

The Water Guardians program

Always learning for a thriving Tasmania

Teacher guide

TasWater's water literacy primary program, The Water Guardians, helps young students learn about the importance of water through fun, engaging, and curriculum-aligned activities. This document provides teacher resources and tips to support the water literacy program, helping students in Years 3 and 4 understand key concepts about the importance of water and how we can all look after it.

The purpose of the program is to inspire students to care for water by teaching them that we 'borrow' water from local sources. These sources are vital for native plants and wildlife. We share this water with other users like farmers, swimmers, and picnickers.

Every part of the program, from content to illustrations, is designed to focus on water in a uniquely Tasmanian context. Additional resources and links to all the lessons can be found on the teacher dashboard, giving you everything you need to support your students in learning about water and its role in their everyday lives.

Workshop overview

This workshop is made up of three interactive lessons that focus on water conservation, the water cycle, and water quality. Lessons are aligned with the TasWater story book 'The Water Guardians: saving the creek' and are relevant to Tasmanian water sources.

Each lesson is designed to take approximately 45 minutes and can be delivered by teachers as a group activity or completed individually by students.

The workshop is supported with offline activities, at home activities, discussion questions, and collaborative exercises to enhance engagement and understanding. It begins with a short pre-knowledge quiz to assess prior understanding, followed by the three-part lesson series. The workshop concludes with a final quiz to reinforce key concepts and assess students' understanding of the water conservation and responsible water use messages.

All activities are designed to be used flexibly; teachers may select the content that best suits their teaching cohort and environment.



Learning intentions and key messages

Students will learn to:

- Protect and conserve our limited water sources
- Take action to reduce climate change and protect water resources
- Identify how pollutants enter waterways and ways to remove or

reduce them

Students will learn about:

- The need for clean, accessible fresh water
- The water cycle
- How working together can restore and protect nature and water quality

Resources

Provided by program:

- Years 3–4 teacher guide
- 'The Water Guardians: saving the creek' animation – introduction to the storybook
- 'The Water Guardians: saving the creek' storybook
- Interactive classroom digital activities
- Take home activity pack
- Offline activity worksheets

Required:

- Interactive display such as an Interactive Whiteboard (IWB)
- PC or device with internet access
- Student devices (optional – if students are completing the workshop independently)

Assessment

- Pre-knowledge quiz
- Questioning
- Participation
- Activities
- Summative quiz

Differentiation

Teachers are encouraged to use their discretion when presenting the material in this workshop. Base participation on your students' individual needs, and existing knowledge and understanding. This module has been designed for Stage 2 (Years 3–4) students, with links to the Australian Curriculum.

General capabilities

- [Digital Literacy](#)
- [Literacy](#)
- [Ethical Understanding](#)
- [Personal and Social Capability](#)
- [Critical and Creative Thinking](#)
- [Intercultural Understanding](#)

English

AC9E3LE02 discuss connections between personal experiences and character experiences in literary texts and share personal preferences

AC9E4LY05 use comprehension strategies such as visualising, predicting, connecting, summarising, monitoring and questioning to build literal and inferred meaning, to expand topic knowledge and ideas, and evaluate texts

AC9E3LY02 use interaction skills to contribute to conversations and discussions to share information and ideas

Humanities and Social Sciences (HASS)

AC9HS4K05 (Geography) the importance of environments, including natural vegetation and water sources, to people and animals in Australia and on another continent

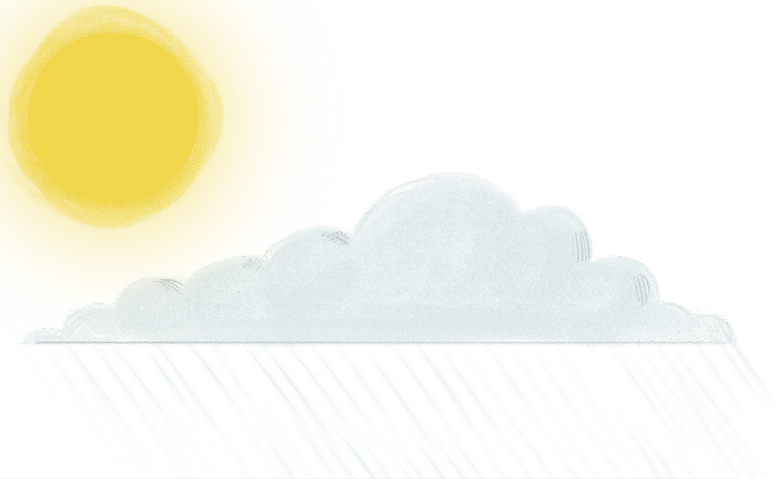
Science

AC9S4U02 identify sources of water and describe key processes in the water cycle, including movement of water through the sky, landscape and ocean; precipitation; evaporation; and condensation

Using the online module

Introduction

Before you begin the online module, use this activity to introduce students to the water cycle and the processes that occur when water moves through different environments.



