Government of **Western Australia**
School Curriculum and Standards Authority

Humanities and Social Sciences: Geography

Teaching, learning and assessment exemplar

Year 7

Water in Australia

Acknowledgement of Country

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

Background

This teaching, learning and assessment exemplar (the exemplar) has been developed by the School Curriculum and Standards Authority (the Authority) as part of the *School Education Act Employees (Teachers and Administrators) General Agreement 2017* (Clause 61.1–61.3).

Disclaimer

Any resources such as texts, websites and so on that may be referred to in this document are provided as examples of resources that teachers can use to support their learning programs. Their inclusion does not imply that they are mandatory or that they are the only resources relevant to the course. Teachers must exercise their professional judgement as to the appropriateness of any they may wish to use.

This resource utilises electronic web-based resources, such as videos and image galleries. Teachers should be present while an electronic resource is in use and close links immediately after a resource, such as a video has played to prevent default 'auto play' of additional videos. Where resources are referred for home study, they should be uploaded through Connect, or an equivalent system, that filters advertising content.

Contents

The Western Australian Curriculum

The *Western Australian Curriculum and Assessment Outline* (the *Outline* – https://k10outline.scsa.wa.edu.au/) sets out the mandated curriculum, guiding principles for teaching, learning and assessment, and support for teachers in their assessment and reporting of student achievement. The *Outline* recognises that all students in Australian schools, or international schools implementing the Western Australian Curriculum, are entitled to be given access to the eight learning areas described in the *Alice Springs* (*Mparntwe*) *Education Declaration*, December 2019.

The Humanities and Social Sciences curriculum

The mandated curriculum is presented in the year level syllabus documents.

The Humanities and Social Sciences curriculum delivers a sequential and age-appropriate progression of learning with the following key elements:

- a year level description that provides an overview of the context for teaching and learning in the year
- a series of content descriptions, populated through strands and sub-strands, that sets out the knowledge, understanding and skills that teachers are expected to teach and students are expected to learn
- an achievement standard that describes an expected level that the majority of students are achieving by the end of a given year of schooling. An achievement standard describes the quality of learning (e.g. the depth of conceptual understanding and the sophistication of skills) that would indicate the student is well placed to commence the learning required in the next year.

This exemplar

This Humanities and Social Sciences exemplar articulates the content in the *Outline* and approaches to teaching, learning and assessment reflective of the Principles of Teaching, Learning and Assessment. This exemplar demonstrates a sequence of teaching and learning, including suggested assessment points, for 16 lessons.

Catering for diversity

This exemplar provides a suggested approach for the delivery of the curriculum and reflects the rationale, aims and content structure of the learning area. When planning the learning experiences, consideration has been given to ensuring that they are inclusive and can be used in, or adapted for, individual circumstances. It is the classroom teacher who is best placed to consider and respond to (accommodate) the diversity of their students. Reflecting on the learning experiences offered in this exemplar will enable teachers to make appropriate adjustments (where applicable) to better cater for students' gender, personal interests, achievement levels, socio-economic, cultural and language backgrounds, experiences and local area contexts.

Using this exemplar

This teaching, learning and assessment exemplar provides suggestions to support the delivery of the mandated curriculum content. The exemplar provides:

- a teaching and learning sequence
- the mandated curriculum content to be taught at each point of the teaching and learning sequence, suggested resources, a sample assessment task and marking key
- the number of lessons to deliver the teaching and learning experiences
- learning intentions and support notes that may provide focus questions and additional information and/or examples to assist with the interpretation of curriculum content
- support notes to assist teachers to unpack the content and support teaching and learning experiences
- teaching and learning experiences that outline the structure of the lesson. These explicitly state each activity that the lesson will progress through and the key focus area for that activity.

Links to electronic resources

This sequence of lessons may utilise electronic web-based resources, such as videos and image galleries. Teachers should be present while an electronic resource is in use and close links immediately after a resource, such as a video, has played to prevent default 'auto play' of additional videos. Where resources are referred for home study, they should be uploaded through Connect, or an equivalent system, that filters advertising content.

Resources legend

The following symbols are used in this teaching, learning and assessment exemplar to provide teachers with information on the nature of the resources included in the lesson sequence.

Symbol	Name	Description	Examples of use
	Multimedia	Video or audio materials to be shown to the class	• YouTube clips • documentary • podcasts
	Webpage	Online information source	• news article • museum website • government website
	Student resource	Resource that students need to access for learning	• student worksheets • graphic organiser template • interactive webpage
	Lesson materials	Materials that require teacher preparation prior to lesson	• collection of images • card-sort activities • materials for practical activities
	Teacher support resource	Additional information to support teachers in the suggested lesson	• thinking routine instructions • example of completed graphic organisers • additional information on topic

Best practice

Teaching and learning

The teaching and learning opportunities offered in this exemplar are not exhaustive. Thus, teachers are encouraged to make professional decisions about which learning experiences, and the sequence in which they are delivered, are best suited to their classroom context, taking into account the availability of resources and student ability.

This sample may prove a useful starting point for amplifying creativity in the classroom, while presenting the embedded expectations of the Western Australian Curriculum: Humanities and Social Sciences.

