Habitat Investigations

Year 1 Australian Science Curriculum Focus
Awareness of self and the local world

Students investigate the properties of one or more habitats within their local environment.

Students develop an understanding of:
- Features that define different habitats – natural, managed and constructed (modified)
- Living things and their needs within the habitats
- Cause-and-effect relationships within the habitats
- Weather patterns and their effects on the habitats
- Science knowledge and how it is used to care for different habitats.

Inquiry questions for the unit:
- What is a habitat?
- What are our local habitats? (Include both natural and modified habitats here e.g. local nature reserve and local park).
- Who or what lives in our local habitats?
- Why are habitats different?
- How are habitats affected by changes in the weather?
- How are habitats affected by people?
- How can we care for our local habitats?
# Year 1 Unit Overview — Habitat Investigations

<table>
<thead>
<tr>
<th>School name</th>
<th>Unit title</th>
<th>Duration of unit</th>
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<td></td>
<td>Habitat Investigations</td>
<td>Approximately eight weeks (could be used as a five week unit if teacher adjusts lessons to suit. For example, teacher could choose one of either plants or animals as a 'living thing' to focus on throughout unit instead of focusing on both.)</td>
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</tbody>
</table>

## Unit outline

### Year 1 Australian Science Curriculum Focus — Awareness of self and the local world

Students investigate the properties of one or more habitats within their local environment.

Students develop an understanding of:
- Features that define different habitats — natural, managed and constructed (modified)
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- Science knowledge and how it is used to care for different habitats

### Inquiry questions for the unit:
- What is a habitat?
- What are our local habitats? (Include both natural and modified habitats here e.g. local nature reserve and local park.)
- Who or what lives in our local habitats?
- Why are habitats different?
- How are habitats affected by changes in the weather?
- How are habitats affected by people?
- How can we care for our local habitats?

### Year 1 Level Description

From Foundations to Year 2, students learn that observations can be organised to reveal patterns, and that these patterns can be used to make predictions about phenomena. In Year 1, students infer simple cause-and-effect relationships from their observations and experiences, and begin to link events and phenomena with observable effects. They observe changes that can be large or small and happen quickly or slowly. They explore the properties of familiar objects and phenomena, identifying similarities and differences. Students begin to value counting as a means of comparing observations and are introduced to ways of organising their observations.

### Year 1 Achievement Standard

By the end of Year 1 students describe objects and events that they encounter in their everyday lives and the effects of interacting with materials and objects. They describe changes to things in their local environment. They share their observations with others.
Teacher Notes:
• Unit overview
The Great Barrier Reef Marine Park Authority (GBRMPA) Habitat Investigations Teaching Unit is a science based Year 1 unit of work. The content descriptors for this unit are from the 2011 Australian Science Curriculum (www.australiancurriculum.edu.au). Following the inquiry based 5Es approach to teaching science, the unit is based on the Australian Curriculum, Assessment and Reporting Authority (ACARA) expectations of a minimum of one hour per week of science lessons for Year 1 students. Each lesson is of approximately 45 minutes duration, with some lessons requiring more time to allow further depth of study or time for excursions. The nature of science investigations is to follow the line of student inquiry to promote and encourage students to think like scientists. Teachers may find that students will need, or want, to complete investigations other than those suggested in the teaching strategies outlined in this unit. Students are to be encouraged to follow their own line of inquiry and in the case where students do this, the teaching strategies and resources outlined in this unit may be used as a guide to supplement the student directed investigations. The overall unit or the individual lessons could be extended or shortened to cater for individual classes as deemed necessary by the class teacher. Teachers will need to allow time to prepare for the lessons prior to teaching each lesson.

• Aim of the unit
The lessons are structured to build students knowledge of habitats to reach the final goal of being able to identify a range of the features and needs of different habitats, including features and needs of plants and animals within the habitat, and identify how to care for those habitats. Healthy habitats are vital to the health of larger ecosystems which have a direct impact on the Great Barrier Reef (for more information on habitats and the Great Barrier Reef see below in ‘Habitat background information’ and also www.gbrmpa.gov.au). Teaching students about habitats will build their environmental knowledge and encourage their understanding of sustainability and stewardship. The main premise of this unit is coastal development, which is one of the Key Focus Areas of the Great Barrier Reef Outlook Report 2009 (see www.gbrmpa.gov.au for more information on the Great Barrier Reef Outlook Report 2009). GBRMPA encourages teachers to follow the main aim of Reef Guardianship – to be stewards of the environment.

