



# Clean safe water

Stage 1 lesson plans


Exploring access to clean safe water



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Sydney  
**WATER**



<b>Stage 1 – Clean safe water</b>		
<p><b>Aim</b></p> <p>This module aims to develop students' understanding of access to clean, safe water. The suggested learning sequence will:</p> <ul style="list-style-type: none"> <li>• explore how water gets cleaned before coming to our homes</li> <li>• engage with the concept of water inequality - how not all people have equal access to clean, safe water</li> <li>• identify similarities and differences between how people in other countries and Australia access, perceive and use clean water.</li> </ul> <p>Students will build their understanding of the processes to provide consistent, high quality drinking water in Sydney and recognise how easy it is for us to access. By appreciating water, we can build long-term positive attitudes to use and re-use water wisely.</p>		<p><b>Time:</b> ~120 minutes</p>
<p><b>Key inquiry questions</b></p> <ul style="list-style-type: none"> <li>• How did water get to you today? Was it clean? How was it cleaned?</li> <li>• Does everyone have clean safe water?</li> <li>• How can we educate people about tap water?</li> </ul>	<p><b>Background information</b></p> <p>Have you thought about your water today? How did it get to you? Did someone clean it? What did it look like and taste like? Sydney Water thinks about this every day.</p> <p>We all need safe, clean water to be healthy and well. It's Sydney Water's job to make sure you have clean water you can drink everyday straight from the tap.</p> <p>In Australia, and in many countries too, freshwater can be scarce. Many cities rely on a mix of water sources which are less dependent on rainfall including oceans, recycled water and groundwater.</p> <p>In Sydney, our water can come from many sources, but whatever the source, we treat it to the same high quality. We use technology, speeding up nature's cleaning process, to treat and filter every drop so you don't have to.</p> <p>We use water filtration and desalination to produce safe drinking water. These technologies use a physical process (like filtering) and a chemical process (like balancing pH). We add small amounts of chlorine to protect the water from pathogens. As a final step, we add small amounts of fluoride to the water to protect your teeth from dental decay. It's not part of the filtration process, but is done under the advice of <a href="#">NSW Health</a>.</p> <p>Clean water is stored in reservoirs, then delivered in pipes to people's homes, schools and businesses. All along the way, our water is checked and tested by scientists around the clock to ensure every drop meets the Australian Drinking Water Guidelines, which are some of the strictest in the world.</p> <p>Not everyone is so fortunate. People all around the world, find it hard to access clean, safe water. Many still use buckets to collect and carry water to their homes. Would life be different if we had to get our water this way?</p> <p>Many people coming to live in Australia for the first time are surprised that they can drink our high quality water straight from the tap. It's our job to help educate our community about the safety and benefits of drinking the tap water.</p>	
<p><b>Syllabus outcomes</b></p> <p><b>English</b> EN1-10C - Thinks imaginatively and creatively about familiar topics, ideas and texts when responding to and composing texts. EN1-11D - Responds to and composes a range of texts about familiar aspects of the world and their own experiences.</p> <p><b>Geography</b> GE1-2 - identifies ways in which people interact with and care for places</p> <p><b>Science</b> ST1-1WS-S - Observes, questions and collects data to communicate and compare ideas. ST1-4LW-S - Describes observable features of living things and their environments.</p> <p><b>Creative Arts</b> VAS 1.1 - Makes artworks in a particular way about experiences of real and imaginary things. VAS1.2 - Uses the forms to make artworks according to varying</p>		