Teachers may find opportunities to incorporate the General Capabilities and the Cross-curriculum Priorities into the teaching and learning program.

Ways of teaching – teachers can locate additional information on the Ways of teaching from the School Curriculum and Standards Authority (the Authority) website https://k10outline.scsa.wa.edu.au/home/wa-curriculum/learning-areas/humanities-and-social-sciences/overview/humanities-and-social-sciences-ways-of-teaching.

Assessing

Assessment, both formative and summative, is an integral part of teaching and learning. Assessment should arise naturally out of the learning experiences provided to students. In addition, assessment should provide regular opportunities for teachers to reflect on student achievement and progress. As part of the support it provides for teachers, this exemplar includes suggested assessment points. It is the teacher's role to consider the contexts of their classroom and students, the range of assessments required, and the sampling of content descriptions selected to allow their students the opportunity to demonstrate achievement in relation to the year level achievement standard. Teachers are best placed to make decisions about whether the suggested assessment/s are used as formative or summative assessment and/or for moderation purposes.

Ways of assessing – a range of assessment strategies that can enable teachers to understand where students are in their learning is available on the Authority website https://k10outline.scsa.wa.edu.au/home/wa-curriculum/learning-areas/humanities-and-social-sciences/overview/humanities-and-social-sciences-ways-of-assessing.

Reflecting

Reflective practice involves a cyclic process during which teachers continually review the effects of their teaching and make appropriate adjustments to their planning. The cycle involves planning, teaching, observing, reflecting and replanning.

This exemplar supports reflective practice and provides flexibility for teachers in their planning. The exemplar shows how content can be combined and revisited throughout the year. Teachers will choose to expand or contract the amount of time spent on developing the required understandings and skills according to their reflective processes and professional judgements about their students' evolving learning needs.

Water in Australia

This exemplar can be used to develop students' understanding of key geographical concepts and skills as they apply to water scarcity and what causes it, why it is a problem and ways of overcoming water scarcity. Studies drawn from across Australia at local, regional and national scales can be used to inform learning. Students have the opportunity to participate in fieldwork through a school-based water audit to authentically apply what they have learned during the unit.

If the suggested learning experiences and the relevant syllabus content for this unit have been studied, students will be well positioned to address the requirements of the assessment task to the best of their ability. The assessment task requires students to collect a range of sources about water challenges in the place they live as a study of water challenges and management strategies.

Year level description

In the early adolescence phase of schooling, students align with their peer group and begin to question established conventions, practices and values. Learning and teaching programs assist students to develop a broader and more comprehensive understanding of the contexts of their lives and the world in which they live.

In Humanities and Social Sciences, students assume increased responsibility and engage in important decision making within the class and school to support their growing independence and collaborative skills. Exploration of alternative ideas, perspectives and world views allows students to see themselves as active participants in their own continuing development and that of their society.

In Year 7, students develop increasing independence in critical thinking and skill application, which includes questioning, researching, analysing, evaluating, communicating and reflecting. They apply these skills to investigate events, developments, issues, and phenomena, both historical and contemporary.

Students continue to build on their understanding of the concepts of the Westminster system and democracy by examining the key features of Australia's democracy, and how it is shaped through the Australian Constitution and constitutional change. The concepts of justice, rights and responsibilities are further developed through a focus on Australia's legal system.

An understanding of the concepts of making choices and allocation is further developed through a focus on the interdependence of consumers and producers in the market, and the characteristics of successful businesses, including how innovation and entrepreneurial behaviour contribute to business success.

The concepts of place, space, environment, interconnection, sustainability and change continue to be developed as a way of thinking and enable students to inquire into the nature of water as a natural resource. The concept of place is expanded through students' investigation of the liveability of their own locality. They apply this understanding to a wide range of places and environments on the full range of scales, from local to global, and in a range of locations.

Students develop their historical understanding through key concepts, including evidence, continuity and change, cause and effect, perspectives, empathy, significance and contestability. These concepts are investigated within the historical context of how we know about the Deep Time History of Australia and the world's oldest continuous cultures, and the development of ancient societies.

Achievement standard

By the end of the year:

Students construct a range of questions and use a variety of methods to select, collect and organise information and/or data from appropriate sources. They develop criteria to determine the usefulness of primary and/or secondary sources for a purpose. When interpreting sources, students identify their origin and purpose, and distinguish between fact and opinion. They interpret information and/or data to identify points of view/perspectives, relationships and/or trends, and to sequence events and developments. Students apply subject-specific skills to translate information and/or data from one format to another, in both familiar and unfamiliar situations. They draw simple evidence-based conclusions in a range of contexts. Students represent information and/or data in appropriate formats to suit audience and purpose. They develop texts using appropriate subject-specific terminology and concepts. Students use evidence to support findings and acknowledge sources of information.

Students describe how democracy in Australia is shaped by the Commonwealth Constitution. They describe the operation of Australia's federal structure of government and the role of parliament, within the Westminster system. Students identify rights and responsibilities of being a participant in the legal system and describe how the legal system aims to provide justice.

Students describe how the price of goods and services results from interdependence between consumers and businesses, as a consequence of making choices. They describe how innovation and entrepreneurial behaviour provide benefits to individuals and the wider community.