• Habitat background information
  o What is a habitat?
    A habitat is where an organism lives and has all its survival needs met. It is where an animal can find food, shelter and enough water for survival. It is where plants have the right amount of sunlight, water and nutrients to grow. A healthy habitat is a place where plants and animals live harmoniously together without overpopulation, or depletion of water or food resources.
  o Types of habitats
    Every habitat is different depending on the organism being considered. An ant’s habitat is going to be much smaller than the habitat for a bird that may fly long distances from its nest to find food. However, the two habitats may overlap and have common elements which make up an ecosystem. They may also be dependant on each other for survival.
  o Importance of healthy habitats
    Healthy habitats lead to healthy ecosystems. An ecosystem is a community of plants and animals that live, feed and interact together in a specific area. The Millennium Assessment Report uses the definition “An ecosystem is a dynamic complex of plant, animal and microorganism communities and the non living environment interacting as a functional unit.” Within an ecosystem are multiple habitats for specific organisms. An ecosystem may be large, such as a rainforest, the Reef, or even the ocean with all its interconnecting elements. Or it may be smaller, such as a lake or a small island. For an ecosystem to be healthy, habitats within the ecosystem need to be healthy.
## Unit Lessons Overview

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<th>Lesson 1: My Favourite Place</th>
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<td><strong>Explore</strong></td>
<td>Lesson 2: School Habitats</td>
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<td>Lesson 3: Habitat Display</td>
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<td>Lesson 4: The Needs of Plants</td>
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<td>Lesson 5: The Needs of Animals</td>
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<tr>
<td><strong>Explain</strong></td>
<td>Lesson 6: What is a habitat?</td>
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<td>Lesson 7: How does weather affect habitats?</td>
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<td>Lesson 8: How do humans affect habitats?</td>
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<tr>
<td><strong>Elaborate</strong></td>
<td>Lesson 9: Habitats in Our Local Community</td>
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<td>Lesson 10: What happens if...?</td>
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<tr>
<td><strong>Evaluate</strong></td>
<td>Lesson 11: Project Preparation</td>
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<td>Lesson 12: Project Preparation</td>
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<td>Lesson 13: Project Preparation</td>
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<td>Lesson 14: Project Presentation</td>
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<tr>
<td>Identify curriculum</td>
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<tr>
<td>Content descriptions to be taught</td>
<td>Science as a Human Endeavour</td>
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<tr>
<td><strong>Science Understandings</strong></td>
<td><strong>Nature and Development of Science</strong></td>
</tr>
<tr>
<td>Biological Sciences</td>
<td>- Living things have a variety of external features</td>
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<td>- Living things live in different places where their needs are met</td>
<td><strong>Use and Influence of Science</strong></td>
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<tr>
<td>Earth and Space Sciences</td>
<td>- Observable changes occur in the sky and landscape</td>
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<tr>
<td><strong>Science as a Human Endeavour</strong></td>
<td><strong>Questioning and Predicting</strong></td>
</tr>
<tr>
<td>- Science involves asking questions about and describing changes in objects and events</td>
<td>- Respond to and pose questions, and make predictions about familiar objects and events</td>
</tr>
<tr>
<td><strong>Science Inquiry Skills</strong></td>
<td><strong>Planning and Conducting</strong></td>
</tr>
<tr>
<td>- Respond to and pose questions, and make predictions about familiar objects and events</td>
<td><strong>Processing and Analysing Data and Information</strong></td>
</tr>
<tr>
<td>- People use science in their daily lives, including when caring for their environment and living things</td>
<td>- Participate in different types of guided investigations such as manipulating materials, testing ideas and accessing information sources</td>
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<tr>
<td><strong>General capabilities and cross-curriculum priorities</strong></td>
<td><strong>Evaluating</strong></td>
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<tr>
<td>- Consider human impacts on the environment and other living organisms and evaluate their own and other people's actions</td>
<td>- Compare observations with those of others</td>
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<td>- Follow procedures and work both within a group and independently to share and discuss ideas</td>
<td><strong>Communicating</strong></td>
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<tr>
<td>Relevant prior curriculum</td>
<td>Curriculum working towards</td>
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<td>The Foundation Year of the Australian Science Curriculum outlines that by the end of the Foundation Year students will make observations of familiar objects and materials and explore their properties and behaviour. They suggest how the environment affects them and other living things.</td>
<td>In Year 2, students describe the components of simple systems, such as stationary objects subjected to pushes or pulls, or combinations of materials, and show how objects and materials interact through direct manipulation. They observe patterns of growth and change in living things, and describe patterns and make predictions. They explore the use of resources from Earth and are introduced to the idea of the flow of matter when considering how water is used. They use counting and informal measurements to make and compare observations and begin to recognise that organising these observations in tables makes it easier to show patterns.</td>
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**Links to other learning areas**

**QSA Year 1 Literacy Indicators (2009)**

**Speaking and Listening**
- SP1 xi. Interpret and use vocabulary about the topic and new vocabulary drawn from language experiences to label, categorise, describe and explain
- SP1 xii. Plan for spoken presentations by:
  - Sequencing events and ideas
  - Collecting visual resources
  - Responding to prompts to organise information when speaking

