



WATER SERVICES
ASSOCIATION OF AUSTRALIA



**WSAA submission to
The Australian Curriculum
Review by ACARA**

July 2021



1. Introduction

The purpose of this submission is:

- To highlight the importance of water related content in the school curriculum in preparing young people for future challenges, particularly in regards to knowledge of the urban water cycle
- To put forward recommendations, particularly in regards to Achievement standards for both the Cross-Curriculum Priorities and General Capabilities.
- To raise awareness that the water sector as subject matter experts, can support teachers by developing relevant content that would help them deliver on the learning outcomes in the curriculum
- To open a dialogue and develop a relationship with ACARA with our goal to be considered as a stakeholder for any further engagement on the school curriculum.



KEY MESSAGES

- Water literacy needs to be built from childhood – the school curriculum is essential in delivering the building blocks of this water knowledge.
- Learning outcomes related to the water cycle, the efficient use of water, healthy waterways and alternative sources of water are the key areas in the curriculum that build water literacy.
- The water sector has a role in ensuring a secure, safe and reliable water supply for our cities. We can deliver this in an efficient and effective way if we work with a water literate community. As such, water literacy of school age children and the general public is important for the water sector.
- The water sector put forward the following recommendations:
 - That the National Curriculum enable teachers and schools to adequately sequence learning for students so they emerge from their educational journey as active and informed citizens.
 - Cross-Curriculum Priorities require a continuum of learning, similar to that which exists for the General Capabilities.
 - Both the Cross-Curriculum Priorities and the General Capabilities have Achievement Standards so that students, teachers, key learning areas and schools are accountable for the intended holistic learning embedded within the National Curriculum.
 - The Cross-Curriculum priorities include an extensive elaboration table outlining how to apply this within the school and classroom. This could include whole of school program example instead of classroom driven programs.
- The water sector would like to support teachers through the provision of relevant, engaging and easily accessible content that delivers on the learning outcome in the curriculum.
- The water sector, through the Water Services Association of Australia, would like to start a conversation with ACARA to decide how best to engage on the curriculum and in particular areas related to water use and resources.

2. Why is water literacy important?

The Alice Springs (Mparntwe) Education Declaration states that:

“our education system must ... also prepare young people to thrive in a time of rapid social and technological change, and complex environmental, social and economic challenges.”

Goal 2 states:

All young Australians become confident and creative individuals, successful lifelong learners, and active and informed members of the community:

- are able to recognise, adapt to, and manage change
- have a sense of optimism about their lives and the future
- are able to make sense of their world and think about how things have become the way they are.

Water literacy is knowledge about water sources, water management and water-related issues¹. Water security is a complex environmental, social and economic challenge. We will need to transition to more sustainable cities and regions that can support population growth in the face of climate change. The transition will rely on changes to policy, practices, behaviours and technology and will be driven by ‘water literate’ citizens. Knowledge and understanding of this challenge can be gained via water education.

3. The school curriculum and water literacy

The school education curriculum provides students with the ‘water’ knowledge and skills to ‘manage their water use’ and to become active and informed members of the community. This is critical when it comes to building water literate adults. The key parts of foundational knowledge are acquired as part of the school curriculum and include:

- exploring how First Nations Australians gain knowledge about the land and its vital resources, such as water and food, through observation (Foundation)
- identify key processes in the natural and urban water cycle and describe how water is cycled through the environment. (Year 3)
- evaluate the possible options that people could take to resolve (like climate variations, water source challenges, water quality challenges, recycled water) (Year 3)
- value the source of water and acts to save water, reduce water consumption and waste at school and home. (Year 3)
- identifying local water sources and exploring how they change over time (Year 3)
- exploring and comparing separation methods used in a variety of situations such as in the home, recycling industries and purifying water (Year 7)
- Sustainable patterns of living require the responsible use of resources, maintenance of clean air, water and soils, and preservation or restoration of healthy environments. (Cross curriculum priority area of Sustainability).

¹ CRC for Water Sensitive Cities, 2015

An example of how the water sector can support schools and provide an immersive learning experience in the cross-curriculum area of sustainability is provided in Box 1 - Waterwise Experience.



BOX 1: WATERWISE EXPERIENCE

The Waterwise Experience is an interactive, multi-sensory incursion for high school students (Years 7-10), that is designed to engage and inspire them on the topic of water sustainability.

Using silent disco technology, students will explore, wonder and question through the power of audio. Students are led through three engaging narratives, which empower them to take action and become sustainability ambassadors. They will learn that we have finite resources and need to work together to preserve, restore and protect the uniqueness of our planet.

Each narrative takes place in its own tent world, where the students work together to identify our water sources and understand the importance of our water supply and treatment processes.

The experience is scalable and can cater for up to 162 students per session. We can facilitate multiple sessions per day, to allow several classes or year groups to participate. A session is delivered in 60 minutes so it can fit seamlessly into a school class schedule.

The Waterwise Experience has been designed to satisfy HaSS, Science, English WA Curriculum objectives and also Sustainability Cross Curriculum Priority.