Students describe the changes caused by interconnections between people, places and natural environments, and the alternative strategies used to manage the changes. They describe the features of liveable places, and how and/or why places are perceived and valued differently.

Students describe the ways that history can be examined, through archaeological, historical, and cultural evidence. They identify past events and developments that have been interpreted in different ways, and suggest reasons for change and continuity over time.

Lessons 1–16

Water in Australia

Lesson 1

The Western Australian Curriculum content addressed in this lesson is below.

Water in Australia

- The classification of environmental resources as renewable or non-renewable

Analysing

- Apply subject-specific skills and concepts in familiar and new situations

Resources

Woodside Australia Science Project (n.d.) *Renewable & Non-renewable Resources – Student Review* webpage https://www.wasp.edu.au/mod/resource/view.php?id=11

Woodside Australia Science Project (n.d.) *Timescale for Renewal – Student Research* webpage https://www.wasp.edu.au/mod/resource/view.php?id=8

Woodside Australia Science Project (n.d.) *What are Resources – Teacher Notes* webpage https://www.wasp.edu.au/mod/resource/view.php?id=544

Woodside Australia Science Project (n.d.) *Timescale for Renewal – Teacher Notes* webpage https://www.wasp.edu.au/mod/resource/view.php?id=9

Teacher information

Environmental resources can be classified as renewable or non-renewable.

- Renewable environmental resources are those which are, or can be, renewed within a relatively short time; for example, water through the water cycle; and plants, animals and marine life through reproduction. However, overuse of a renewable resource can lead to its disappearance, as with the overexploitation of a fishery or the over-extraction of groundwater.
- Non-renewable environmental resources are those that cannot be renewed; for example, minerals. Soils that have been degraded can only be renewed over long timescales.

Lesson outline

Learning intention/s	Success criteria
Students will: • understand the differences between renewable and non-renewable resources and their significance in managing environmental sustainability.	Students can: • identify and categorise examples of renewable and non-renewable resources • explain the importance of conserving non-renewable resources and describe ways to sustainably use renewable resources.

Introduction

- Students brainstorm as many examples of environmental resources as possible. Students work with a partner to place the examples into student-generated categories.

Main activities

- Provide students with access to *the Renewable & Non-renewable Resources – Student Review* webpage.
- Students complete the activities on the *Renewable & Non-renewable Resources – Student Review* webpage and *Timescale for Renewal – Student Research* webpage.
- Using completed student activities, have a class discussion about the importance of conserving non-renewable resources and why and how we can sustainably use our renewable resources.

Review of learning

- Students write a definition of renewable and non-renewable resources in their notes using their own words.

Lesson 2

The Western Australian Curriculum content addressed in this lesson is below.

Water in Australia

- The location, distribution and variability of Australia's water resources

Analysing

- Interpret information and/or data to identify key relationships and/or trends displayed in various formats

Resources

Appendix A: *See, Think, Wonder* thinking routine

Appendix A: Water resource question challenge

Teacher Information

Water quantity describes the total amount of water in a specific area or system, including both surface and ground water. Water variability describes the fluctuations in water availability over time due to both natural and human-induced factors.

Lesson outline

Learning intention/s	Success criteria
Students will: • explore the concepts of water location, distribution and variability.	Students can: • describe key geographical concepts related to water, including place, interconnection, change, sustainability, and scale, using provided prompts • create questions and observations about water resources.

Introduction

- Provide students with the definitions of the concepts of water quantity (amount) and water variability (type) and describe the concepts using some of the following questions framed around the key concepts as prompts:
  - Place
    - Do all places have the same amount of water resources?
    - Do all places have the same amount of rainfall every year?
  - Interconnection
    - What is the link between having good water resources and the quality of life for a population?
  - Change
    - Does the amount of water a place has change over time?
  - Sustainability
    - Do we have sufficient water for the future?
    - Do we need to look after our water resources?
    - Does everyone agree with how we look after our water resources?
  - Scale
    - Are water problems localised to one small area, or are they a much larger scale problem?

Main activity

- Provide each student with a copy of the *See, Think, Wonder* activity (Appendix A).
- Students complete the *See, Think, Wonder* activity (Appendix A), and participate in a class discussion where they share their ideas about the images.

Review of learning

- Provide each student with a copy of the template for the *What's the question* activity (Appendix A).
- Introduce the activity as a competition. Explain to students that they can work individually or with a partner and that they have five minutes to write as many unique questions as possible, keeping in mind that the answer for each question must be water.

Lesson 3

The Western Australian Curriculum content addressed in this lesson is below.