**Writing and Designing**
- WD1 i. Identify the purpose and topic for writing and designing and a small range of literary and non-literary texts
- WD1 ii. Write text types to describe, recount, instruct and respond
- WD1 xiv. Confirm spellings and word meanings or choice of words using a personal dictionary, word list or environmental print
- WD1 xv. Select vocabulary that describes people, characters, events, places and things
- WD1 xvi. Select language, images or illustrations to represent people, characters, events, places and things
<table>
<thead>
<tr>
<th>Assessment</th>
<th>Make judgements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Describe the assessment</strong></td>
<td><strong>Assessment date</strong></td>
</tr>
</tbody>
</table>
| Summative Assessment  
Students will provide an oral presentation about their chosen habitat. Scientific terms should be used throughout the presentation. The oral presentation will include:  
Diagrams to display -  
- a labelled diagram of at least one animal in the habitat outlining its external features  
- a labelled diagram of at least one plant in the habitat outlining its main features  
- a simple cause-and-effect diagram outlining at least one issue currently affecting the habitat.  
Explanations to share -  
- an explanation of the habitat  
- an explanation of the animal’s survival needs, its external features and how those features help it to survive in its habitat  
- an explanation of the plant and what role it plays for the chosen animal in the habitat  
- an explanation of the cause and effect diagram  
- an explanation outlining two ways to improve the management of the habitat. | The summative assessment piece is designed to be produced and presented during the Evaluate stage of the unit when students will have gathered all the knowledge required to successfully address the criteria. This date is to be determined by the class teacher.  
Student task sheet, QSA Literacy Indicators (2009) and guide to making judgements can be found in the resource section of the unit. |
### Useful Websites

- Great Barrier Reef Marine Park Authority  

- Department of Sustainability, Environment, Water, Population and Communities  

- Eco Kids  
  [www.ecokids.ca](http://www.ecokids.ca)

- Queensland Wetlands Program  

- The Biology Corner  
  [www.biologycorner.com](http://www.biologycorner.com)

- YouTube (animations to show plants growing, celery experiment, life cycles)  
  [www.youtube.com](http://www.youtube.com)

- Switcheroo Zoo  
  [www.switcheroozoo.com](http://www.switcheroozoo.com)

- Time lapse footage: BBC Life Series Episode 9: Plants  
  [http://www.bbc.co.uk/programmes/b00p90d6](http://www.bbc.co.uk/programmes/b00p90d6)

### Useful Books

- *I’m the biggest thing in the Ocean*, Kevin Sherry (also see YouTube clip)

- *Sea Shore*, Cathie Felstead

- *One Hungry Spider*, Jeannie Baker

- *Where the rainforest meets the sea*, Jeannie Baker

- *The Hunt*, Narelle Oliver

- *The Emperor’s Egg*, Martin Jenkins

- *Yakkin the swamp tortoise: Book 1 – The most dangerous year*, Guundie and Gerald Kuchling

- *Yakkin the swamp tortoise: Book 2 – Survival*, Guundie and Gerald Kuchling

- *How do I know it’s an ant? A book about animals*, Eleanor Stodart

- *One less fish*, Kim Michelle Toft and Allan Sheather

- *Aranea: A story about a spider*, Jenny Wagner
### Teaching and learning

#### Teaching strategies and learning experiences

**ENGAGE** - To capture interest and discover what we think we know.

**Lesson 1** – My Favourite Place

**Suggested Time** – 45 minutes

**Introduction** – Book Reading

- Choose a fiction or non-fiction book with students relating to an outside habitat. The book must have a clear connection to one or more animals in their natural habitat(s). Discuss the book with students. The following general questions could help guide the discussion:
  - What is the book about?
  - What is it teaching us?
  - What animals and plants did you see in the book?
  - Did you learn anything new from reading this book?

**Student Activity** – My Favourite Place

- Discuss with students their favourite place outside. Why is it their favourite place? Give examples of what is meant by a place outside – a creek, a park, the beach, a tree in their backyard. The following questions could help guide the discussion:
  - Where is a place outside that you love to go and play?
  - Tell me about your favourite place – what sort of trees and animals are there?
  - Is it noisy or quiet?
  - Do other people go there? Who?
  - How did you find out about your favourite place?
  - Why is it your favourite place?

- Write down the main points of the student discussion for students to refer to for the next activity. These words could also be used to begin a word wall. This is also a good opportunity for teachers to begin a KWL chart to record student observations of what students already know about different habitats and plants and animals in those habitats.

- Ask students to write about and/or draw a picture of their favourite place outside. The written part could be done with sentence starters such as (read and show students an example first):
  - My favourite place outside is...........
  - At my favourite place outside there are...........
  - I like my favourite place outside because...........

- Display student work.

- Start a science journal. The science journal could be done as a whole class activity, where the teacher records in a large display book the

### Assessment opportunities

**Lesson 1**

Diagnostic assessment opportunities:
- Observe students’ responses during the lesson to determine students’ awareness of their environment.

### Supportive learning environment

**Adjustments for needs of learners**

Section 6 of the *Disability Standards for Education* (The Standards for Curriculum Development, Accreditation and Delivery) state that education providers, including class teachers, must take reasonable steps to ensure a course/program is designed to allow any student to participate and experience success in learning.


**ESL Considerations**

Teachers should refer to the Learning Place [www.learningplace.com.au](http://www.learningplace.com.au), ‘ESL in the Classroom’ for ‘Break it Down, Build it Up’ resources to help restructure the unit according to the ESL needs of the class.