requirements.	<p><b>Syllabus skills</b></p> <p><b>English</b></p> <ul style="list-style-type: none"> <li>• Develop knowledge, understanding and skills to communicate through speaking, listening, reading, writing, viewing and representing.</li> <li>• Express themselves and their relationships with others and their world.</li> </ul> <p><b>Geography</b></p> <ul style="list-style-type: none"> <li>• Develop skills to acquire, process and communicate geographical information.</li> </ul> <p><b>Science</b></p> <ul style="list-style-type: none"> <li>• Develop and apply skills in scientific inquiry through the process of working scientifically.</li> </ul> <p><b>Visual Arts</b></p> <ul style="list-style-type: none"> <li>• Apply skills and understanding in making artworks informed by their investigations of the world as a subject matter and use of expressive forms.</li> </ul>
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Teaching and learning	Resources
<p><b>Lesson 1: Your drinking water</b> (50 min)</p> <p><b>Inquiry question:</b> How did water get to you today? Was it clean? How was it cleaned?</p> <p>Explore how we treat and deliver some of the best drinking water in the world. Use a hands-on activity to see how filtration works.</p> <p><b>Activity 1: Wondering about water</b> (10 min)</p> <p><b>Preparation:</b> Download lessons, worksheets and PowerPoint.</p> <p>Using a wonder wall and <b>Clean safe water PowerPoint</b> get students thinking, questioning and sharing to understand their level of knowledge and interests. Here are some prompting questions:</p> <ul style="list-style-type: none"> <li>• Have you thought about your drinking water today?</li> <li>• How did it get to you?</li> <li>• Where did you get it from?</li> <li>• Did someone clean it?</li> <li>• Does everyone have clean water?</li> </ul> <p>Either the teacher or students record statements and questions on cards and place on the wonder wall.</p> <p>Throughout the lessons, encourage students to reflect, ask questions and look for questions that have been answered. Use a word wall to capture any new vocabulary.</p> <p><b>Activity 2: How did clean water get to you?</b> (10 min)</p> <ol style="list-style-type: none"> <li>1. Using the <b>PowerPoint</b> and <b>Background information</b> introduce the concept of “access” to clean water, how water gets to our homes and capture the vocabulary on the word wall.</li> <li>2. Watch the <b>How we filter our drinking water video</b> and refer to the <b>Discussion notes</b> to explore how water is cleaned. Ask students, with a partner, to answer:</li> </ol>	<p><b>Sydney Water resources</b></p> <p><u><a href="#">Primary school resources</a></u></p> <p><i>Wondering about water</i></p> <p><i>Module 5 Clean safe water</i></p> <ul style="list-style-type: none"> <li>• <u><a href="#">Clean safe water lesson plans</a></u></li> <li>• <u><a href="#">Clean safe water PowerPoint</a></u></li> <li>• <u><a href="#">Clean safe water worksheets</a></u> <ul style="list-style-type: none"> <li>– <i>See, think, wonder worksheet</i></li> </ul> </li> <li>• <u><a href="#">Plan an investigation</a></u></li> <li>• <u><a href="#">How we filter our drinking water video</a></u></li> <li>• <u><a href="#">Make a simple water filter brochure</a></u></li> <li>• <u><a href="#">Make a simple water filter video</a></u></li> <li>• <u><a href="#">Make a pH indicator experiment brochure</a></u></li> <li>• <u><a href="#">Make a pH indicator experiment video</a></u></li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Scissors</li> <li>• Poster paper</li> <li>• Blank cards</li> <li>• Sticky tack or tape</li> <li>• Markers</li> </ul>