Water in Australia

- The location, distribution and variability of Australia's water resources

Communicating and reflecting

- Develop texts, particularly descriptions and explanations, using appropriate subject-specific terminology and concepts that use evidence to support findings, conclusions and/or arguments, from a range of sources

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Resources

Seriously Social (2024) *Water in Australia* video
https://www.youtube.com/watch?v=DX2eerPmAi4

Bureau of Meteorology (2025) *125 Years of Australian rainfall* webpage
http://www.bom.gov.au/climate/history/rainfall/

Study Helpers (n.d.) *PQE* instructional strategy
https://studyhelpersblog.wordpress.com/pqe/

Geography Teachers Association of NSW (2023) *Spiral of Skills 7–10 (page 3)* teacher resource https://www.gtansw.org.au/wp-content/uploads/2023/10/11_GTA-Geography-Bulletin-Issue-3-2023_Spiral-of-Skills-7-10.pdf

Teacher information

The *Pattern-Quantify-Exceptions* (*PQE*) method refers to three steps in analysing data, particularly in maps:

1. Pattern – describe the pattern referring to specific places and using geographical terminology.
2. Quantify – provide specific data for countries and places to support a description of the pattern.
3. Exceptions – identify any exceptions to the pattern described.

A trend is a pattern in change over time in a set of data, or a development or a change, which is evident in a time period. For example, the amount of annual rainfall in the Southwest of Western Australia has decreased by 10 to 20 per cent since around 1970.

Lesson outline

Learning intention/s	Success criteria
Students will: • explore variability of rainfall patterns and their impacts in Australia.	Students can: • analyse rainfall data to identify trends, make predictions, and explain patterns using geographical reasoning • describe rainfall patterns in a given year in the form of a *PQE* response.

Introduction

- Show students the *Water in Australia* video. Whilst watching, students identify one thing they learned, one interesting fact, and one question from the video.

Main activity

- Show students the *125 Years of Australian rainfall* webpage and explain to students what the maps are showing. Students should understand that:
  - the maps represent the difference between the rainfall in that year and the average rainfall between 1900 and 2023
  - areas in red represent places that have below average rainfall in those years
  - areas in blue represent places that have above average rainfall in those years.
- Students work with a partner to answer the following questions:
  - Are there more years where rainfall is below average or above average?
  - Which year is closest to having the average rainfall across Australia? Explain your answer.
  - Identify some of the years where some places had above average rainfall and other places had below average rainfall.
  - Predict whether rainfall will be above or below average for 2024–25. Justify your response.
  - Describe some of the challenges that may occur when rainfall is below average.
  - Describe some of the challenges that may occur when rainfall is above average.

Review of learning

- Model writing a *PQE* response to the question 'Describe the rainfall patterns in Australia in 2019'.
- Students use the *PQE* instructional strategy to respond to the question 'Describe the rainfall patterns in Australia in 2023'.

Lessons 4–5

The Western Australian Curriculum content addressed in these lessons is below.

Water in Australia

- The location, distribution and variability of Australia's water resources

Questioning and researching

- Use a variety of methods to collect relevant information and/or data from a range of appropriate sources, such as print, digital, audio, visual and fieldwork

Communicating and reflecting

- Represent information and/or data using appropriate formats to suit audience and purpose

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Resources

Class set of atlases

Project Zero: Harvard Graduate School of Education (2015) *I used to think … Now I think* thinking routine https://pz.harvard.edu/sites/default/files/I%20Used%20to%20Think%20-%20Now%20I%20Think_2.pdf

Teacher information

- In these two lessons, students are going to create a class display/poster to show the quantity and variability of Australia's water resources across Australia. Students will research and select two sources, e.g. a map, graph, image, information and/or data, which contributes to the big picture of how Australia's water resources compare in two regions of Australia.
- Consider using a simple *PQE* template, shown below, for students to record their responses.

Title of source: _____

Focus	Notes and details
Pattern: the general pattern, what stands out?	
Quantify: add specific numeric details and names of places to the pattern/s described	
Exception: what does not fit with the general pattern?	
References for bibliography	

Lesson outline

Learning intention/s	Success criteria
Students will: • investigate water resource quantity and variability across Australia to understand differences in water availability and distribution across the continent.	Students can: • compare water resource data for two regions in Australia using the *PQE* method • explain spatial distribution patterns, trends, or relationships of water across two regions in Australia.

Introduction

- Provide students with a list of Australia's different geographical regions (either states or regions within states, such as the Southwest and Pilbara in Western Australia) and an atlas. Using the atlas, students predict a ranking of the regions based on the quantity of water resources they have access to.

Main activity

- Allocate each student two Australian regions for which they will compare water quantity and variability.
- Using online resources, students find two sources (e.g. a map, graph, image, information and/or data), one for each region, to compare Australia's water quantity and variability.
- Students use the *PQE* method to analyse the information and/or data within each source.
- Using the two sources, students create a class/display/poster with an explanation of their *PQE* analysis of the spatial distribution patterns, trends and/or relationships in the two sources.

Review of learning

- Students complete the *I used to think … Now I think …* thinking routine to identify some of the things they learned about water variability from the other students' explanations.

Lesson 6

The Western Australian Curriculum content addressed in this lesson is below.

Communicating and reflecting

- Represent information and/or data using appropriate formats to suit audience and purpose

Resources

Geography Teachers Association of NSW (2022) *Weather and Climate Skills* pdf
https://www.gtansw.org.au/wp-content/uploads/2022/04/14_GTA-Bulletin-Issue-2-2022_Weather-and-climate.pdf

Wimble Don (2016) *Climate Graphs – Geo Skills* video
https://www.youtube.com/watch?v=Wv6yHl0LpgM

Weatherzone (2024) *Perth Climate* webpage
https://www.weatherzone.com.au/station/SITE/9225/climate

Teacher information

- This lesson requires students to construct a climate graph from data provided in a source such as *Weatherzone*. The *Climate Graphs – Geo Skills* video can be used by teachers to show students how to construct a climate graph.