**Risk Management**

Refer to Department of Education and Training [www.education.qld.gov.au](http://www.education.qld.gov.au) for advice and forms

### Resources

**Lesson 1**

Have a variety of books relating to different animal habitats, both fiction and non-fiction, available for students to view and read.

A word wall.

KWL display chart.
### Teaching and learning

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<tr>
<td>students’ learning and reflections about what they have learnt, or the science journals could be done individually. A science journal is a record of observations, experiences and reflections. It contains a series of dated, chronological entries. It may include written text, drawings, labelled diagrams, photographs, tables and graphs. The science journal could be used as a part of the student assessment.</td>
<td></td>
<td>relating to risk management during curriculum activities and excursions.</td>
</tr>
</tbody>
</table>

### EXPLORE – To have shared hands-on experiences.

#### Lesson 2 – School Habitats

**Suggested Time** – 45 minutes

**Introduction – Book Reading**
- Read the same book as in Lesson 1. Discuss with the students that the home of the animal is its habitat. The animal’s habitat is where it has shelter, food and water provided. In the discussion ask the students to identify one or more animals from the book and describe the animal’s habitat by stating where the animal finds food, shelter and water.

**Investigation – Photographing School Habitats**
- Ask the students where animal habitats are around the school (e.g. garden beds, trees, lawn, sandpit, vegetable patch, underneath buildings).
- Discuss what animals might be found around the school grounds and where they might live. Write these down and plan together what should be photographed and by whom. If the school has multiple cameras available, students could be split into groups to each photograph particular parts of the school.
- Photograph each of the habitats discussed. Take multiple photos of each habitat from different distances and at different angles. For example, if it is a certain shrub or tree, take photos of the leaves, branches, roots, surrounding area and animals seen in the habitat.
- When returning to the classroom, print photos out with students if technology is available to do this. Otherwise, print them out when suitable, to have them ready for Lesson 3.
- Discuss with students what they photographed around the school.
- Alternatively, if technology is not available to take and print photos, have the students each draw/sketch a habitat within the school.
- Write/draw in science journal students’ learning and reflections.

**Lesson 2**

Formative assessment opportunities:
- observe students’ current detailed knowledge of the features of plants and animals to plan detail of future lessons.

**Lesson 2**

Same book read in Lesson 1 about a habitat.

Cameras to take photos of habitats.

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Great Barrier Reef Marine Park Authority
### Teaching and learning

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</table>
| **Lesson 3 – Habitat Display** | **Lesson 3**  
**Suggested Time** – 45 minutes  
**Introduction** – Review photos  
- As a class, examine the photos (or pictures) from the previous lesson. Add new words to the word wall about what students can see in the photos (or begin a word wall if not already begun in Lesson 1).  
**Investigation** – Create Display  
- Sort the photos into each habitat photographed, name each habitat and create a display with the photos.  
- Discuss and write onto the display the main features of each habitat – plants, animals, buildings, soil, rubbish, toys (what can be seen in the photos or what the students know exists in those specific habitats).  
- Discuss what is the same and different about the habitats. Draw students’ attention to the habitat similarities. Each habitat has some sort of plant and these plants themselves have many similarities.  
- Discuss what is natural and artificial, living and non-living in each habitat.  
- Record in the display, students’ responses to similarities and differences.  
- Write/draw in science journal students learning and reflections. | **Lesson 3**  
Formative assessment opportunities:  
- put students’ names or initials next to their responses in the display to record their developing knowledge.  
- use students’ science journals to record their learning. | **Lesson 3**  
Photos of habitats around the school taken in Lesson 2. Use student pictures if photos were not able to be taken.  
Paper, cardboard, sticky tape or display board to create habitat displays. |

| **Lesson 4 – The Needs of Plants** | **Lesson 4**  
**Suggested Time** – 45 minutes – 1 hour  
**Introduction** – Experiment Discussion  
- Explain to the students that they are going to conduct an experiment to investigate the needs of plants. Ask students if they already know what plants need to survive, or about the life cycle of plants. Record student responses in the KWL chart, if one was started, or on a large sheet of paper for display where students can refer to it later during their reflection.  
- Share the information on the procedural text for seedling investigation with the students (see Resource 1).  
- Explain the terms fair test and variable and decide with the students what will be their variable (e.g. no water, no sunlight or no dirt). The class could do just one variable or a number of variables.  
- Use the Predict, Observe, Explain Poster to generate a discussion about what students think will happen to the seedlings. Record their responses to predicting information. This information will be used in the investigation planner.  
**Investigation** – Seedling Investigation  
- As a class, fill in the Investigation Planner (Resource 2). If students are not familiar with the words on the planner, or have not used an investigation | **Lesson 4**  
Formative assessment opportunities:  
- record/observe students’ prior knowledge of plant survival needs and life cycle.  
- record/observe students’ science inquiry skills with investigation planner.  
- use the investigation planner to record students’ ability to describe changes in objects and events. | **Lesson 4**  
Resource 1 – Seedling Investigation.  
Resource 2 – Investigation Planner.  
Resource 3 – Predict, Observe, Explain Poster.  
KWL display chart |
### Teaching and learning