Water cycle relay race

Materials needed

- Large buckets or containers (one per team)
- Small cups or sponges (one per student)
- Access to a tap
- Obstacle course materials (e.g. hula hoops, cones, jump ropes)

Set-up

- Divide the class into teams of 4–5 students.
- Create an obstacle course for each team with stations representing different parts of the water cycle:
- Evaporation: A large bucket of water
- Condensation: A hula hoop suspended horizontally
- Precipitation: A series of cones to zigzag through
- Collection/run-off: An empty bucket at the end

Instructions

1. Explain that each team represents water moving through the water cycle.
2. The first student in each team starts at the Evaporation station, filling their cup or sponge with water.
3. They then run to the Condensation station, where they must pass through the hula hoop without spilling water.
4. Next, they navigate the Precipitation cones, simulating falling rain.
5. Finally, they empty their water into the Collection bucket at the end.
6. They race back to tag the next team member, who repeats the process.
7. The relay continues until the Collection bucket is full or a set time limit is reached.

Conclusion

After the activity, discuss how each obstacle represented a different part of the water cycle and how water moves through these stages in nature.

Animation and Chapter 1 of 'The Water Guardians: saving the creek'

Students view the 30 second animation. Here, they will meet the animals and understand the key messages within the narrative.

The teacher will then read Chapter 1 of 'The Water Guardians: saving the creek' storybook in its entirety to students prior to beginning Lesson 1.

Challenge question – Chapter 1

Posing challenge questions to students has three key benefits.

- It encourages **critical thinking** by getting them to analyse and evaluate information.
- It boosts **engagement** by making learning more interesting and motivating.
- It helps develop **problem-solving skills** by requiring students to apply what they know to real-life situations.

Ask the following question, record students' responses and then take opportunities throughout the lesson to 'check in' with students.

Are they able to use their new knowledge to confirm, add to, or alter their responses?

The water level at Triabunna Creek has dropped significantly, exposing rocks that were once underwater. Dan the caddisfly is left alone, as his friends have moved away.

Why do you think the caddisflies have moved away? Can you think of some reasons why you would leave your own home?



Beginning the workshop

After listening to Chapter 1, students log in to the online workshop **Years 3–4 TasWater water literacy primary program**, via their devices (e.g. school laptops or iPads/tablets).

Students commence the pre-session quiz, and their responses will help you understand how much they already know about the topic. Discuss the responses and answers to the pre-session quiz with your class. Ask students to share their ideas and views about water in addition to any questions they have. Identify aspects they would like to know more about.

Next, guide students through the online workshop activities, one lesson at a time.

Pre-knowledge quiz questions:

Question

Answer

1. Why did Aunty Laurel stop at Triabunna Creek?

B) To have a drink of fresh water

2. What did Jaz suggest planting to help improve the water conditions?

C) Native grasses

3. Why is it important to conserve fresh water?

B) Because fresh water is only about 3% of the Earth's water

4. True or false: The natural water cycle includes the steps of evaporation, condensation, infiltration, and run-off, but not transpiration.

False

5. What are some examples of accidental littering?

D) All of the above

Main body of workshop

Lesson 1: Water conservation

(Questions 6–11)

Question 6:

- Display Question 6. Students categorise each water source either independently or as a class.
- Whole class brainstorm: Where does the water come from that flows through your taps? Teacher to record responses.
- Students then pair up and share their personal 'water use journey' from the moment they woke, until the present moment, keeping count of how many times they used water. e.g. *As soon as I woke up, I had a sip of water from my drink bottle. In the kitchen, mum boiled a pot of water for my poached egg. I washed my hands before eating, then rinsed my plate before placing it in the dishwasher. After breakfast, I brushed my teeth and washed my face. On the way out the door to school, I refilled my water bottle, and topped up the dog's water. At school, I used the bathroom before class and pressed the half flush button. I used water nine times!*

- Reflection questions:

Were you surprised by how many times you used water?