Lesson outline

Learning intention/s	Success criteria
Students will: • develop the skills to construct and interpret climate graphs and describe the climate of a chosen location.	Students can: • construct an accurate climate graph using provided climate data • describe the climate of a chosen location using appropriate terminology.

Introduction

- Watch the *Climate Graphs – Geo Skills* video to introduce students to how to construct a climate graph.

Main activity

- Provide students with access to climate data for a location in Australia.
- Model how to construct a climate graph.
- Students construct their own climate graph for a location.
- Using the *Source E: Describing climate* terminology guide on page 5 of the *Weather and Climate Skills* pdf, students describe the climate for their location.

Review of learning

- Students complete the matching exercise on page 6 of the *Weather and Climate Skills* resource.

Lessons 7–8

The Western Australian Curriculum content addressed in these lessons is below.

Water in Australia

- Water scarcity and what causes it; why it is a problem; and ways of overcoming water scarcity

Analysing

- Use criteria to select relevant information and/or data, such as accuracy, reliability, currency and usefulness to the question

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Resources

World Bank Group (2017) *How to Move Beyond Water Scarcity in the Middle East and North Africa* webpage
https://www.worldbank.org/en/news/infographic/2017/09/08/beyond-scarcity

Australian Museum (n.d.) *Water around the world* webpage
https://australian.museum/get-involved/citizen-science/streamwatch/water-catchment/streamwatch-water-around-the-world/

Project Zero: Harvard Graduate School of Education (2015) *Looking: ten times two* thinking routine
https://pz.harvard.edu/sites/default/files/Looking%20-%20Ten%20Times%20Two_1.pdf

Climate Council (2018) *Deluge and drought: Water security in a changing climate* webpage
https://www.climatecouncil.org.au/resources/water-security-report/

Australian Government (n.d.) *Water in Australia* website
https://www.nationalwatergrid.gov.au/about/water-in-australia

New South Wales Government (2024) *Peer and Self-Assessment for Students* teacher resource
https://education.nsw.gov.au/teaching-and-learning/professional-learning/teacher-quality-and-accreditation/strong-start-great-teachers/refining-practice/peer-and-self-assessment-for-students

Lesson outline

Learning intention/s	Success criteria
Students will: • explore the causes of water scarcity and why it is a problem.	Students can: • gather relevant information and data from provided resources to create an infographic on water scarcity • provide constructive feedback on a peer's infographic using a collaboratively developed checklist.

Introduction

- Show students the *How to Move Beyond Water Scarcity in the Middle East and North Africa* and *Water around the world* webpages and conduct the *Looking: Ten times two* thinking routine.
- Following the thinking routine, have a class discussion about the advantages of using an infographic to display information.

Main activity

- Provide students access to the *Deluge and drought: Water security in a changing climate* webpage and the *Water in Australia* website.
- Only using the provided websites, instruct students to select and record information and/or data to use and create an A4-sized infographic called 'The problem of water scarcity (causes and impacts)'.
- As a class, create a peer assessment checklist for the infographics.

Review of learning

- Students conduct a peer assessment by swapping and checking a peer's infographic against the checklist.
- Students use the checklist to provide feedback to their partner.

Lessons 9–10

The Western Australian Curriculum content addressed in these lessons is below.

Water in Australia

- Water scarcity and what causes it; why it is a problem; and ways of overcoming water scarcity

Evaluating

- Draw evidence-based conclusions by evaluating information and/or data to generate a range of alternatives and plan for action in response to contemporary events, challenges, developments, issues, problems and/or phenomena; make comparisons; evaluate costs (disadvantages) and benefits (advantages); and infer relationships

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Resources

Water Corporation (2024) *Planning a waterwise home* webpage
https://www.watercorporation.com.au/Help-and-advice/Building-and-renovating/Planning-a-waterwise-home/Planning-a-waterwise-home

Water Corporation (2024) *Waterwise* webpage
https://www.watercorporation.com.au/Waterwise

Water by Design (2020) *The WaterWise House – Factsheet* webpage
https://waterbydesign.com.au/download/waterwise-house

Government of Western Australia (2020) *Being waterwise a key to making a sustainable house* webpage
https://www.wa.gov.au/government/announcements/being-waterwise-key-making-sustainable-house

Visual Paradigm Online (2024) *Floor Plan Templates* online activity
https://online.visual-paradigm.com/diagrams/templates/floor-plan/

K20 Learn (2020) *Two Stars and A Wish* instructional strategy
https://learn.k20center.ou.edu/strategy/83

Teacher information

- This activity can be adapted and extended by adding asking students to design their water wise house to a particular budget. This will require students to research the cost of strategies and present the total cost of making their house water wise.

Lesson outline

Learning intention/s	Success criteria
Students will: • investigate strategies for water conservation in the home.	Students can: • identify strategies that can be implemented in a home to conserve water • annotate features on a floorplan that make a house waterwise, using information from various sources.