#### Teaching strategies and learning experiences

<table>
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<tr>
<td><strong>planner</strong> before, some time will need to be spent explaining how and why the planner is used. Students may need to leave the hypothesis until they have finished filling out the variables and the procedure. This will depend on their understanding of the experiment.</td>
<td><strong>Optional Extra Activity</strong> - The Needs of Plants extension activity</td>
</tr>
<tr>
<td><strong>Conduct the seedling investigation with students.</strong> Make sure the students have a control plant to compare their variables with. Follow the procedural text (Resource 1). Use the investigation planner for students to record their observations and results throughout the experiment.</td>
<td><strong>Optional Extra Activity</strong> - Resource 4 – Celery Experiment.</td>
</tr>
<tr>
<td><strong>Monitor the growth of the seedlings throughout the unit of work (plant in test tubes or glass jars if possible to observe root growth).</strong> Take photos or film of growth once or twice daily from exactly the same position for each seedling to record growth. Print these out every few days and create a chart to display them in chronological order. This will allow students to continuously reflect on the plant growth throughout the unit. The photos could also be used to create a stop animation or time lapse footage showing the growth of the seedlings.</td>
<td><strong>Optional Extra Activity</strong> - Resource 2 – Investigation Planner.</td>
</tr>
<tr>
<td><strong>Throughout the unit and towards the end of the Elaboration phase of the unit, take a few minutes with students to reflect on what is happening to the plants. How well are the plants growing? Are some growing better than others? Why?</strong></td>
<td><strong>Optional Extra Activity</strong> - Resource 3 – Predict, Observe, Explain Poster.</td>
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<tr>
<td><strong>Add new words to the word wall (everyday, specialise and technical). Perhaps shape the word wall as a tree.</strong></td>
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<tr>
<td><strong>Write/draw in science journal reflections and observations.</strong></td>
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#### Assessment opportunities

**Optional Extra Activity**

This lesson could be done as an extra lesson on the needs of plants to consolidate learning, or if necessary used as an alternative lesson to planting seedlings.

**Suggested Time** – 45 minutes

**Introduction** – YouTube

- View on YouTube some of the celery experiment clips. Explain to the students that they are also going to conduct the experiment.
- Discuss with the students what they think is happening to the celery.

**Investigation** – Celery Experiment

- As a class, read the procedural text for the celery experiment (Resource 4).
- Explain to the students they need to have a control cup with just plain water to compare what happens with the coloured water.
- Fill in the Investigation Planner (Resource 2) together.
- Conduct the experiment and record observations and results in the investigation planner. Results will need to be recorded the following day.

**Optional Extra Activity**

Formative assessment opportunities:
- record/observe students’ science inquiry skills with investigation planner.
- use the investigation planner to record students’ ability to describe changes in objects and events.
### Teaching and learning

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<tr>
<td>● Add new words to word wall.</td>
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<tr>
<td>● Write/draw observations and reflections in science journal.</td>
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<tr>
<td><strong>Lesson 5</strong> – The Needs of Animals</td>
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<td><strong>Suggested Time</strong> – 45 minutes – 1 hour</td>
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<tr>
<td><strong>Introduction</strong> – Animals in school habitat</td>
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<tr>
<td>● Review the habitat displays from Lesson 3.</td>
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<tr>
<td>● Create a table listing all the animals that can be seen in each habitat e.g.:</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Animal’s name</th>
<th>Habitats the animal can be found in</th>
<th>External features</th>
<th>How it moves and breaths</th>
<th>What it eats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worm</td>
<td>Dirt, compost</td>
<td>Skin, mouth</td>
<td>Wiggles, breaths though its skin</td>
<td>Dirt – gets nutrients and water from the dirt</td>
</tr>
</tbody>
</table>

- Identify the gaps that cannot be filled by current student knowledge. These could be researched during class time or set as homework research.

**Investigation** – Making Animals
- Explain to students that they are going to create their own animal. Discuss with students how they could create their own animals. Have a range of materials available for students to use.
- Students create their own animal. It could be a real animal or a made up animal to suit a certain habitat the student identifies.
- Have students share the external features of their animal and explain what sort of habitat their animal would live in according to its external features.
- Display animals.
- Add new words to the word wall.
- Write/draw observations and reflections in science journal.

**Optional Extra Activity** - The Needs of Animals extension activity
This lesson could be done as an extra lesson on the needs of animals to consolidate learning, or if necessary used as an alternative lesson to creating animals.

**Suggested Time** – 45 minutes

**Introduction** – Observing animals
- Observe animals in the school yard.
- Film animals and view the film on a large screen to discuss the animals’ features and why they need those features to live where they live.

**Optional Extra Activity**
Formative assessment opportunities:
- students’ explanation of their switcheroozoo animal can be used to assess students’ understanding of living things.

**Lesson 5**
Formative assessment opportunities:
- observe students’ ability to make connections and draw on current knowledge.
- the animals students create and their justification of features and habitat can be used to observe if students are making connections between the features of animals and their survival needs.