Do you realise all the water you used was fresh? This reinforces the fact we must use it wisely – only about 3 per cent of Earth's water is fresh!

Question 7:

- It's important to understand what a water catchment is and how easily water can become polluted if people who live in the catchment do not take care. As the name suggests, a water catchment is a location where water is 'caught' and contained within rivers prior to entering the sea. Usually, there is a high point (like a mountain) and a low point (like a valley) where the water collects.
- Set a 1-minute timer. Students take turns quickly naming places where rainwater might collect to become part of a catchment (e.g. mountain, river, creek, reservoir).
- Encourage them to think of as many places as they can before the timer goes off.
- Once the timer is up, display Question 7. Have students click on the drop down options to find out the many ways rainwater can enter our catchment areas for collection.

Extension opportunity: Students can research specific drinking water catchments in their region and explore their role in providing clean water to communities. Ask students to consider how the catchment is protected and why it's important for the environment.

Question 8:

- Display Question 8. As a class, click on the markers together, reading what happens when you 'add heat' to water or 'remove heat' from an ice cube.
- Discussion questions:

How do you feel about heat? Does it make you feel comfortable or uncomfortable?

What do you notice when heat is added or removed in your environment? (e.g. when it's cold outside, you might need a jacket; when it's hot, ice-cream melts).

Can you think of other things that change when heat is added or removed? (Answers might include: chocolate, ice cream, candle wax, an egg).

Question 9:

- Display Question 9. Read through the question and possible answers. Students answer as a class or independently.
- In small groups, students imagine the conversation that occurred between Dan and his caddisfly friends and family before they left the creek. Using the storybook for prior knowledge and context, students can perform an impromptu role play. Consider: What did the other caddisflies say? Did Dan try to convince them to stay behind with him? Where did they plan to relocate to?

Question 10:

- Display Question 10 and complete as a class.
- **Offline activity 1: Visual display (clean water versus polluted water)**

Materials

- Two clear containers (e.g. jars or cups)
- Tap water
- Pollutants. e.g. soap, dirt, vegetable oil
- Labels for each container (e.g. Clean water, Polluted water)
- Cards in the shape of water droplets
- Pens, pencils or textas
- Magnifying glasses (optional)

Instructions

1. Fill one container with the clean water, the other with water that has been mixed with your chosen pollutants.
2. Attach corresponding labels to each jar.
3. Using the water droplet cards, write out the following facts about clean and polluted water (students can add more, if they like):

Clean	Polluted
Provides a healthy environment for wildlife	Contains harmful substances and lacks fresh flow
Supports biodiversity and ecosystems	Forces animals to relocate due to poor conditions

4. Display the jars side by side in a prominent place in the classroom or school. Place the water droplet cards around the display, as well as the magnifying glass. Invite students and teachers to learn about the differences between clean and polluted water.

Question 11:

- Display Question 11 and work as a class to arrange the sequence in the correct order.
- Students imagine they're scientists observing a local creek. They notice the water becoming polluted and the flow slowing down. In small groups, discuss:

What immediate changes might you see in the creek's ecosystem?

How might different animals react to these changes?

If this pollution continues, what long-term effects could occur in the surrounding environment?

Can you think of any real-life examples of water pollution affecting local wildlife in your area?

- After group discussions, share your thoughts with the class, focusing on the chain reaction of events that pollution can trigger in an ecosystem.

Challenge question revisited – Chapter 1

Sample answers:

Why do you think the caddisflies have moved away?

- The water has become too polluted for them to survive.
- There's not enough clean water left for them to live comfortably.
- The food sources they depend on have disappeared due to the low water levels.
- The temperature of the water may have changed, making it unsuitable for caddisflies.
- The reduced water flow might not provide enough oxygen for the caddisflies to breathe.

Can you think of some reasons why you would leave your own home?

- If there wasn't enough clean water to drink or use.
- If the air became too polluted to breathe safely.
- If there wasn't enough food available in the area.
- If the temperature became too hot or too cold to live comfortably.
- If there was a natural disaster that made the home unsafe
- If the home became too crowded or uncomfortable to live in.
- If there were no more resources or opportunities in the area.

