

Year 7 science

Water careers and science

Australian Curriculum links: Year 7 Science

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 activity, students work in groups to view videos about people who work in the water industry to gain an insight into the roles and the science that each of these people use in their day-to-day work.

Equipment

For the class

- an enlarged copy of the Water careers and science table (resource 1)

For each student

- a copy of the Water careers and science table (resource 1)

Preparation

If possible, organise for a guest speaker from your local Council or water service provider to visit the class as a follow-up to this activity. They can provide specific information about the local water jobs and water supply, treatment and distribution.

Find the following videos and create a shortcut on the school network so student groups can access them. The first four videos can be found on YouTube and the H2Oz website. The last video is hosted on ABC Splash's 'Ace day jobs'.

[Hydrographer](#) [3:59]

[Water treatment technician](#) [2:09]

[Operations maintenance technician](#) [2:09]

[Wastewater treatment plant operator](#) [2:49]

[Civil engineer](#) [4:37]


Activity steps

1. Ask students to consider the different kinds of jobs that people do to provide safe drinking water to our taps. Suggestions might include plumbers, electricians, the people who lay pipes etc. Begin a class list on the board.
2. Display the Water careers and science table (Resource 1). Explain that the jobs listed are some of those involved in the water industry and that these people play key roles in ensuring that the treated water meets the Australian Drinking Water

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Guidelines before it is distributed to the town. They use different areas of science to do their job. Ask students to predict what roles they think each of these people play.

3. Explain the 'Roles' and 'Areas of science' columns in the Resource 1 table and that the specific role of a water professional will vary from water treatment plant to water treatment plant. Some tasks may be shared across a number of the job roles. If they don't know the name of the specific area of science, they could describe the kind of knowledge the person needs.
4. Working in groups, students view one of five water career video vignettes to identify the different roles of each water career and add them to the second column of the table in Resource 1. They then complete the third 'Areas of science' column on Resource 1.
5. Groups share their ideas with the class. You will need to help with some of the technical terms.
6. Add the new jobs to the class list (Step 1). Discuss the different educational pathways that each of the people took to find their job and their ideas about what they wanted to do in the future.

Resource 1 Water careers and science

Water career	Roles	Areas of science
Hydrographer		
Water treatment technician		
Operations maintenance technician		
Wastewater treatment plant operator		
Civil engineer		

Teacher answers: Water careers and science

Water career	Roles	Areas of science
Hydrographer	Measures the quality and quantity of water Undertakes field studies Uses data loggers and telemetry Does bathymetric surveys Uses technology	Measuring water flow – physics Measuring water quality – chemistry
Water treatment technician	Takes water samples Checks pH, chlorine residuals, turbidity, colour of the water	Using scientific equipment and analysing results – chemistry
Operations maintenance technician	Maintains sewage pump stations and reticulation system Clears pipe blockages Connects new houses to the water main and install water meters Keeps the workplace safe	How pumps and reticulation systems work – engineering
Wastewater treatment plant operator	Maintains pumps, sewage farm and grounds Takes samples and measures Plumbing Welding Lab work Vermin and weed control Revegetation	Deciding how pumps work – engineering Using scientific equipment and analysing results – chemistry Identifying insects – entomology Maintaining the health of the catchment – ecology
Civil engineer	Plans, designs and oversees construction of water supply systems including recycling systems	Designing and building structures – engineering, physics, mathematics How water flows through pipes and water treatment systems (hydraulics)