**Optional Extra Activity**
Formative assessment opportunities:
- students’ understanding of living things.
### Teaching and learning

<table>
<thead>
<tr>
<th>Teaching strategies and learning experiences</th>
<th>Assessment opportunities</th>
<th>Supportive learning environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Students could also catch mini beasts to observe for a short time (ensure to follow <em>The Animal Care and Protection Act 2001</em> and <em>The Australian Code of Practice for the Care and Use of Animals for Scientific Purposes, 2004, 7th Edition</em> in accordance with Education Queensland Guidelines).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Investigation</strong> - Switcheroozoo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Visit the website <a href="http://www.switcheroozoo.com">www.switcheroozoo.com</a> with students and demonstrate how the students can create their own animals.</td>
<td></td>
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</tr>
<tr>
<td>● Discuss with students the different body parts and external features available to create animals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Students then create their own Switcheroozoo animal, explain its external features and describe a habitat suitable for the created animal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● The animals can be printed out and displayed with the students’ explanation of external features and habitat.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Add new words to the word wall.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Write/draw observations and reflections in science journal.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### EXPLAIN

- **EXPLAIN** – To demonstrate what we have learned by exploring.

**Lesson 6 – What is a habitat?**

**Suggested Time** – 45 minutes

**Introduction** – Habitat Definition

- As a class review and discuss the information displayed around the room from the investigations so far. Examine the habitats, the plants (review the seedlings’ progress), the animal chart and the animals the students made.

- Discuss with students what they think would be a good way to describe a habitat.

- Write down their ideas and descriptions.

- Decide together on one final definition.

**Investigation** – Create Posters

- Break students up into groups or pairs to each create a poster. On the poster should be the definition of a habitat as well as a drawing or photo/picture and a small description of a habitat they are familiar with.

- Display posters. This could be done by displaying the posters using the cut-out of a tree as a background to review the features of plants.

- Add new words to the word wall.

- Write/draw observations and reflections in science journal.

### Lesson 6

**Formative assessment opportunities:**

- use posters to assess students’ developing knowledge of living things.

**Lesson 6** Information displays from previous lessons.

- Paper, cardboard, pencils, textas to make posters.
<table>
<thead>
<tr>
<th>Teaching and learning</th>
<th>Supportive learning environment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching strategies and learning experiences</strong></td>
<td><strong>Assessment opportunities</strong></td>
</tr>
<tr>
<td><strong>Lesson 7 – How does the weather affect habitats?</strong></td>
<td><strong>Lesson 7</strong></td>
</tr>
<tr>
<td><strong>Suggested Time</strong> – 45 minutes</td>
<td>Formative assessment opportunities:</td>
</tr>
<tr>
<td><strong>Introduction</strong> – Seasons</td>
<td>- use the students’ cause-and-effect charts to assess their ability to draw conclusions about how weather patterns affect living things (changes in objects and events, using science in daily lives).</td>
</tr>
<tr>
<td>- Discuss with students the seasons they experience in their local environment.</td>
<td></td>
</tr>
<tr>
<td>- Make a retrieval chart to be used in the investigation, outlining what changes in the weather and in the local environment take place each season. If visual stimulus is available of seasons in the local environment, this will be useful to show the students to help generate discussion.</td>
<td></td>
</tr>
<tr>
<td><strong>Investigation</strong> – Cause-and-effect charts</td>
<td><strong>Lesson 8</strong></td>
</tr>
<tr>
<td>- Choose a local habitat the students know. Discuss with students how they think local seasons and weather patterns will affect that habitat.</td>
<td>Formative assessment opportunities:</td>
</tr>
<tr>
<td>- From the discussions, generate a cause-and-effect chart, see Resource 5. For example, if the event is lots of rain, or even a flood, what happens to a specific animal and its home if the rain fills the home with water or washes it away?</td>
<td>- use students’ cause-and-effect charts to assess students ability to describe changes to objects.</td>
</tr>
<tr>
<td>- Discuss two or three scenarios and fill in the cause-and-effect charts with the students.</td>
<td>- record/observe students’ responses when discussing ways to improve the negative impacts to assess students’ use of science knowledge to care for the environment.</td>
</tr>
<tr>
<td>- Students then create their own cause-and-effect charts, individually or in pairs. They can use the retrieval chart of information about changes in the weather and the seasons to help them. Students could use both drawing and writing to fill in the charts.</td>
<td></td>
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<tr>
<td>- Students share their cause-and-effect charts and display them.</td>
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<tr>
<td>- Add new words to the word wall.</td>
<td></td>
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<tr>
<td>- Write/draw observations and reflections in science journal.</td>
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</tbody>
</table>

**Lesson 8 – How do humans affect the habitat?**

**Suggested Time** – 45 minutes

**Introduction** – Human impacts

- Look back at photos of school habitats taken in Lesson 2 (or take a walk around school grounds to observe), to identify any ways that humans have impacted those habitats.
- The impacts could be pollution, littering, clearing of trees, creation of garden beds, planting more trees, raking of leaves, path ways being created, mowing lawns or buildings being constructed.
- Write each of the impacts onto sticky notes to be able to sort into positive and negative.
- On a large chart, have two columns – positive and negative. Sort the