<ul style="list-style-type: none"> <li>• Can you name a step we take to get water to your home?</li> <li>• Can you name a step we take to clean your water?</li> </ul> <p><b>Activity 3: Practical investigation – What makes a good water filter?</b> (30 min)</p> <p><b>Preparation:</b></p> <p>Using the <i><b>Make a simple water filter brochure</b></i> prepare your materials for class in groups. Watch the <i><b>Make a simple water filter experiment video</b></i> to see how it’s done.</p> <p><b>Safety first:</b> The filtered water in your experiment is not safe to drink. It’s not clean enough. Sydney Water further treats and tests water to make sure it’s clean and safe.</p> <ol style="list-style-type: none"> <li>1. Watch the <i><b>Make a simple water filter experiment</b></i> video. Ask students to consider: <ul style="list-style-type: none"> <li>• What happened? Why use four bottles with different filter materials?</li> <li>• How can you compare and decide which filter works best?</li> <li>• Which filter do you think will make the best filter?</li> </ul> </li> <li>2. Display the <i><b>Plan an investigation template</b></i> in the <b>PowerPoint</b> to help students think and work like a scientist.</li> <li>3. Record students’ predictions, materials, risks and safe choices to conduct the investigation.</li> <li>4. Perform the experiment. Optional: use the <i><b>See, think, wonder worksheet</b></i> for students to record individual observations.</li> <li>5. Compare the water samples. Ask students: <ul style="list-style-type: none"> <li>• Which samples were the cleanest? Which filters worked the best?</li> <li>• Were their predictions correct?</li> <li>• Is the water safe to drink? Does the water need more treatment?</li> </ul> </li> <li>6. Record students’ observations, conclusions and further questions in the <i><b>Plan an investigation template</b></i>.</li> </ol> <p><b>Additional questions:</b></p> <ul style="list-style-type: none"> <li>• How big do you think filters have to be to clean water for thousands of people?</li> <li>• What would happen if Sydney Water didn’t manage, clean, filter and test your water?</li> </ul> <p><b>Optional</b></p> <p><b>Make a pH indicator experiment</b></p> <p>Checking pH is one of the many tests we do to ensure our water quality. The <i><b>Make a pH indicator experiment</b></i> shows that substances can be acidic, neutral or basic. Our drinking water is treated to be neutral. This experiment builds students’ understanding that water may have invisible (dissolved) substances and that pH tests can help us identify this.</p>	<p><i>Make a simple water filter</i> (per group)</p> <ul style="list-style-type: none"> <li>• 4 x Plastic bottles with lids</li> <li>• ‘Muddy’ water sample</li> <li>• 1 Cup measure</li> <li>• 4 x Jars or the bottoms of the cut bottles</li> <li>• Scissors</li> <li>• Any four of these filtering materials: sand, coffee filter, cotton wool, sponge, wood chips, small, gravel, stones, paper towels.</li> </ul> <p><b>Vocabulary</b></p> <p>Access, clean, safe, filter, filtration, plant, reservoir, disinfect, solid particles predict, observe.</p> <p><b>Discussion notes</b></p> <p>Find out more about <a href="#">Water sources</a> and <a href="#">Water quality &amp; filtration</a> on our website.</p>
<p><b>Lesson 2: Clean water around the world</b> (40 min)</p> <p><b>Inquiry question:</b> Does everyone have clean safe water?</p> <p>Explore the issue of water inequality, that not everyone has easy access to water and some are more impacted than others. Engage students to appreciate water and their way of life through storytelling and empathy for others.</p>	<p><b>Sydney Water resources</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Clean safe water PowerPoint</a></li> <li>• <a href="#">A world without clean water worksheet</a></li> <li>• <a href="#">Water solutions worksheet</a></li> </ul>

<p><b>Activity 1: Does everyone have clean safe water?</b> (15 min)</p> <p>Using the <b>PowerPoint</b> and <b>Discussion notes</b> explore the problem of water inequality. Ask students prompting questions:</p> <ul style="list-style-type: none"> <li>• Have you heard of the word equality? What is equality? What do you think inequality is?</li> <li>• Some people don't have clean water to drink, wash or flush a toilet.</li> <li>• What challenges can you imagine they might have every day?</li> <li>• Using the <b>A world without clean water worksheet</b> predict what would happen if there was no access to water or it was difficult to clean. Ask students to consider: How would this change your life? How does it make you feel? How do you feel living in a city where water is managed?</li> </ul> <p><b>Activity 2: How do others get their water?</b> (25 min)</p> <p>Step into someone else's shoes! Read or watch the reading of <b>The Water Princess</b> as a class.</p> <p>Complete the <b>Water Princess Venn diagram</b> with a partner and <b>Discussion questions</b> on the Gippsland Water website as a class.</p> <p><b>Optional</b></p> <p><b>Success stories of others</b></p> <ol style="list-style-type: none"> <li>1. Using the <b>Water.org</b> or <b>WaterAid</b> website, pick and read a success story about getting improved access to clean water.</li> <li>2. Fill in the <b>Water solutions worksheet</b> in groups or pairs to describe what were the problems before the solutions and compare life after getting better access to water.</li> <li>3. Use their worksheet to help reflect on how the story made them feel.</li> <li>4. Create collage or artwork inspired by their chosen water success story.</li> </ol>	<p><b>Other resources</b></p> <ul style="list-style-type: none"> <li>• <a href="#">The Water Princess - Teaching resources - Gippsland Water</a></li> <li>• <a href="#">Water.org</a></li> <li>• <a href="#">WaterAid</a></li> </ul> <p><b>Discussion notes</b></p> <p>In Sydney we're lucky to have access to clean, safe drinking water and the removal of wastewater (sanitation). That means our health and wellbeing are being cared for in the places we live. Sydney Water also provides quality, reliable services, at affordable prices. See <a href="#">Liveable cities</a> for more information.</p> <p><b>Vocabulary</b></p> <p>Access, equal, fair, equality, inequality, sanitation, problems, challenges, opportunities, solutions.</p>
<p><b>Lesson 3: Raise awareness</b> (50 min)</p> <p><b>Inquiry question:</b> How can we educate people about tap water?</p> <p>Explore how people's past experiences influence their thinking about drinking water. Students will apply skills and understanding by creating an educational advertisement informed by their finds in the drinking water stories.</p> <p><b>Activity 1: How do people learn tap water is safe?</b> (20 min)</p> <ul style="list-style-type: none"> <li>• Using the <b>PowerPoint</b> watch the <b>Drinking water stories of Abby or Azam</b> who migrated to Sydney. See <b>PowerPoint appendix</b> for the script.</li> <li>• Using the <b>Azam and Abby worksheet</b> record what happened in their stories.</li> <li>• Ask students to share with a partner: <ul style="list-style-type: none"> <li>• How did they learn Sydney's drinking water was safe to drink?</li> <li>• How can we teach people that Sydney's drinking water is safe?</li> </ul> </li> </ul>	<p><b>Sydney Water resources</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Clean safe water PowerPoint</a></li> <li>• <a href="#">Abby Lau from Malaysia</a></li> <li>• <a href="#">Azam Muhammed from Pakistan</a></li> <li>• <a href="#">Azam and Abby worksheet</a></li> <li>• <a href="#">Storyboard template</a></li> <li>• <a href="#">We all say water worksheet</a></li> </ul> <p><b>Other resources</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Google My Map</a></li> </ul> <p><b>Vocabulary</b></p> <p>Migrate, migrant, languages, advertisement, educate, awareness, communicate, audience.</p>

