**Science Week 2020: 15th – 23rd August**



**Theme:** Deep Blue – Innovation for the Future of our Oceans

**Resources:**

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| **Resource** | **Description** | **Link** |
| The Deep Blue: Innovation for the future of our Oceans Teachers resource book | Resource: This resource has lesson plans, cases studies, activity ideas and links to resources for students from Foundation through to Year 10. There’s also a [student journal](https://www.scienceweek.net.au/wp-content/uploads/2020/03/2020ASTA-DeepBlue_StudentJournal_FINAL.pdf) (3.1 MB, pdf) intended for older students to record their ideas, from defining the problem posed on the suggested activities to debriefing the solutions they devise. | <https://www.scienceweek.net.au/wp-content/uploads/2020/03/2020ASTA-DeepBlue_ResourceBook_FINAL.pdf> |
| The Great Southern Reef | Website: Series of videos which explores 8,000km of kelp forest reefs fringing Australia’s Southern Coast | <https://greatsouthernreef.com/> |
| Blue Economy | Website: The Blue Economy CRC brings together expertise in the seafood, marine renewable energy and offshore marine engineering sectors to deliver innovative solutions that will transform the way we use our oceans. | <https://blueeconomycrc.com.au/> |
| UNESCO Ocean Decade: The science we need for the oceans we want | Website: Download the PDF document which explores UNESO’s commitment to a Decade of Ocean Science for Sustainable Development from 2021 to 2030. This Decade will provide a common framework to ensure that ocean science can fully support countries to achieve the 2030 Agenda for Sustainable Development. | [https://unesdoc.unesco.org/ark:/48223/pf0000265198](https://unesdoc.unesco.org/ark%3A/48223/pf0000265198) |
| World Ocean Observatory  | Website: World Ocean Observatory serves as a portal to useful and interesting websites and organisations on ocean science and culture, to thousands of ocean-based curricula and educational resources, to our Ocean Directory of over 18,000 ocean organizations worldwide. | <http://www.worldoceanobservatory.org/node/19084> |