**Lesson 8**

Formative assessment opportunities:

- use the students’ cause-and-effect charts to assess students ability to describe changes to objects.
- record/observe students’ responses when discussing ways to improve the negative impacts to assess students’ use of science knowledge to care for the environment.
### Teaching and learning

<table>
<thead>
<tr>
<th>Teaching strategies and learning experiences</th>
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<tbody>
<tr>
<td><strong>Investigation</strong> – Cause-and-effect charts</td>
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<td></td>
</tr>
<tr>
<td>• Using the information from the list of human impacts, have students complete a cause-and-effect chart, see Resource 5. Students might use examples around the school, or they may choose to use an example from their local community or their home.</td>
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<tr>
<td>• Ask students to share their cause-and-effect chart with the class.</td>
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</tr>
<tr>
<td>• As a class, look again at the negative column. Discuss and write down ways to improve the negatives. Students will need to reflect on ways to improve the negatives for their final assessment piece.</td>
<td></td>
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</tr>
<tr>
<td>• Add new words to the word wall.</td>
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</tr>
<tr>
<td>• Write/draw observations and reflections in science journal.</td>
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### ELABORATE – To build understanding through an investigation.

**Lesson 9 – Habitats in our local community**

**Suggested Time** – 1-2 hours (depending on how far you travel to photograph different habitats)

**Introduction** – Review

• Review photos from Lesson 2 of school habitats.

• Discuss what habitats students are going to take photos of in the local community. Identify habitats that are different from those photographed around the school. This is important to expose students to a wide variety of habitats and the plants and animals within them.

• Discuss with students how their photography of the habitats could improve; knowing what they now know about habitats, they may know more about what to look for.

**Investigation** – Photograph habitats in the local area

• Photograph multiple habitats from the local community. It is important for students to realise that there are several different types of habitats, each with different features. As in Lesson 2, photograph all parts of a habitat, including parts of trees and any animals seen.

• When returning to the classroom, display photos out with students if technology is available to do this. Otherwise, print them out when suitable, to have them ready for Lesson 10.

• Discuss with students what they photographed around the community.

• Alternatively if technology is not available to take and print photos, have the students each draw/sketch a habitat within the school.

**Lesson 9**

Summative assessment opportunities:
- observe students’ knowledge of habitats and living things during the excursion.

**Lesson 9**

Photos of school habitats from Lesson 2.

Cameras to take photos of habitats in the local community.
### Teaching and learning

<table>
<thead>
<tr>
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<tr>
<td>- Add new words to the word wall.</td>
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<tr>
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</tbody>
</table>

**Lesson 10 –** What happens if...?

**Suggested Time** – 45 minutes

**Introduction** – Review photos
- As a class, examine the photos (or pictures) from the previous lesson. Discuss what is the same and different about the habitats photographed in the local community and also the habitats photographed in the school grounds in Lesson 2.
- Sort the photos into each habitat photographed, name each habitat and create a display with the photos. Display students’ descriptive words to describe each habitat with the photos.

**Investigation** – Cause-and-effect chart
- Ask students to use their knowledge about habitats and impacts on habitats to create a cause-and-effect chart for one of the habitats from the local community. Students are to identify their own ‘cause’ for something happening in their chosen habitat. Students could work individually or in pairs.
- Students could also propose ways to care for the habitat they have identified to maintain it as a healthy habitat.
- Remember to also take time to reflect on the seedlings from Lesson 4.
- Add new words to the word wall.
- Write/draw observations and reflections in science journal.

**Lesson 10**
Summative assessment opportunities:
- use students’ cause-and-effect chart to assess students’ ability to identify the needs of living things and use this knowledge to care for those living things.

**Lesson 10**
Photos of habitats from Lesson 9 and Lesson 2.

Resource 5 – Cause-and-effect chart.

### EVALUATE – To review and reflect on learning

**Lesson 11 –** Presentation preparation

**Suggested Time** – 45 minutes

**Introduction** – Reflection and begin task
- If you started a KWL chart – this would be a good time to reflect and record what has been learned.
- Explain to the students that they are going to begin their final assessment presentation. Present them with a task sheet (Resource 6).
- Read through the task sheet together and identify all the requirements of the task. Teachers may also choose to create a simpler version of the guide to making judgements for students to use as a guide when preparing their presentation.

**Lesson 11 – 14**
Summative assessment opportunities:
- the students’ presentation can be used to assess their knowledge and understanding of science, science as a human endeavour and science inquiry skills.

