change as seasons change.

The daily water demand for the city can be met in a number of alternative ways. This water is supplied to 270,000 residents of Logan City. Treated water is stored in 28 reservoirs and delivered to households through a 2,060 kilometre network of pipes.

Lesson plan – dams, pipes and taps

- Introduce or reinforce the major elements of the natural water cycle. Use the figures in **Activity sheet 1 'The water cycle'** if necessary.
- Brainstorm the ways we use water at home, at school and in the community.
- Discuss where water comes from and how it gets to our homes. Using 'think, pair, share' students generate ways water is used at home; how it is used at school and in other familiar places and share these with the group.
- The poster '**Our urban watercycle**' will help to understand how water is treated and transported around the district.
- Discuss whether it is safe to drink water straight from a creek or puddle.
- Demonstrate how water is filtered. Prepare a water sample containing fine dirt, gravel, leaves and plastic litter. Pour some of the water through objects with varied size holes - such as a funnel, colander and fine strainer. Ask students to predict which items will be caught by the strainer.
- Discuss whether catching visible pollutants means that the water is clean. Observe what objects are trapped.



Resource requirements

- Poster – ‘Our urban water cycle’ (see appendices or online resources)
- Student self evaluation sheet 1

Additional activities

- Using the ‘Our urban watercycle’ poster ask students to suggest why facilities used to supply water are built in certain locations. For example why is it better to place dams in areas of hills and valleys (catchments); why site a desalination plant near the ocean?
- Encourage students to design a water-saving device that could be used in the home or at school. Students should produce a drawing of the device and a brief explanation on how it works. Ideas could include a tap that sends out a warning when it is left on or a sprinkler that shuts down when the lawn is watered.