Introduction

- Students brainstorm the different strategies that they are using or could be used to conserve water in their homes. Some examples may include, water saving appliances and using a timer in the shower.

Main activity

- Provide students with access to the *Being waterwise a key to making a sustainable house, The WaterWise House – Factsheet, Waterwise* and *Planning a waterwise home* webpages. Students can use additional resources to aid in completing the student activity.
- Students read through the websites, noting down some of the suggested water conservation strategies.
- With a partner, students access the *Floorplan templates* online activity to select and annotate an appropriate plan to create the most waterwise house possible.

Review of learning

- Students team up with another partnership and review their peers work using the *Two stars and a Wish* instructional strategy.

Lessons 11–12

The Western Australian Curriculum content addressed in these lessons is below.

Water in Australia

- Water scarcity and what causes it; why it is a problem; and ways of overcoming water scarcity

Questioning and research

- Construct a range of questions, propositions and/or hypotheses

Communicating and reflecting

- Represent information and/or data using appropriate formats to suit audience and purpose

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Resources

Sydney Water (n.d.) *How water-efficient is your school?* teacher resource
https://www.sydneywater.com.au/education/programs-resources/high-school/water-audit.html

Central Coast Council – High Schools Water Education Program (n.d.) *School Water Audit Activity* pdf
https://lovewater.centralcoast.nsw.gov.au/sites/default/files/water_audit.pdf

Teacher information

These two lessons are an opportunity for students to participate in fieldwork within the school by completing a school water audit. Whilst the resource steps out the process of running the audit, teachers will need to ensure that they are able to access the required people, equipment and documents before starting the activities with students. Where this is not possible, teachers may modify the activities.

Teachers may provide students with the activity sheets as a shared document link for student groups to complete and share with peers. Alternatively, students may be given hard copy activity sheets, and a student may have the role of recording results as other students complete their activities.

According to Sydney, Water schools can be evaluated on the following scale:

Litres (per student, per day)	Rating
<5 L	Very low water use (may be due to shared facilities)
5–12 L	Normal to efficient water use
12–24 L	Medium water use
24–50 L	High water use
>50 L	Extremely high-water use

This information can be used at the start of the process to predict the water efficiency of the school and/or at the end of the fieldwork to evaluate the school's water efficiency and set targets in the action plan.

Lesson outline

Learning intention/s	Success criteria
Students will: • investigate the school's water usage and develop actionable recommendations to improve water efficiency.	Students can: • gather and analyse data on the school's water usage through assigned roles in a water audit • create and present a three-point action plan with evidence-based recommendations to improve the school's water efficiency.

Introduction

- Inform the students that the class will evaluate is the school's water efficiency and provide recommendations to the principal on how it could be improved.
- Have students brainstorm ways to assess the school's water usage and/or identify high water-use areas.

Main activity

- Assign roles for class members based on the activities in the resource *School Water Audit Activity* or any other activities students could undertake. These roles may include:
  - reading the water bill
  - reading the water meter
  - interviewing stakeholders – principal, canteen, cleaners, teachers
  - school's facilities audit – Year 7 area, Science block etc.
- Students complete their assigned activity and share their results with the other members of the class.
- As a class, review the results from all the activities and evaluate the school's performance. Students may be able to identify the areas where the school could improve.
- Complete a school water efficiency action plan. Teachers may wish to use some of the templates in the *School Water Audit Activity* pdf, pages 28–31 as a guide.

Review of learning

- Students create a three-point plan that they could present to the principal or school board about the importance of improving water efficiency in the school.

Lesson 13

The Western Australian Curriculum content addressed in this lesson is below.

Water in Australia

- Water scarcity and what causes it; why it is a problem; and ways of overcoming water scarcity

Evaluating

- Draw evidence-based conclusions by evaluating information and/or data to generate a range of alternatives and plan for action in response to contemporary events, challenges, developments, issues, problems and/or phenomena; make comparisons; evaluate costs (disadvantages) and benefits (advantages); and infer relationships

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Resources

Crash Course Kids (2015) *Water Fix!: Crash Course Kids #36.2* video https://www.youtube.com/watch?v=UYROQW9IDIg

Water Corporation (2025) *Perth's water supply: Where does Perth's drinking water come from* webpage https://www.watercorporation.com.au/our-water/Perths-water-supply/where-your-water-comes-from

University of South Australia (2024) *PMI Chart* instructional strategy https://lo.unisa.edu.au/mod/book/view.php?id=611321&chapterid=100451

Lesson outline

Learning intention/s	Success criteria
Students will: • explore strategies to address water scarcity and evaluate their sustainability in the context of Western Australia.	Students can: • analyse a water scarcity strategy in Australia using a *PMI* chart • evaluate and justify which strategy would be the most sustainable for Western Australia's conditions.

Introduction

- Show students the *Water Fix!* video. Whilst watching, students are to answer the following questions:
  - What is water scarcity?
  - What are some solutions for water scarcity used in different times and places to overcome the problem?
  - Could they be applicable to Western Australia?

