

EDUCATOR NOTES:

Educator notes for Catchment management: [the story of a river](#), [water sustainability](#), [what's in a drop?](#), [the drain is just for rain](#) and [where the river meets the sea](#).

Learning and Engagement Approach

Elaborate upon the learning and engagement approach, along with the learning outcomes

This series is comprised of 5 different activities focused on waste and catchment management.

This activity is designed to engage students from 13 – 18.

The activities are intended to:

- facilitate an investigation
- help students understand that what happens across a catchment and that what happens on land impacts our waterways.
- understand the journey of water through the natural and urban water cycle
- learn how different pollutants can enter the waterways
- understand that competing pressures for water security in a catchment
- appreciate that what happens on land can impact our rivers and ocean
- implement the learning from the previous components of the activity series
- apply principles of scientific investigation and hypotheses testing

Safety Considerations

Include 'standard' safety considerations, along with activity-specific safety points.

- Check the weather before conducting any outdoors activity. If there is going to be extreme temperatures, storms or high wind, postpone the activity.
- Ensure that everyone is wearing closed shoes, hats, sunscreen and have a water bottle handy.
- Keep any allergy plan information at hand and any associated allergy medication.
- Ensure that everyone washes their hands after finishing these activities.

Materials and References

Hints and tips about obtaining the materials required for the activity/s.

The Story of a River

- Discover more about the [Natural Water Cycle](#) and learn [Why water is Important](#) to all life on earth.
- Sydney Water has more information on the [Natural Water Cycle](#) and [Sources of Water](#)
- Bureau of Meteorology website section on [Water Information](#) has a lot of background information on water across Australia
- SEQ Water fact sheet on the [Water Cycle](#)
- [Australian Topographic Drainage Divisions and River Regions map](#)
- Watch the short video from Sydney Water to learn about the [Water Cycle](#) (3 minutes)
- Try the ABC's [Catchment Detox Game](#) to see if you manage a river catchment and create a sustainable and thriving economy.

Water Sustainability

- Read National Geographic's article on the [Urban Water Cycle: Sustaining Our Modern Cities](#).
- Find out about the [Indigenous History of Sydney Olympic Park](#)
- Discover ways the [Environment of the Sydney Olympic Park](#) sites has been restored.
- Learn about Sydney Olympic Parks integrated approach to [water conservation and catchment management](#).
- Sydney Water [Urban Water Cycle Diagram](#)
- [Label the Urban Water Cycle](#) from Sydney Water
- [History of Sydney Olympic Park](#)
- Sydney Olympic Park: [Urban water reuse and integrated water management](#).
- Watch this video from [Sydney Olympic Park](#) on the changing land uses of the site over the last 250 years (9 minutes)

What's in a Drop?

- Find out about the use of water in the [Urban Water Cycle](#)
- Melbourne Water has tips on [Using and Saving Water at School](#)
- The Water Footprint network explains [What is a Water Footprint?](#)
- Use the Water Footprint assessment to calculate your water footprint [Water Footprints Assessment](#) for Australia.
- This video from Sydney Water shows you how to conduct a [Water Audit](#) (6 minutes)
- Watch this video from H2O Kids on [How much water do you eat](#) (18 minutes)

The Drain is just for Rain

- Read the [Stormwater](#) resources on the Australian Government Your Home website.
- Sydney Water has information on [Stormwater and urban sensitive urban design](#). You can also look for resources on Stormwater from your local or state water authority and local council.
- Use these resources from Sydney Water on conducting a [Stormwater assessment](#).
- Watch this video from Sydney Water the [Stormwater network](#) across Sydney (6 minutes)

Where the River meets the Sea

- Find out more about [Wastewater and recycling](#) and [Stormwater](#) with Sydney Water.
- Discover more ways [Conserve Water](#).
- How does water play a role in [creating Liveable Cities?](#)
- Discover [What's in Wastewater](#) with this resources
- Watch the short video from Sydney Water why you should keep [wipes out of pipes](#) (2.5 minutes)

Site Suggestions

Ideas and tips for choosing a site, working on a site, travelling to a site.

- Some of these activities are best conducted in a wet space or outside
- Choose a shady place if running the activities outside

Educator Tips

The Story of a River

- There are small quantities of many resources required for this activity. Many of these resources you already have in or around your home, centre or school.
- As a pre workshop activity ask your students to help collect the soil, sand, small rocks and twigs required for the activity.
- Make substitutions where needed ie. you can use any chocolate powder product or substitute with ground coffee.
- If you have a small group you can remove some of suggested items. This works best in the story when there are 2 items going in the container of water eg. at stage 1, 4, 6, or 7
- If you have a larger class you can do multiple jars of the same contents.

Water Sustainability

- Watch the videos and discuss other program resources prior to the activity to allow more time for the activities.

What's in a Drop?

- Watch the water audit videos and discuss other program resources prior to the water audit to allow more time for the activities.

The Drain is just for Rain

- Watch the [Stormwater network](#) video and identify stormwater features in your local area and discuss whether they natural features or urban constructions prior to the Stormwater assessment to allow more time for the activities.

Where the River meets the Sea

- If you have a larger class you can do run the Sink, float or dissolve experiment in groups. All you need is multiple jars of the same contents.