Source: Water Corporation WA

<https://youtu.be/12UrDuV5leU>

4. Why does the water sector play a role in education?

The community also understands the importance of water knowledge and believes that the water sector should play a role in education. Engagement with the Melbourne community through Melbourne Water's Pricing Submission process reported strong community support for empowering the community to play a greater role in decisions and services that shape Melbourne's future liveability. There was wholehearted support for greater community involvement in, and understanding of, waterways and the role they play in Melbourne's environment and liveability – as well as education on the water cycle as a whole².

The water sector has an interest in developing a water literate community as it aligns with our objectives. Specifically, knowledge about water sources and management leads to:

- Curiosity and acceptance of alternative sources of water such as desalination and recycled water for drinking.
- Citizens that understand the impact of climate change on water sources and can participate in decision making about cost versus service trade-offs.
- Citizens that understand how best to play their part in the protection of waterways and the environment.
- Citizens that value water and contribute through water efficient behaviour.

² Melbourne Water, 2021



BOX 2: WATER IN ABORIGINAL CULTURE OFFERINGS

Teachers can choose from either an in-class incursion or use one or, more of our exciting multimedia activities and plug-and-play teaching tools to provide a platform for students to learn about ancient Aboriginal knowledge and practices. Whichever option they choose, our educational resources align with the West Australian curriculum objectives while satisfying Aboriginal and Torres Strait Islander history and culture cross-curricular priorities.

Water in Aboriginal culture incursion:

Our Aboriginal education officer teaches students about the strong connection Aboriginal people have to water and why. The 60,000 year old water management and conservation practices taught in this workshop will captivate students to learn about the difference they can make to our water future. Techniques used by Noongar people to locate and transport water. Noongar seasons and the importance they play in sustainable food and water practices.

Walk with the Waugal 360 experience:

Through our Waugal 360 website, students can investigate 3 rich habitats across Perth with 12 points of interest to follow. In each scene, students will be captivated by videos, images, audio and text to develop their understanding of water in Aboriginal culture and the many cultural practices carried out using the flora and fauna of these environments.

Walk with the Waugal videos:

Access a range of videos and corresponding lesson plans. Ready to be delivered through a range of platforms, students will be guided through an immersive journey by Noongar Elder Dr Noel Nannup to learn about the story of how the Waugal created our deep underground system and waterways. He will take your students to significant sites around Perth and explain their cultural importance to Aboriginal people and how they are sustainably managed today.

Source: Water Corporation, WA

5. How do water utilities support the delivery of water related learning outcomes?

The alignment between the goals of the water sector and learning outcomes in the curriculum means that the water sector invests in developing water literacy through the development of diverse educational resources and programs. Several of these programs focus more broadly than the learning areas related to water in the HASS part of the curriculum and also encompass the cross-curriculum priorities of Aboriginal and Torres Strait Islander Histories and Cultures (see Box 2).

These resources support the Australian Curriculum and state-based curricula that are free and accessible through the websites of water utilities. These resources include:

- Hands on - incursions, excursions, field trip events
- Digital resources – GIS maps, videos, interactives, games, Youtube classes), Virtual reality tours (see Box 3) and augmented reality

- Lesson plans for teachers
- Fact sheets and worksheets and online content to teachers and schools



BOX 3: MELBOURNE WATER WESTERN TREATMENT PLANT VIRTUAL TOUR

The Western Treatment Plant (WTP) has been a popular destination for school excursions for decades.

The site provides extensive learning opportunities and is highly regarded by educators for its historic and cultural significance, sustainable water treatment processes and significant biodiversity.

To provide greater access to the site, in October 2019 Melbourne Water released an immersive virtual tour of the WTP via its website. This has enabled teachers and students to experience a 'real world' tour of Melbourne's largest sewage treatment site from their classroom or home for the first time.

The virtual tour offers 360-degree views of the massive site - which spans more than 10,000 hectares and is almost the size of Phillip Island. Students can navigate their way through the area, unlocking videos, information and imagery. This includes being taken behind the scenes of the sewage treatment process and internationally significant wetland areas.

Melbourne Water also offers free virtual excursions via webinar to schools where a Melbourne Water educator guides students through the site. Lesson plans and GIS maps to support classroom sessions, with links to the Year 7 and 8 Geography curricula, are also available.

Since its release, the tour has been accessed by over 11,000 users and attracted 147,791 page views. In 2020, a supplementary augmented reality WTP Tour App was also created, offering a chance to 'step' into a 360-degree view of the site from any device.

The move to virtual tours and experiences is a natural extension of Melbourne Water's aim to support and guide students through the important water cycle process and how our critical water resources are managed for a sustainable future.

Source: Melbourne Water, Vic

Teachers readily utilise these resources. While most water utilities and schools put excursions and incursions on hold over 2020, the water sector were able to provide a range of online resources. Table 1 gives a sample of the utilisation of resources from some of the cities and regions around the country. All states and territories have resources aligned with the school curriculum available through water utilities in their area.