Lesson 2: The water cycle

(Questions 12–17)

The teacher will read Chapter 2 of 'The Water Guardians: saving the creek' in its entirety to students prior to beginning Lesson 2.

Challenge question – Chapter 2

Ask the following question, record students' responses and then take opportunities throughout the lesson to 'check in' with students. Are they able to use their new knowledge to confirm, add to, or alter their responses?

Jaz explains how the water cycle works and how pollution and climate change affect it.

How might changes in the water cycle due to pollution and climate change impact the animals living in and around Triabunna Creek?



Question 12:

- Display Question 12 and complete as a class.
- **Game: Water use charades**

Preparation

1. Write down different uses of water on slips of paper (e.g. washing dishes, drinking, cooking, watering plants, bathing, cleaning, watering crops, industrial processes).
2. Fold the slips and place them in a bowl or hat.

Activity

1. Divide the class into small groups.
2. One student from each group will randomly draw a slip from the bowl without showing it to their team.
3. The student will then act out the use of water written on the slip without speaking, while their team guesses what it is.
4. Set a time limit of 1–2 minutes for each round.

Discussion

- After each round, briefly discuss how that particular use of water fits into one of three categories: household, agricultural, or industrial.
- Encourage students to share any personal experiences related to that use of water.

Question 13:

- Display Question 13 and work through as a class.
- After reviewing the flashcards, lead a brief class discussion. Ask students to share real-world examples they've observed for each step of the water cycle. For instance:
 - Evaporation: puddles disappearing when the sun comes out, the local creek water level being lower
 - Transpiration: humidity in a rainforest or jungle (like in Queensland) when the sun is out
 - Condensation: Fog or clouds forming, steam above a boiling kettle or pot
 - Precipitation: Rain, snow, sleet or hail falling
 - Infiltration: Water soaking into the ground after rain, water soaking into the soil of a pot plant
 - Run-off: Water flowing in street gutters or streams after a stormFor each example, ask:
 - What might happen next in the cycle?
 - How does this example show the water cycle in action?
- Encourage students to think about how these processes might be affected by human activities or environmental changes e.g. warmer than usual weather evaporating everything that's left in the waterway, unusual weather patterns making it rain more than usual causing flooding, paved grounds preventing infiltration and causing more run-off of stormwater.

Question 14:

- Display Question 14 and have students work through independently.
- **Offline activity 2: Water quality challenge**

Students will understand factors affecting water quality in the water cycle through a fast-paced decision-making activity.

Activity

1. Divide the class into small groups of 3–4 students.
2. Each group represents a 'Water quality team' tasked with protecting a local waterway.
3. Present a series of quick scenarios each involving a potential water pollutant:
 - Litter near a stormwater drain (stormwater drains lead straight to the nearest waterway)
 - Excess fertiliser use in a nearby garden (fertilisers in the run-off causes extra nutrients in the waterways, feeding algal blooms)

- Oil leak from a parked car (when it rains, the motor oil washes into the stormwater drains)
 - Unusually warm weather affecting a local pond (evaporating it so there is less, stopping the flow so there is a build-up of pollutants or nutrients that affect the aquatic life)
4. For each scenario, groups have 30 seconds to:
 - a) Identify the potential impact on water quality
 - b) Suggest a solution to prevent or mitigate the pollution
 5. After each round, briefly discuss responses and award points for accuracy and creative solutions.
 6. The team with the most points at the end wins a Water Guardians badge.
-

Question 15:

- Display Question 15 and work as a class to complete the drag and drop.
 - **Offline activity 3: Pledge creation**
 1. Students write their own pledge by including:
 - A personal commitment (e.g. I pledge to avoid single-use plastics by using reusable bags, bottles, and containers.)
 - A specific action they will take (e.g. I will bring my own water bottle to school every day, I will bring my lunch in reusable containers)
 2. Sharing
 - After completing their pledges, have students share their commitments with the class or in small groups. This encourages accountability and inspires others.
 3. Visual display
 - Create a Pledge Wall in the classroom where students can post their pledges. This serves as a visual reminder of their commitment to reducing single-use plastics.
-

Question 16:

- Display Question 16. Students match the terms to their definitions.
- Divide the class into small groups. Give each group 5 minutes to research or think of real-world examples of erosion, runoff, and algal blooms in their local environment or from recent news. For each term, they should:
 - Identify an example
 - Explain how it relates to the definition