 **Activities/Lesson ideas:**

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| **Name** | **Description** | **Link** |
| Deep Blue Escape Room | Set in a submarine in the dark, cold waters near Antarctica, students are presented with a scenario where the submarine's battery fails. They have 45 minutes to complete 10 challenges and crack the code to replace the battery and return to the ocean's surface.This is a hands-on, immersive experience that gets students collaborating and applying scientific understanding to a series ocean-themed of challenges | <https://stileapp.com/au/share/5f1271cd-351b-4ac0-abf3-394217bc60d8> |
| Exploratorium Science Snack: Deep Blue | Submerge yourself in underwater colour perception: Use photographs and coloured light bulbs to see how changing light conditions affect the apparent colour of deep-sea dwellers | <https://www.exploratorium.edu/snacks/deep-blue> |
| Exploratorium Science Snack: Ocean Acidification in a Cup | Create a carbon dioxide–rich atmosphere in a cup and watch how it changes the water beneath it. This model of ocean-atmosphere interaction shows how carbon dioxide gas diffuses into water, causing the water to become more acidic. Ocean acidification is a change that can have big consequences | <https://www.exploratorium.edu/snacks/ocean-acidification-in-cup> |
| National Marine Sanctuary Virtual Dive Galleries  | Website where students can virtually explore different ocean environments. Can be paired with VR headsets | <https://sanctuaries.noaa.gov/vr/> |
| Virtual Reef Diver | Virtual Reef Diver is a collaboration between scientists, managers, citizens, dataanalysts, marine explorers and reef operators working together to record, analyseand predict coral cover on the Great Barrier Reef.The aim of the project is to tap into the power of citizen science to dramaticallyincrease the amount of monitoring data within the Great Barrier Reef, and thentranslate these crowd-sourced data into valuable information that managers canuse to make better decisions | <https://www.virtualreef.org.au/> |
| Digital Technologies Hub: AI for Oceans | Learn about artificial intelligence (AI), machine learning, training data, and bias, while exploring ethical issues and how AI can be used to address world problems | <https://www.digitaltechnologieshub.edu.au/resourcedetail?id=a2ac4b98-09f9-6792-a599-ff0000f327dd#/> |
| Digital Technologies Hub: Humpback Whales, what the data reveals | Dr Michele Thums and her team have studied the behaviour of whales in Pender Bay in the Kimberley region of Western Australia. The lesson follows an inquiry process where students use the dataset to answer relevant questions about the whale population. They consider what other data they would need in order to effectively examine the impact on humpback whales of sonar activity and noise from development | <https://www.digitaltechnologieshub.edu.au/teachers/lesson-ideas/integrating-digital-technologies/humpback-whales-what-the-data-reveals> |
| Digital Technologies Hub: Turtles, exploring data in turtle population dynamics | The number of eggs a female turtle lays in her lifetime influences the health of that species population. In this lesson we look at modelling data related to the number of eggs a female turtle lays in her lifetime, using real scientific data. Explore ways to model, interpret, represent and present data, creating an infographic to raise awareness about turtle conservation | <https://www.digitaltechnologieshub.edu.au/teachers/lesson-ideas/integrating-digital-technologies/turtles-exploring-data-in-turtle-population-dynamics> |
| ABC Education | Website resources with articles, videos, and digital books to engage students in learning about the sea or ocean | <https://education.abc.net.au/home#!/topic/496128/seas-and-oceans> |
| ABC Education | Website resources with articles, videos, games and units to engage students in learning about the Great Barrier Reef | <https://education.abc.net.au/home#!/topic/1543289/great-barrier-reef> |
| ABC Education | Website resources with articles, videos, games and units to engage students in learning about marine life | <https://education.abc.net.au/home#!/topic/495446/marine-life> |
| Cool Australia: Biodiversity Years 9 and 10 | Inquiry unit support students to understand biodiversity and how it applies to our water ecosystems | <https://www.coolaustralia.org/unit/biodiversity-9-10/> |
| Cool Australia: Blue the Film R-10 | Blue is a feature documentary film charting the drastic decline in the health of our oceans. With more than half of all marine life lost and the expansion of the industrialization of the seas, the film sets out the challenges we are facing and the opportunities for positive change. Blue changes the way we think about our liquid world and inspires the audience to action. | <https://www.coolaustralia.org/curriculum-materials/?types_k=unit-type&types_v=unit&year_level_k=&year_level_v=&ca_topic_k=ca_topic-water&ca_topic_v=285&subject_k=subject-science&subject_v=276&> |
| National Geographic Education | Website: Search engine for a variety of educational collections, articles, videos and lessons related to the ocean | <https://www.nationalgeographic.org/education/resource-library/?q=Ocean&page=1&per_page=25> |
| Marine Waters: National Science Week 2020 resources | Marine Waters Western Australia provide a variety of ocean inquires aligned to year levels and Australian curriculum outcomes | <https://marinewaters.fish.wa.gov.au/resource/national-science-week-2020-deep-blue/> |
| BBC Teach: Blue Planet Live Lessons | This Live Lesson, created in collaboration with [**Blue Planet Live**](https://www.bbc.co.uk/programmes/p0722ql7), is designed to help you bring Earth's rich marine life into your classroom.Guided by CBBC's **Naomi Wilkinson** and expert wildlife biologist **Lizzie Daly**, we explore what constitutes a healthy ecosystem and discuss the threats to our oceans such as plastics and overfishing. | <https://www.bbc.co.uk/teach/live-lessons/blue-planet-live-lesson/zn7tkmn> |

**Events:**

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| National Science Week 2020 SA  | Guide to all of the National Science Week events available to the South Australian Community  | <https://www.scienceweek.net.au/wp-content/uploads/2020/07/SA_Science_WeekEvent_Guide.pdf> |
| CSIRO National Science Week Challenge | Virtual online challenges devised by the CSIRO to support students to innovate solutions to meet global demand for food and energy, while protecting marine life and ecosystems. | <https://www.csiro.au/en/Showcase/Challenge> |
| Deep Blue | Online spectacular stage shows as students are taken on a journey through the depths of our oceans as we explore the impacts of modern technology and scientific discoveries on our Oceans.COST: $7 per student | <https://www.scienceweek.net.au/event/deep-blue/> |