Table 1: Use of content provided by Water utilities (Sydney, Victoria and South Australia)

Location	Number of students participating in face-to-face activities (excursions, incursions, workshops)	Number of views or downloads of online school education content
Melbourne ³	10,601	139,640
Regional Victoria ⁴	31, 164	1,727
Sydney ⁵	5,615	105,000+
South East QLD ⁶	29,786	Data not available
South Australia ⁷	9,313	Data not available
Western Australia ⁸	34,303	74,134 (views), 7,779 (downloads)
Australian Capital Territory ⁹	10,987	21, 727

Much of the content is designed not just to deliver knowledge but to develop other skills and give context to many other learning areas in the curriculum. The Victorian Government Schools Water Efficiency Program (SWEP) is a voluntary program enabling schools to use data loggers to digitally track water usage and create water efficient schools. To date the program has signed up 1098 schools. SWEP education resources address learning areas in Sustainability, English, Mathematics, Science and Humanities¹⁰.

Water utilities also provide content that is location and context specific. For example, the program delivered by Power and Water Corporation in the Northern Territory is focused schools in remote communities and weaves in Sustainability and Aboriginal cultural values of water (see Box 4).

³ Provided by Melbourne Water for the 12 months of 2019. Face to face is school year only

⁴ Data provided by a range of regional water utilities in Victoria for the 12 months of 2019

⁵ Data provided by Sydney Water from July 2019 until March 2020 when all contact stopped due to COVID

⁶ Data provided by Seqwater based on the 12 months of 2019

⁷ Data provided by SA Water for 2019. Online data not available due to a new online education portal from early 2021

⁸ Data provided by Water Corporation for 2019. Online data from May 2020 to May 2021

⁹ Data provided by Icon Water for Jul 2019 - Jun 2020 noting that face to face activities were stopped in March 2020

¹⁰ Victorian Government SWEP, 2021



BOX 4: POWER AND WATER CORPORATION ‘THAT’S MY WATER – BUSH SCHOOLS’

Power and Water Corporation (PWC) provides safe and reliable drinking water to 72 remote communities across the NT. It’s a challenging job and each community has its own unique water story. The current rate of water consumption in many parts of the Northern Territory is not sustainable. On average, Territorians use twice the water per capita than the rest of Australia.

As a part of a range of programs designed to ensure sustainable water demand, PWC developed and are now implementing the inquiry based curriculum piece ‘That’s My Water!- Bush Schools’.

The program supports remote schools and teachers to investigate the importance of water to their own community from a number of perspectives. It allows students to get hands on and engage directly with STEM professionals from Power and Water and, wherever possible, local community representatives to learn about a range of water and sustainability issues, including the cultural significance, the supply and treatment of water today and behaviour priorities for water conservation.

The program is designed to provide students with the skills, knowledge and motivation to take on the role of water ambassadors. The unit is complete once students have taken all of their new knowledge and designed a social change action. At best, these culminating projects will create a new generation of informed and empowered sustainability leaders that will change the path their community takes toward a sustainable water future.

The unit itself is not prescriptive. It provides a range of suggested learning experiences that will give students the knowledge needed to develop their own personal water story and knowledge.

Wherever possible, PWC encourages teachers to work in the students’ first language (where applicable).

Source: Power and Water Corporation, NT

6. What are we asking?

While the sector has a proud history of providing these resources, we also recognise that there are always ways to improve. The sector would like to explore better ways to engage with teachers and the curriculum. The aim is to provide content that is useful for teachers, engaging for students and easy to access and deliver. In regards to the changes in the curriculum:

- The water sector supports the alignment of earth and sciences topic to Year 3.
- The water sector supports the strengthening of Year 7 Water in the World topic including reinstating the term ‘water cycle’ in elaboration AC9HG7K01_E2.
- The water sector supports the strengthening of the cross-curriculum priority topic of Aboriginal and Torres Strait Islander histories and cultures and the clearer links to water management.

The water sector would like the following recommendations taken into consideration

- Cross-Curriculum Priorities require a continuum of learning, similar to that which exists for the General Capabilities.
- Both the Cross-Curriculum Priorities and the General Capabilities have Achievement Standards so that students, teachers, key learning areas and schools are accountable for the intended holistic learning embedded within the National Curriculum
- The Cross-Curriculum priorities include an extensive elaboration table outlining how to apply this within the school and classroom. This could include whole of school program example instead of classroom driven programs.
- Endorsement of water sector platform for teachers to access reliable, curriculum aligned content to support their learning areas.

In addition, the water sector will be working on the following actions in response to this review process:

- Start a conversation with ACARA to decide how best to engage on the curriculum and in particular areas related to water use and resources.
- Engage with teachers to understand how we can best support them in terms of providing relevant content, or improving the content we have, and making it easy to access.
- Assisting them in delivering the content, or building teacher capability or knowledge in some of the specific knowledge areas of our sector.
- Advocacy with state and territory governments to support the ACARA National Curriculum review with the WSAA endorsed recommendations included.

WSAA on behalf of the water sector has also submitted our feedback on the on the proposed changes to the curriculum through the survey instrument. We are happy to provide further details on our responses.

7. Contact

WSAA welcomes the opportunity to discuss this submission further.

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8. References

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