Elaborate on the learning activity with any suggestions or teaching points. Provide suggestions for completing the activity sheet.

Community Engagement

Ideas and tips for engaging with local community groups to enhance learning. Think about local Landcare groups, Council rangers, Indigenous elders who can help with the learning activity.

- Ask your Landcare group about water security issues in your local area.
- Use The National Landcare Directory to find a community environmental 'care' group near you.
- Landcare groups are experienced in looking after local places and understanding local flora and fauna. They often are a great source for local native plant species. Find out what plant can reduce bank erosion and how plants can slow down runoff.
- Look to the Junior Landcare Community Page for organisations to contact to help support your investigations.

Aligning this activity

- [Every drop counts, being water wise!](#)
- [Water for Wildlife](#)
- [Waterways: behaviour change](#)
- [Waterways: clean-up](#)

Extension Activities

The Story of a River

Make your own catchment: Use the activity sheet to make your own catchment. In 2 groups make a Natural or Urban catchment model. Compare the flow of water between the 2 models.

Water Sustainability

Extension 1

Contact your local Indigenous groups to find out the traditional words for water and rivers. Ask about the cultural significance of your local waterways and how resources were used.

Extension 2

Research changes in land use in your local area over time. How has access to clean freshwater changed in your local area over the last 500 years. Create a timeline of these changes.

What's in a Drop?

Extension 1

The Water Footprint network explains [What is a Water Footprint?](#) Use the [personal water footprint calculator](#) to calculate your personal water footprint.

Extension 2

Make a water management plan for your school.

The Drain is just for Rain

Extension 1

Use the map and urban water cycle checklist you created in the water sustainability activity to determine where the Stormwater from your school ends up.

Extension 2

Now that you have done a stormwater assessment, look to creating an onsite Junior Landcare group to begin to monitor areas of concern regularly, develop innovative ideas, and clean up to help minimise waste impacts in your local environment.

Where the River meets the Sea

Extension 1

Monitor the toilet paper, tissue and wet wipes to see how long it takes them to break down in water. Check on your experiment each day over the next 4 weeks to see and record if they have broken down.

Extension 2

Now that you understand more about your local catchment, how can you share your discoveries to motivate others? Devise an onsite project to gather support and increase awareness with your peers and the community.

Curriculum and Framework Links

SCIENCE

Year 7: [ACSSU111](#), [ACSSU112](#), [ACSSU116](#), [ACSHE120](#), [ACSHE121](#), [AC SIS124](#), [AC SIS125](#), [AC SIS130](#), [AC SIS131](#), [AC SIS132](#).

Year 8: [ACSHE135](#), [AC SIS140](#), [AC SIS145](#), [AC SIS146](#), [AC SIS234](#).

Year 9: [ACSSU175](#), [ACSSU176](#), [AC SIS164](#), [AC SIS165](#), [AC SIS170](#), [AC SIS172](#), [AC SIS174](#)

Year 10: [ACSSU189](#), [ACSHE191](#), [ACSHE194](#), [AC SIS199](#), [AC SIS204](#), [AC SIS206](#), [AC SIS208](#)

Biology

[Unit 1: Biodiversity and the interconnectedness of life](#)

Earth and Environmental Science

[Unit 1: Introduction to Earth systems](#)

[Unit 3: Living on Earth - extracting, using and managing Earth resources](#)

[Unit 4: The changing Earth - the cause and impact of Earth hazards](#)

HUMANITIES AND SOCIAL SCIENCES

Year 7: [ACHASSI152](#), [ACHASSI155](#), [ACHASSI154](#), [ACHASSI155](#), [ACHASSI156](#), [ACHASSI158](#), [ACHASSI159](#), [ACHASSI160](#), [ACHASSI161](#), [ACHASSI162](#), [ACHASSK183](#), [ACHASSK185](#), [ACHASSK187](#),

GEOGRAPHY

Year 7: [ACHGK037](#), [ACHGK038](#), [ACHGK040](#), [ACHGK042](#), [ACHGS047](#), [ACHGS048](#), [ACHGS049](#), [ACHGS050](#), [ACHGS051](#), [ACHGS052](#), [ACHGS054](#),

Year 8: [ACHGK048](#), [ACHGK050](#), [ACHGK051](#), [ACHGK053](#), [ACHGS055](#), [ACHGS056](#), [ACHGS060](#), [ACHGS062](#)

Year 9: [ACHGK065](#), [ACHGS068](#), [ACHGS070](#),

Year 10: [ACHGK070](#), [ACHGK073](#), [ACHGK074](#), [ACHGK075](#), [ACHGS079](#)

[Unit 1: Natural and ecological hazards](#)

[Unit 2: Sustainable places](#)

[Unit 3: Land cover transformations](#)

HEALTH AND PHYSICAL EDUCATION

Year 7 & 8: [ACPPS073](#)

ETHICAL UNDERSTANDING

[Exploring values, rights and responsibilities.](#)

PERSONAL AND SOCIAL CAPABILITY

[Social awareness](#)

CURRICULUM CONNECTIONS

[Outdoor Learning](#)



CROSS CURRICULUM PRIORITY

[Sustainability](#)