



National Science Week 2020 Deep Blue: Innovations for the Future of Our Oceans

Resource Overview

Audience Most suitable for primary students from 4-7 and year 9

Content duration 45 min

Teaching approach initiate or contribute to research tasks or thinking activities

We've missed school groups at the Museum so we've made this resource to give you a virtual visit to one of our much-loved spaces, the SA Biodiversity Gallery, as well as a glimpse behind the scenes at the Science Centre where researchers and collections staff study and care for the vast natural history collections that belong to the people of South Australia.

The video resource is in two parts:

In the first (8 min), go on a journey across South Australia from north to south in the Biodiversity Gallery and in particular the Coastal and Marine habitats, before visiting the Science Centre to see one of the collections usually hidden from public view to learn a little about how museums catalogue and care for natural history specimens.

In part two (37 min), marine biologist Elaine Vytopil delivers a curriculum-aligned Zoom presentation examining our unique SA habitats in more detail including examples to explain interdependence and energy flow within and between systems.

With a focus on the theme Deep Blue: Innovations for the Future of our Oceans for National Science Week this year and given the United Nations has proclaimed a Decade of Ocean Science for Sustainable Development (2021-2030), Elaine highlights some of the challenging problems the world is facing together with innovative solutions involving our oceans and finishes with ways we can all contribute to make positive changes through our personal choices and actions.

Learning Intentions - Students will:

Understand more about the unique range of life found in South Australian coastal and marine habitats some of which they may have noticed on beaches or during ocean-focused activities such as swimming, fishing, boating or diving.

Understand that organisms have particular features, adaptations, which make them suited to their place in the ecosystem.

Learn some key features of each habitat and that everything within the system, no matter how small, is important.

Build knowledge of the impact of human activity on environments (problems) and also work being done to find solutions.

Success criteria: Students will:

Differentiate between different habitats of the South Australian coastal and marine ecosystem; and describe some of the features and types of life found within them.

Show awareness or deeper understanding (depending on year level) of the concept of interdependence including importance for reproduction and life cycles, movement of energy and food chains.

Describe features of organisms they may find during beach or ocean activities around South Australia and explain how those features help with survival.

Explain some of the ways humans are impacting oceans as well as some ways to help either through choices and action or technology.

Curriculum alignment

Sustainability - Key concepts and organising ideas:

Systems

- All life forms, including human life, are connected through ecosystems on which they depend for their wellbeing and survival.
- Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems.

World views

- Are formed by experiences at personal, local, national and global levels, and are linked to individual and community actions for sustainability

Futures

- Actions for a more sustainable future reflect values of care, respect and responsibility, and require us to explore and understand environments
- Sustainable futures result from actions designed to preserve and/or restore the quality and uniqueness of environments.

Science

- Year 4: Living things depend on each other and the environment to survive
- Year 5: Living things have structural features and adaptations that help them to survive in their environment
Describing and listing adaptations of living things suited for particular Australian environments
- Year 6: The growth and survival of living things are affected by physical conditions of their environment
- Year 7: Classification helps organise the diverse group of organisms
Interactions between organisms, including the effects of human activities can be represented by food chains and food webs
- Year 9: Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems

Learning Activity Ideas

Before: Thinking activity - What do you know? 1-2-3 (write)

- 1 thing you already know about South Australian coastal and marine habitats
- 2 reasons why - oceans are important
- 3 questions you have about coastal and marine habitats in South Australia

After: Use the [The Deep Blue National Science Week Resource book](#)

Years 3 to 4 - Activity 2: Design an underwater exhibit

Investigate the living and non-living things in South Australian marine habitats and use science, technology, and art to design an underwater exhibit of things they have identified as either living or non-living.

Years 5 to 6 - Activity 1: Ocean innovation: marine debris

Explore innovative ways to tackle marine pollution and then design and make a product, technology or system for managing plastics and marine debris to help protect SA marine biodiversity.

Years 7 to 9 - Activity 4: Aquaculture systems

Scientists and researchers at the Blue Economy CRC in Launceston, Tasmania are also involved in designing infrastructure that can support the development of offshore systems for aquaculture that are aiming to produce their own energy from wind, wave and tidal energy systems.

Learn about what's involved in aquaculture. Did you know that aquaculture production systems vary, and many are being informed by scientific research and the implementation of scientific findings?

Other Resources

National Science Week – Schools Resource

<https://www.scienceweek.net.au/schools/>

The Deep Blue Resource Book

https://www.scienceweek.net.au/wp-content/uploads/2020/03/2020ASTA-DeepBlue_ResourceBook_FINAL.pdf

The Blue Economy CRC

<https://blueeconomycrc.com.au>

The Deep Blue poster

https://www.scienceweek.net.au/wp-content/uploads/2020/03/2020ASTA-DeepBlue_POSTER_FINAL.pdf

Where can I visit a marine park?

<https://www.environment.sa.gov.au/marineparks/home>

State of the Coastal and Marine Environment

https://www.epa.sa.gov.au/soe_2013/main/coast-1-why-is-it-important.html

Landscape South Australia

<https://landscape.sa.gov.au/hf/plants-and-animals/native-plants-animals-and-biodiversity/native-animals/marine-project>

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