- Describe its potential impact on the environment, animals or people
 - After 5 minutes, have groups share their findings with the class.
 - Discuss any common examples of unique observations.
-

Question 17:

- Display Question 17 and complete as a class.
 - Reducing water usage is one of the simplest and quickest ways to mitigate climate change effects and protect water sources. Ask students to recall their water usage from Question 6 in Lesson 1. How can they actively reduce their usage in their daily life? (Don't forget that drinking water is an exception, you can drink as much as you need!)
-

Challenge question revisited – Chapter 2

Sample answer: Changes in the water cycle from pollution and climate change can hurt animals living near Triabunna Creek. If it rains too much, litter and other pollutants can wash into the creek, making the water dirty. This can harm fish and frogs that need clean water to live. Really dirty water is also more difficult to turn into clean and safe drinking water for people.

If it gets really hot, there might not be enough water for the animals and towns. Also, if there are too many nutrients in the water, it can cause algal blooms, which make it hard for fish to breathe, and can make the tap water taste earthy or musty. All these changes can make it tough for animals to find food and stay safe in their homes, which can end up disrupting entire ecosystems.

Lesson 3: Water quality (Questions 18–22)

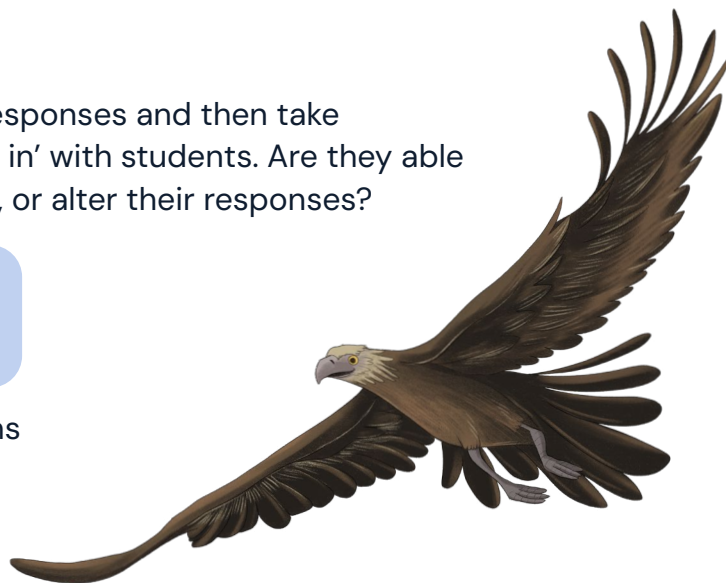
The teacher will read Chapter 3 of 'The Water Guardians: saving the creek' in its entirety to students prior to beginning Lesson 2.

Challenge question – Chapter 3

Ask the following question, record students' responses and then take opportunities throughout the lesson to 'check in' with students. Are they able to use their new knowledge to confirm, add to, or alter their responses?

Flynn soars high above, seeing the big picture of water issues across Tasmania.

If you could fly with Flynn, what water problems do you think you'd spot from the sky? How might seeing these issues from above help us understand and solve them better?



Question 18:

- Display Question 18 and view the flowchart as a class.
- All of these land activities can be managed to help protect the health of our water sources, but how? Discuss as a class and vote on the most innovative solutions.

Extension: Students bring their highest-voted innovation to life. e.g. Create a humorous sign encouraging pet owners (including farmers) to take their pets and animals to the toilet away from waterways!

Question 19: Salt water versus fresh water

- Display Question 19. As students slide between the images, prompt them with questions to encourage observation.
- What human activities might have caused the changes we see in the polluted image? How do you think these changes in the environment might affect people who live nearby? If you could add one thing to help clean up the polluted waterway, what would it be?

Optional: Give students a piece of paper and ask them to draw their own 'before' and 'after' scenes of a place they want to clean up (like their playground, home, or a park). Encourage them to share their drawings and discuss how they would feel after their clean-up effort.

Question 20:

- Display Question 20 and discuss. What are some community actions people can take to improve water quality?
-

Question 21:

- Display Question 21 and work as a class to place the sequence in the correct order.
- **Create a water quality comic strip**

Instructions

Provide students with blank comic strip templates (3–4 boxes per strip) or a sheet of paper where they can draw.