Main activities

- Provide students with the definitions from *Perth's water supply: Where does Perth's drinking water come from* for the following terms:
  - desalination
  - groundwater
  - dams
  - groundwater replenishment.
- Using the *Perth's water supply: Where does Perth's drinking water come from* webpage, students make a comparison about where the water from their home comes from, compared to a rural or remote location in Western Australia.
- Students select one strategy to overcome water scarcity at a local, regional or national scale (e.g. building a new dam, constructing a desalination plant, storing stormwater, recycling wastewater).
- Students investigate this strategy in Australia and use the *PMI* instructional strategy to record their findings.

Review of learning

- Students work with three other members of the class and decide which of their four strategies would be most sustainable for conditions in Western Australia.

Lessons 14–16

See Appendix B: Assessment task – Broadsheet

Appendix A

Resources

Lesson 2: See, Think, Wonder thinking routine

The following resources support the teaching and learning for Lesson 2.

Image 1: Waterhole Tanzania Africa

(Metcalf, 2006)

Image 2: Swan River Perth Western Australia

(Rabich, 2019)

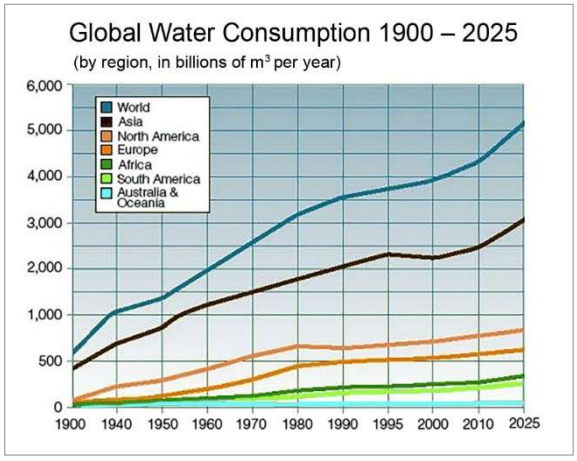
Image 3: Indian Village woman

(Chiyaruchi, 2020)

Image 4: Water playground

(Rootology, 2008)

Image 5: Global water consumption 1900–2025



(Sampa, 2018)

Image 6: Flooding in South Asia

(Eagle, 2020)

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See, Think, Wonder

1. **See**. Describe what you can see in the images and the graph about the amount and type of water in different places.

_____

_____

_____

_____

_____

_____

_____

_____

_____

2. **Think**. Explain your thoughts regarding these images and the graph (use the graph to help you with this).

_____

_____

_____

_____

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_____

_____

_____

_____

3. **Wonder**. What do these images and graph now make you wonder? Create three questions related to the images and table that could be used as part of an inquiry about how water resources vary between places.

1. _____

_____

2. _____

_____

3. _____

_____

Lesson 2: Water resource question challenge

What's the question?

Questions **Write as many questions you can think of in five minutes that have water as the answer.**	**Answer**	**Point** **You will get one point for each question which no one else in the class has written**
What is something you can drink out of a glass?	**Water**	
	Water	
	Water	
	Water	
	Water	
	Water	
	Water	
	Water	
	Water	
Total points		

Appendix B

Assessment task

Task details

Title	Broadsheet
Description	Students investigate the nature of water challenges where they live and another place in Australia and present their findings on a broadsheet. Students construct a bibliography and use ethical protocols to acknowledge their sources.
Way of assessing	Visual representation
Evidence to be collected	Broadsheet and bibliography
Suggested time	Four lessons in class (Lessons 13–16)
Differentiation	Teachers should differentiate their teaching and assessment to meet the specific learning needs of their students, based on their level of readiness to learn and their need to be challenged. Where appropriate, teachers may either scaffold or extend the scope of the assessment tasks.

Content descriptions

Knowledge and understanding

- The location, distribution and variability of Australia's water resources
- Water scarcity and what causes it; why it is a problem; and ways of overcoming water scarcity

Humanities and Social Sciences skills

Questioning and researching

- Use a variety of methods to collect relevant information and/or data from a range of appropriate sources, such as print, digital, audio, visual and fieldwork
- Select the best method for recording selected information and/or data
- Use appropriate ethical protocols to plan and conduct an inquiry

Analysing

- Interpret information and/or data to identify key relationships and/or trends displayed in various formats
- Translate information and/or data from one format to another

Evaluating

- Draw evidence-based conclusions by evaluating information and/or data to generate a range of alternatives and plan for action in response to contemporary events, challenges, developments, issues, problems and/or phenomena; make comparisons; evaluate costs (disadvantages) and benefits (advantages); and infer relationships

Communicating and reflecting

- Represent information and/or data using appropriate formats to suit audience and purpose

Key concepts

Place, interconnection, sustainability, change, scale

Instructions to students

In this task, you will research and construct a broadsheet on water challenges where you live and in another location in Australia.

Your broadsheet should include:

- a description of the water quantity (amount) and variability (type)
- a description of the challenges, including the extent of the challenge, the impact on the environment and how it is changing the interconnections between people and places
- the water management strategies used and/or proposed to address water challenges including the sustainability of the strategies
- the advantages and disadvantages of each of the water management strategies

The broadsheet should be A3 size and include:

- a wide range of different sources, such as information, images, diagrams, maps and/or data
- both qualitative and quantitative data
- a bibliography.

