

Years 6 to 8 geography and science

School water audit

Australian Curriculum links: Year 7 Geography

The nature of water scarcity and ways of overcoming it, including studies drawn from Australia and West Asia and/or North Africa (ACHASSK185)

Science

Some of Earth's resources are renewable, including water that cycles through the environment, but others are non-renewable (ACSSU116)

English

Plan, draft and publish imaginative, informative and persuasive texts, selecting aspects of subject matter and particular language, visual, and audio features to convey information and ideas (ACELY 1725)

Sustainability cross-curriculum priority

In this lesson sequence, students conduct a school water audit and devise an evidence-based action plan to reduce water wastage in the school. They then write a report to the school environment committee recommending three actions that the committee could take to reduce water use in the school.

Because Australia's climate is highly variable, most places in Queensland can experience water scarcity from time to time. One key factor in managing water resources wisely is to reduce water wastage. Students recognise that they can make a difference by developing and helping to implement a 'Waterwise school action plan'.

This audit could be conducted by the school environment group out of class time.

Equipment

For the class

display digitally or make enlarged hard copies of:

- [School water audit](#) developed by Sydney Water
School map
- [Detecting leaks and reading your water meter](#)
'Health and safety rules' sheet (resource 1)
'Waterwise management program' (resource 2)

For each team

- one copy of the [School water audit](#)
- one copy of the school map (with their allocated survey area clearly marked)
- one stopwatch
- a one litre measuring plastic jug
- optional: 'School action plan report plan' (resource 3)

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Preparation

Explain this activity to your school administration, highlighting the fact that it could save the school money. A number of Queensland schools who completed water audits discovered water leaks in the school pipes. On one occasion, before outdoor taps were removed, a school found that someone was washing their boat on the school oval on weekends using school water at school expense!

The class could be shown how to read the school water meter and a small team of students in your class assigned to gather water meter data over a one-week period. There may be concerns about possible vandalism to the water meter so check that the school administration approves. If the students are not permitted to do this activity, allocate time for yourself or another member of the school staff to read the meter to provide the data for students.

Approach each of the affected staff members to explain what is going to happen when student teams conduct their school water audit and ask permission for your students to work in their area.

Identify the allocated areas in your school that have water devices. Prepare a school map for each group with their designated area clearly marked. Possible audit areas within the school grounds include:

- boys' toilets
- girls' toilets
- staffroom, staff toilets, offices
- classroom taps (include library, learning support)
- bubblers and disabled/accessible toilets
- other rooms and buildings such as the canteen, hall, gym, store rooms and maintenance room.

Locate the school water meter and follow the instructions in the [Detecting leaks and reading your water meter](#) information sheet.

Prepare a hard copy chart or a digital spreadsheet to collate and display the data collected by student groups. Make sure that the headings align with the headings on the 'Audit recording sheet', page 3 of the 'School water audit'.

Lesson steps

Before the water audit

1. Briefly discuss how water is treated, the cost of delivering safe water to the school and why it is important that the school community uses its water wisely. Explore ideas for reducing the amount of water that is used at school.
2. Ask students to list the water devices in the school and which of those devices might leak.
3. If permitted, take students to the school water meter and show them how to read it. Record the reading. If possible, take readings at the same time of day for a week to record total water usage in the school. Calculate the average daily water use and record in a table.
4. Explain that students will work in groups of three to complete a school water audit of the water devices in the school.
5. Display the 'School water audit' instructions on a screen or divide the class into their groups and give each group a copy of the 'School water audit'. Read the first page of the audit and explain any unfamiliar words or ideas.

- Practice using a tally to count devices and explain how to use a stopwatch as suggested in the 'School water audit' instructions.

On the day of the water audit

- Discuss the health and safety rules for the activity such as not to run in wet areas and to wash their hands well with soap after they complete the audit (resource 1).
- Display page 2 of the 'School water audit' and review the instructions. Ask the groups to allocate roles such as group leader, recorder and reporter. One person from each group collects the equipment they need, their 'School water audit' handout and school map with their designated area.
- Students conduct their audit.

After the audit

- Groups follow the instructions on page 2 of the 'School water audit' and discuss the findings.
- Draw the 'Problems and solutions' table (figure 1) on the board.

Problem	Solution	Who is responsible for fixing?

Figure 1 Problems and solutions

- Ask each group to compile a list of problems and possible solutions they identified in their designated area. The reporter then presents their ideas to the class.
- As a class, formulate a 'Waterwise management program' (Resource 2) that outlines water saving actions and performance targets. Note that the targets need to be realistic. Consult with relevant members of the school community e.g. groundsperson. This list can then be presented formally to the school administration, environment committee and/or the parents and citizens association representatives for action.
- Optional: Students complete a report outlining their Waterwise school action plan to present to the school administration or environment committee using the data that the class collected from the 'School water audit' and personal observation (Resource 3).
- At the end of this lesson, focus students' thinking on the actions that individuals within the school can take to reduce water wastage. Ask students to identify three personal actions that they can take to save water at school or at home. Collate student ideas and record on the board or on butcher's paper for prominent display in the classroom.

Ideas could include:

- checking that taps are not leaking or dripping
- using toilet half flush
- turning off the tap while brushing teeth
- using a cup of water when brushing teeth
- taking short showers.

Additional Waterwise resources from the Queensland Government include the [Be Waterwise: make a difference today video](#) [1:57] and the [Bucket loads of savings posters and brochures](#).

Resource 1 Health and Safety Rules

- ◆ Move into your groups quickly and quietly
- ◆ Speak softly
- ◆ Stay with your group
- ◆ Perform your role
- ◆ Walk in and around buildings, showing respect to staff and classes
- ◆ Wash your hands with soap after the activity
- ◆ Use equipment such as the stopwatch carefully
- ◆ Stay dry
- ◆ DO NOT touch hot water taps



Resource 2 Waterwise management program

Black spots (in priority order)	Water-saving actions	Performance target
» Classrooms	Dripping tap in Year 1 classroom to have washer replaced	Groundsperson to repair by end of week
» Bubblers		
» Toilets and showers		
» Other buildings		
» Outdoors—grounds		
» Outdoors— playground areas		

Resource 3 School action plan report plan

The task:

You have been asked to write a report to the school environment committee recommending three actions that the committee could take to reduce water use in the school. You need to convince the school environment committee to carry out your priority actions so you will need to be very persuasive in your report. In a persuasive report, you must justify every point you make with supporting evidence or facts.

To complete the task, you need to:

- analyse the data from the school water audit
- choose the three most practical and important actions that the school environment committee can undertake
- write a persuasive report that explains why you chose the three priority actions.

Step 1. Priority actions

Using the class data from the school water audit and your personal observations, identify three priorities for action by the school environment committee. For each priority action, give the reasons for your choice.

a) Create a table to list the three priority actions and the reasons for each choice. Show it to your teacher.

Step 2. Planning your school action plan report

The school environment committee has requested that you use the following format for your report:

Introduction: explain why there is a problem; describe how your class has investigated the problem; discuss the school's water meter readings.

Taking action: explain each of the three priority areas for action and the reasons you chose them, using the data from the school water audit; include suggestions for implementing each action.

Recommendations: Write a concluding paragraph in which you restate the main points of your report. List the main recommendations from your report.

b) Complete the plan for your persuasive report and show it to your teacher before writing your first draft.