Comic creation

1. Ask each student or pair to create a short comic strip illustrating the four steps to improve a polluted water body. They should:
2. Draw a scene for each step (e.g. removing litter, planting native grasses, raising awareness, monitoring water quality).
3. Add dialogue or captions that explain what is happening in each scene.

Presentation

Comic strips can be shared with the class or displayed around the school/classroom to reinforce the steps to improve water quality and habitat health.

Question 22:

- Display Question 22 and complete the matching activity.
- **Role play**

Instructions

- Divide students into small groups and assign each group one of the sources of accidental littering (e.g. rubbish blowing out of cars, wheelie bins falling over, rubbish blowing away from picnickers, rubbish blowing out of bins, animals moving rubbish out of bins while looking for food).
- Ask each group to come up with a short skit (1–2 minutes) that illustrates their assigned source of littering and a corresponding preventive action. Encourage them to be creative and incorporate dialogue, sound effects, and gestures.
- Have each group perform their skit for the class. After each performance, briefly discuss the source of littering and the preventive action showcased.

Challenge question revisited – Chapter 3

Sample answer: If I could fly with Flynn the eagle, I think I would see a lot of problems with water. I might spot rubbish floating in rivers and lakes, which is really bad for fish and other animals. I could also see muddy places where the dirt is washing away through erosion, making the water dirty.

Seeing all this from up high would help me understand how big these problems are. I'd realise that if we don't take care of our water, it can hurt animals, people and plants everywhere. It would make me want to tell my friends and family to help clean up and plant more native trees and grasses on the waterway banks to keep the water clean. If everyone worked together, we could make sure our rivers and lakes stay nice and safe for all the creatures living there!

Post-session quiz

Encourage your class to complete the post-knowledge quiz independently. It is identical to the pre-knowledge quiz, so your students' responses will indicate improvements in their understanding of water conservation, water quality and water for health.

Question

Answer

1. Why did Aunty Laurel stop at Triabunna Creek?

B) To have a drink of fresh water

2. What did Jaz suggest planting to help improve the water conditions?

C) Native grasses

3. Why is it important to conserve fresh water?

B) Because fresh water is only about 3% of the Earth's water

4. True or false: The natural water cycle includes the steps of evaporation, condensation, infiltration, and run-off, but not transpiration.

False

5. What are some examples of accidental littering?

D) All of the above

Post-workshop discussion:

Invite your students to share any interesting or important lessons they have learned from the workshop. Revisit the three challenge questions and student responses. Identify gaps in the students' learning and review the relevant workshop activities if necessary.

At home activity pack

Students are encouraged to continue learning about water literacy at home, with their families. The TasWater 'At home activity pack' is a supporting resource that can be included in newsletters, on school communication apps, or shared on a learning management system (LMS). The 'At home activity pack' shares the key messages that students have learned with their class. It includes conversation starters and a fun family activity designed to extend water literacy from the classroom into the home.

Additional resources

Water cycle songs: GoNoodle has a catchy water cycle song with dance moves! Search 'GoNoodle – water cycle' online to find it.

Hydro Tasmania: Learn how Hydro Tasmania manages water sources and explore their educational resources at [Hydro Tasmania](#).

Bonorong Wildlife Rescue: Tasmania's largest 24/7 Wildlife Rescue Service supports thousands of animals each year. Save their hotline, 0447 264 625, and check out their '[What Can I Do?](#)' section.

Platypus protection: Rubbish can be deadly for wildlife. 'Seize it, Snip it, Bin it!' helps prevent loop trash injuries. Visit [Hobart Rivulet Platypus](#) and the [Australian Wildlife Society](#) for more.

Wind-proof your bins: Light recycling materials often escape in Tasmania's wind. Some Councils offer free bin latches to prevent spills without affecting collections. Contact your Council or purchase a latch online.

Dark Sky for wildlife: Birds like shearwaters and penguins are disoriented by nighttime light reflections. Learn more about the dark sky movement at [Dark Sky Tasmania](#).

Helping native wildlife: Make your area a haven for wildlife with native plants, water sources, and safe spaces. Find tips at [TassieCat](#) and backyard bandicoot tips from the [City of Hobart](#).

NASA water education: For a space-themed view on water's importance, search 'NASA water education' online.

If you have any questions or would like to share your water literacy activity experiences, please feel free to reach out by emailing communityprograms@taswater.com.au or to find out more about your water please visit www.taswater.com.au