Activity 1: Changes to seabird habitats

Year level
Year 1

Overview
Students identify how different habitats meet the needs of the seabirds found on the Great Barrier Reef (for example the feeding/breeding grounds as seen in the Bar-tailed godwit from the poster). Predict how this habitat can change and how these changes can affect seabirds.

Outcome
Students learn research skills.

Materials
- Internet access
- Paper or drawing materials

What to do
2. Show pictures of seabird habitats on the Great Barrier Reef:
   https://tinyurl.com/yd7uvopu   https://tinyurl.com/ya8v8w5b
3. Do a Think Pair Share for the following questions:
   - How does this habitat meet the needs of seabirds?
   - How do you think this change would affect the seabirds on the Great Barrier Reef?
4. Draw a healthy habitat for seabirds showing examples of shelter, food, sunlight, water and air.

Curriculum links
Cross curriculum priority - sustainability

General capabilities:
Literacy, numeracy, information and ICT capability and critical and creative thinking personal

Science:
Living things live in different places where their needs are met (ACSSU211)

Science involves observing, asking questions about, and describing changes in, objects and events (ACSHO21) & (ACSHO34)
Pose and respond to questions, and make predictions about familiar objects and events (ACSIS024) & (ACSIS037)
Use a range of methods to sort information, including drawings and provided tables through discussion, compare observations with predictions (ACSIS027) & (ACSIS040)
People use science in their daily lives, including when caring for their environment and living things (ACSHO22) & (ACSHO35)
Activity 2: Protect bird habitats from marine debris in the Great Barrier Reef

Year level
Year 5 and 6

Overview
Students learn about the effects of marine debris on seabirds and build a tool which can be used to remove rubbish from a site, such as a beach, local creek or school ground. The tool could scoop, spike, clamp or be a combination of methods.

Outcome
Students learn to identify key elements of documentaries and to apply that knowledge practically; they learn to apply design of tools to their own project, and construction techniques.

Materials
- Access to the internet
- Materials to make tools with (brooms, netting, scoops such as brush and pan, bats).

What to do
Summarise the importance of human intervention to remove marine debris for birds. Seabirds are more vulnerable to marine debris than any other species on the Great Barrier Reef. The birds cannot remove marine debris on their own, and are in fact defenceless to some such as plastics, netting, oil, foam and other waste. It is up to humans to help.

Request the students design a tool that can be used to remove rubbish from a site. Students will need to consider how the tool will work and which types of rubbish it will remove. Suggested ideas could include a tool which spikes, clamps, scoops, sifts or a combination of these. Consider safety features for people operating the devices and storing when not in use.

1. Investigation
- Watch episode of ABC Catalyst’s Plastic Oceans to learn more about the impacts of marine debris on seabirds: https://www.abc.net.au/catalyst/plastic-oceans/11013966
- Read about marine debris and its effects on the Great Barrier Reef using Tangaroa Blue’s fact sheets: https://www.tangaroablue.org/resources/education-kit-and-fact-sheets/fact-sheets/
- Watch Youtube video of students using rubbish removing tools for inspiration: https://www.youtube.com/watch?v=xncgoPqoYEY

2. Ideation
- Brainstorm three possible tool designs to remove rubbish. Consider what types of rubbish may be picked up, ease of use and materials which can be repurposed, recycled or reused.

3. Production
- Request students complete a detailed drawing of their design, including different views and at least one close-up of the tool. Label all the different parts of the drawing include measurements to show how big the tool will be.
- Develop a detailed production plan to show how the tool will be made. Use photos, words, audio or video to record the steps of the production process and final product.
- Request the students build the design.

4. Test
- Go to a local waterway, park or school grounds and test the tool by picking up rubbish. Keep a tally of the different rubbish types collected and graph the results.
Activity 2: Protect bird habitats from marine debris in the Great Barrier Reef

5. **Evaluation**
- Complete the below table reflecting on the success of the tool. Consider sharing the tool and results with your school or local council.

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<thead>
<tr>
<th></th>
<th>Strengths (What works well?)</th>
<th>Limitations (What does not work well?)</th>
<th>Suggested improvements (How to make it work better?)</th>
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</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td></td>
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<td><strong>Materials used</strong></td>
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<td><strong>Production steps</strong></td>
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**Curriculum links**
Cross curriculum priority - sustainability

**General capabilities:**
- Literacy, numeracy, information and ICT capability and critical and creative thinking.

**Design and technologies:**
- Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use (ACTDEK023)
- Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions (ACTDEP024)
- Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025)
- Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions (ACTDEP026)
- Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions (ACTDEP027)
- Develop project plans that include consideration of resources when making designed solutions individually and collaboratively (ACTDEP028)

**Information links**
- https://www.youtube.com/watch?v=L20N1Y4XcwQ&feature=emb_title