**2021 Shorebirds Competition Accompanying Lessons**

Years 5-6 Science

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| **Strand** | **Sub-strand** | **Content Description** |
| **Science Understanding** | Biological Sciences | * Living things have structural features and adaptations that help them to survive in their environment (ACSSU043) * The growth and survival of living things are affected by physical conditions of their environment (ACSSU094) |
| **Science Inquiry Skills** | Planning and Conducting | * Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks (ACSIS086) * Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks (ACSIS103) |

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| **Cross-curriculum Priorities and General Capabilities** | | |
| * Sustainability * Critical and Creative Thinking | * Literacy * Ethical Understanding | * Personal and Social Capability |

*These lessons would be best taught alongside the 2021 Shorebirds Competition Geography accompanying unit for Yrs 5-6.*

Lesson 1: Shorebird Adaptations

Different species of shorebirds have different shaped bills that suit the type of food they eat. Use the **Shorebirds Adaptations activity sheet** provided to guide a hands-on lesson with your students to highlight the unique adaptations shorebirds have developed for sourcing food. See the Teacher Resources below for additional background information.

Lesson 2: Changing Wetland Conditions

Some species of shorebird, such as the bar-tailed godwit, fly non-stop from Alaska to Australia without food or water. A healthy wetland habitat is therefore crucial for their survival as they recover from this journey and build stores in preparation for their migration back north.

With an understanding for the importance of wetland areas, ask students to investigate some of the threats to wetland areas (they may like to choose a local wetland area or one in their State or Territory). The **activity sheet** provided can be used to record this. Students should then select one of these threats and conduct an experiment, applying their *Working Scientifically* skills, to confirm the potential impact of a threat on a wetland environment. Suggested areas for investigation are:

* The impact of saline water on plants
* The impact of pollution on plants
* The impact of trampling plants

Lesson 3: Prepare an Eco-Tourism Poster

Using the results of their investigation as an impetus, students prepare a submission for the *2021 Shorebirds Competition* (please refer to the website for competition outline).

**Teacher Resources**

* A Booklet for identifying shorebirds that can also be used to highlight varying bill shapes [Shorebird\_ID\_Booklet\_V3.pdf (birdlife.org.au)](https://www.birdlife.org.au/documents/Shorebird_ID_Booklet_V3.pdf)
* Page 5 of the attached booklet contains a fantastic diagram depicting differing bill shapes of shorebirds [20170167\_pilbara\_shorebirds\_and\_seabirds\_of\_the\_pilbara\_coast\_and\_islands\_web.pdf (dpaw.wa.gov.au)](https://www.dpaw.wa.gov.au/images/documents/conservation-management/wetlands/20170167_pilbara_shorebirds_and_seabirds_of_the_pilbara_coast_and_islands_web.pdf)

**Shorebird Adaptations**

Shorebirds are unlike many other types of birds and have a number of unique physical features that help them to survive. These are called *adaptations*. For example, although they live on shorelines, they **cannot swim** like sea birds and **do not have webbed feet**. The shape of their bill (or beak) is also a special *adaptation* to suit the types of food that they eat.

***Activity: Feeding like a shorebird***

For this activity you will need:

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| * One pair of chopsticks | *This will be your “bill”* |
| * A paper clip | *These will be different types of food for you to try and eat.* |
| * A small piece of wool or string |
| * A small rubber |
| * A grain of uncooked rice |
| * A marble or small pebble * A kernel of uncooked corn |

Using the chopsticks, try and pick up each of the items you have collected. Use the table below to record how much “food” you have been able to pick up in your “bill”. Give yourself a score of 1 point if you were able to pick any up.

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| **Type of food** | **Points** |
| Paper clip |  |
| Piece of wool/string |  |
| Small rubber |  |
| Uncooked rice |  |
| Marble |  |
| Uncooked corn kernel |  |

Now, take away any of the items that you were able to pick up with the chopsticks. Try again to pick up the remaining items.

Were you able to pick any up? If so, take these away and try again.

A major threat to shorebirds is the loss of their habitat and sources of food. If this occurs, do you think they can easily find other sources of food? Explain your answer.

**Threats to Wetlands**

Name of wetland \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| Where is this site located? | What species of shorebird visits this wetland? |
| What are some of the major threats to this wetland? | How do these threats impact shorebirds? |

**Select a threat you have identified and create an investigation question to explore:**