Year 7 science

Where does our drinking water come from

Australian Curriculum links: Year 7 Science
Some of Earth's resources are renewable, including water that cycles through the environment, but others are non-renewable (ACSSU116)
People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE121)

In this lesson, students discuss the different sources of drinking water in Queensland and identify the source/s of their local drinking water supply. They compare the types of contaminants that can be found in different source waters in Queensland.

Equipment

For the class

- **Where does our drinking water come from?** concept cartoon PowerPoint slide[2]

For each student

- one copy of **Traditional sources of freshwater in Queensland**

Preparation

Source a map, aerial or satellite (Google Earth) image of your local catchment or island.

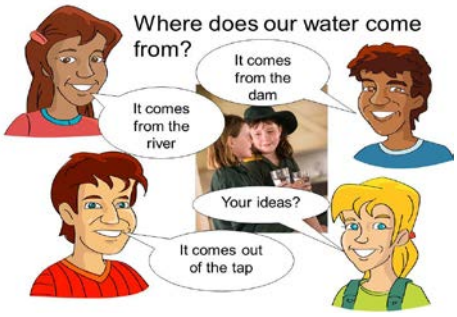
Optional: Invite a guest speaker (see **Water journeys guest speaker activity**)
Optional: Prepare the **Story of a river** materials

Lesson steps

Water sources

1. Explain that this session will investigate how the water cycle and the human impacts on the water cycle affect the delivery of safe drinking water to your community.

2. Display the 'Where does our drinking water come from?' concept cartoon. Students choose the idea that they think is correct. Note: you can draw your own concept cartoon to suit your local context.



3. Ask students to write their initial ideas and their reasoning in their journal then share their ideas with the class.

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[2] This concept cartoon was adapted using resources from: Hunt J & Thrupp R. (2008). Conversations about science. Central Queensland University: Bundaberg. Used with permission.

4. Display a map, aerial or satellite (Google Earth) image of your local catchment or island. Discuss how water cycles through your local area and the impact that human activities may have on the quality of the water.

5. Discuss different sources of water: groundwater, surface water supplies, seawater and rainwater tanks. Using the map or Google Earth or Google Maps image, identify your local water supplies. Alternatively, invite a guest speaker from your local council or water service provider to talk about water supply in your community (see 'Water journeys guest speaker activity'). Explain that, in Australia, water for urban, agricultural and industrial use has traditionally been sourced from surface or groundwater resources such as dams, weirs and bores. For additional information about conventional and alternative water sources go to Water sources in Queensland.

Substances in source water

6. Highlight the idea that water in the environment is not pure water; it can have many other substances mixed with it. Different sources of water from different areas have different water cycle pathways so they contain different substances. For instance, a creek flowing past muddy banks will contain a lot of mud while a creek flowing over rocks may not contain any mud at all.
7. Display an example of a compare and contrast table graphic organiser. Ask students to copy the table into their journals.
8. Working in pairs, students use the 'Traditional sources of freshwater in Queensland' fact sheet to compare and contrast the substances found in surface water with the substances found in groundwater. Discuss with the class the similarities and differences in the composition of surface water and groundwater.
9. Ask students to predict how the composition of different water sources might affect the type of treatment processes used to clean the water to make it safe to drink.

Optional: Use the 'Story of a river' demonstration to highlight the types of materials and substances that can be washed into a river from natural sources and human activities. Start with a large clear container of water displayed in front of the class. Read the 'Story of a river'. As each land use is mentioned, a student pours a sample representing the substances or materials from that land use that could find its way into the river.