Any written text needs to be in dot points and is not to exceed 250 words.

All relevant information must be included in the final product. Refer to the marking key to ensure you include all the requirements, including the bibliography.

A geographical broadsheet is a large-format document that presents a range of geographic information, data and analysis. It is used to display maps, statistical tables, diagrams and written explanations related to geography. Examples of broadsheets used in Year 12 Geography may be found at https://senior-secondary.scsa.wa.edu.au/syllabus-and-support-materials/humanities-and-social-sciences/geography

Marking key

Description	Marks
Broadsheet sources (Question and researching, Analysing)	
Selects relevant and detailed geographical information and/or data from a wide range of sources that addresses all of the required knowledge and understanding Uses appropriate recording techniques to collect and present the geographical information and/or data required by the task. Includes detailed relevant data.	7–8
Selects relevant geographical information and/or data from a range of sources. Uses a variety of recording techniques to collect and present the geographical information and/or data required by the task. Includes relevant data.	5–6
Selects mostly relevant geographical information and/or data from a range of sources. Uses a variety of recording techniques to collect and present the geographical information and/or data required by the task. Includes some relevant data.	3–4
Locates and copies some relevant geographical information and/or data from a narrow range of sources. Includes limited data.	1–2
Subtotal	**/8**
Knowledge and understanding (Evaluating)	
Includes a wide range of relevant sources such as maps, images, diagrams, charts and/or graphs that show: • the major causes of water challenges in two places and why it is a problem • a range of relevant water management strategies used and/or proposed to overcome the water challenges in both places • the significant advantages and disadvantages of water management strategies.	7–8
Includes a range of relevant sources such as maps, images, diagrams, charts and/or graphs that show: • what causes water challenges in two places and why it is a problem • a range of water management strategies used and/or proposed to overcome water challenges in both places • some of the advantages and disadvantages of the water management strategies for both places.	5–6
Includes a small range of mostly relevant sources that show: • what causes water challenges in two places and why it is a problem • a water management strategy used and/or proposed to overcome water challenges in one or both places • some of the advantages and/or disadvantages of the water management strategy.	3–4
Includes some simple sources that show only a very small part of what is required.	1–2
Subtotal	**/8**

Description	Marks
Bibliography	
Provides a correctly referenced bibliography with a variety of source types	3
Uses bibliography template sheets with limited source types and some references	2
Uses bibliography template sheets with one source type and some references	1
Subtotal	**/3**
Total	**/19**

References

The ethical recording and communicating of evidence

List the bibliographical information of all the resources you have used for your research. You are legally required to acknowledge the author or editor who wrote or compiled the information you have used to complete the task.

Bibliography/Reference list framework

Books

Author	Year	Title	Publisher	Place
More than one author				

Encyclopedia or dictionary

Author	Year	Title of article	Title of encyclopedia	Vol	Publisher	Place	Page(s)

Magazine articles

Author	Year	Title of article	Title of magazine	Volume	Number	Page(s)

Newspaper articles

Author	Year	Title of article	Title of newspaper	Date	Page(s)

Film or video

Title	Year	Format	Publisher	Place

World wide web – document

Author	Year or last update	Title of website	Date retrieved	URL (website address)

World wide web – image

Title	Format	Year	Date retrieved	URL (website address)

Online encyclopedia

Title of article	Year	Title of website	Date retrieved	URL (website address)

Acknowledgements

Lesson 2: See, Think, Wonder thinking routine

Image 1 Metcalf, B. (2006). *Mwamongu Water Source* [Photograph]. Retrieved June, 2025, from https://commons.wikimedia.org/wiki/File:Mwamongu_water_source.jpg

Image 2 Rabich, D. (2019). *Perth (AU), View From Kings Park -- 2019 -- 0471-80* [Photograph]. Retrieved June, 2025, from https://commons.wikimedia.org/wiki/File:Perth_(AU),_View_from_Kings_Park_--_2019_--_0471-80.jpg Used under a Creative Commons Attribution-ShareAlike 4.0 International licence.

Image 3 Chiyaruchi. (2020). *Indian Village Woman* [Photograph]. Retrieved August, 2025, from https://commons.wikimedia.org/wiki/File:Indian_Village_woman.jpg Used under a Creative Commons Attribution-ShareAlike 4.0 International licence.

Image 4 Rootology. (2008). *Wwp-02* [Photograph]. Retrieved June, 2025, from https://commons.wikimedia.org/wiki/File:Wwp-02.jpg

Image 5 Sampa. (2018). *Annualglobalwaterconsumption* [Photograph]. Retrieved June, 2025, from https://commons.wikimedia.org/wiki/File:Annualglobalwaterconsumption.jpg Used under a Creative Commons Attribution-ShareAlike 4.0 International licence.

Image 6 Eagle, S. (2020). *2020 Hyderabad Floods* [Photograph]. Retrieved June, 2025, from https://commons.wikimedia.org/wiki/File:2020_Hyderabad_floods.jpg Used under a Creative Commons Attribution-ShareAlike 4.0 International licence.