<p><b>Activity 2: Can you create an advertisement?</b> (30 min)</p> <p>Many people moving from other countries to Sydney don't know that the tap water is safe. Ask students to create an advertisement to tell people our drinking water is safe. Consider what is important to the audience. What would convince people it's safe to drink?</p> <p>Watch our <b><i>Drinking water video</i></b> in English and one translated video for inspiration. Ask students:</p> <ul style="list-style-type: none"> <li>• Why did we translate the video in multiple languages?</li> <li>• How would this help to educate people from other countries?</li> <li>• What type of advertising would you like to make? A poster, a video, a social media post?</li> </ul> <p>Optional: use our video <b><i>Storyboard template</i></b> to help students scaffold their advertisement ideas.</p> <p><b>Optional</b></p> <p><b>Do we all say 'water'?</b></p> <p>Water is so important; we all have a word for water. Using the <b><i>We all say water worksheet</i></b> learn some new words for water and guess where the words come from by pinning it to a printed world map or on Google "My Maps".</p>	<p><b>Discussion notes</b></p> <p>We have a diverse and vibrant community with many Sydneysiders coming from across the globe.</p> <p>It can be quite an adjustment if you've migrated from a place with little or no clean water or sanitation.</p> <p>Sometimes people boil or purchase bottled water to drink and clean with. That's a lot of time and money wasted.</p> <p>Sydney Water and the community can actively engage with people and raise awareness that tap water is high quality, clean and safe to drink, locally sourced, environmentally friendly and great value.</p>
<p><b>Summative task: What I learned about water</b></p> <ul style="list-style-type: none"> <li>• Direct students to write or draw their answer to one of the inquiry questions on a water droplet.</li> <li>• Droplets can be attached to a ribbon or string and hung from the ceiling, wall, or across the room.</li> <li>• The water droplets can be used towards assessment.</li> </ul>	<p><b>Sydney Water resources</b></p> <ul style="list-style-type: none"> <li>• <a href="#">Water droplets worksheet</a></li> </ul>
<p><b>Reflection</b></p> <p>Revisit the wonder wall and reflect on concepts covered in the lesson. Allow students time to share with each other and compare thoughts and questions. As a group look for questions that have been answered and adjust on the wonder wall. Either the teacher or students record new statements and questions and place on the wall.</p>	
<p><b>Extension Activity</b></p> <p><b>Questionnaire and share</b></p> <p>Research or interview a person that grew up in a different country. Share with the class their water story.</p> <ul style="list-style-type: none"> <li>• What was their water story? Where did they grow up?</li> <li>• How did they get clean water?</li> <li>• How do they feel about their water now?</li> </ul>	
<p><b>Teacher reflection/evaluation</b></p> <p>Consider what worked, what didn't and changes for future delivery</p>	