**Lesson 11**
Resource 6 – Task Sheet.
<table>
<thead>
<tr>
<th>Teaching and learning</th>
<th>Supportive learning environment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teaching strategies and learning experiences</strong></td>
<td><strong>Assessment opportunities</strong></td>
</tr>
<tr>
<td>● Discuss available resources (identify all the work done throughout the unit that will help the students complete the task).</td>
<td></td>
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<tr>
<td>● Set out a plan for time management and resource management.</td>
<td></td>
</tr>
<tr>
<td><strong>Investigation</strong> – Start preparing presentations</td>
<td></td>
</tr>
<tr>
<td>● Allow students time to research and prepare their presentation.</td>
<td></td>
</tr>
<tr>
<td>● Students may need scaffolding for the different parts of the presentation, depending on the need of the class</td>
<td></td>
</tr>
<tr>
<td><strong>Lesson 12 and Lesson 13</strong> – Continue presentation preparation</td>
<td></td>
</tr>
<tr>
<td><strong>Suggested time</strong> – how much time students are able to spend preparing their presentations will depend on the needs of the class and the length of time available in the school term.</td>
<td></td>
</tr>
<tr>
<td><strong>Lesson 14</strong> – Presentation</td>
<td></td>
</tr>
<tr>
<td><strong>Suggested Time</strong> – 1 – 2 hours</td>
<td></td>
</tr>
<tr>
<td>Prepare an audience for the students to present their presentations to. Some presentations could be done during school parade, or filmed and shown to other classes. Parents and other school and community members could be invited to watch the presentations.</td>
<td></td>
</tr>
</tbody>
</table>

Refer to the guide to making judgements for the students’ oral presentation (p26-27).
<table>
<thead>
<tr>
<th>Use feedback (these are some suggestions, teachers will need to vary this according to the needs of their class)</th>
<th></th>
</tr>
</thead>
</table>
| **Ways to monitor learning and assessment** | Year 1 teacher:  
- Initially plan the teaching, learning and assessment needs of all learners and make adjustments to the unit plan as necessary  
- Use diagnostic, formative and summative assessment opportunities throughout the unit to plan for students learning and assess student knowledge development  
- Mark presentations and moderate with colleagues to achieve consensus and consistency of teacher judgement |
| **Feedback to students** | Teachers:  
- Plan opportunities for conversations to provide ongoing feedback (spoken and written) and encouragement to students on their strengths and areas for improvement  
- Reflect on and review learning opportunities to individualise learning experiences required  
- Provide multiple opportunities for students to experience, practise and improve knowledge, processes and skills  
Students:  
- Identify what they can do well and what they need to improve  
- Provide feedback to a peer on interaction skills and suggest some strategies for improvement (written and spoken feedback) |
| **Reflection on the unit plan** | At the conclusion of the unit, teachers can reflect on the unit for future planning by answering the following questions:  
- What worked well in this unit?  
- What was a stumbling block?  
- How would you refine it?  
- What trends and gaps in learning have you identified?  
- How will you build on these learning experiences next term and beyond? |
### Resource 1 – Procedural Text – *Seedling Investigation*

**Aim**

To find out what plants need to grow

**Materials**

- Seeds (e.g. sunflower seeds, watermelon seeds, bean seeds)
- Soil
- Two test tubes or glass jars to plant the seeds in (one control and one variable).
- Water

**Procedure**

1. Fill in the investigation planner until you reach the Results section.
2. Label your test tubes to show if it is a control or if something is going to change.
3. Fill each test tube up about half way with dirt.
4. Put one seed inside each test tube.
5. Cover the seeds with about 1cm of dirt.
6. Sprinkle a little bit of water into each test tube.
7. Put your seedlings in a safe place.
8. Take photos of your seedlings each day to record their growth.
## Investigation Planner

<table>
<thead>
<tr>
<th>Name:</th>
<th>Date:</th>
</tr>
</thead>
</table>

### Title of our Investigation

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>What do we think will happen?</th>
</tr>
</thead>
</table>

### To make the test fair what are you going to:

<table>
<thead>
<tr>
<th>Change?</th>
<th>Measure?</th>
<th>Keep the Same?</th>
</tr>
</thead>
</table>

### Diagram and Equipment
 Resource 2 – Investigation Planner (cont.)

<table>
<thead>
<tr>
<th>Procedure – What are we going to do?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Results – What happened?</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Was your hypothesis correct?</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Teacher Comments:</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
**Resource 4 – Procedural Text – Celery Experiment**

### Aim
To find out what plants need to grow

### Materials

| • Three celery stalks (with leaves still on is best) |
| • Food colouring (red and blue) |
| • Three glasses, jars or measuring jugs. |
| • Water |

### Procedure

1. Fill in the investigation planner until you reach Results on page 2.
2. Fill each container half way with water.
3. Add some drops of food colouring to the water in two of the glasses. (The last glass will be left as your control, so do not add any colour to this.)
4. Put one stalk of celery into each cup.
5. Put the glasses with the celery stalks in them in a safe place.
6. Leave them overnight.
7. The next day record your results.
### Resource 5 – Cause-and Effect Chart

<table>
<thead>
<tr>
<th>CAUSE</th>
<th>EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What was the event? Remember to identify the habitat.</td>
</tr>
<tr>
<td></td>
<td>What happened?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAUSE</th>
<th>EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>What was the event? Remember to identify the habitat.</td>
</tr>
<tr>
<td></td>
<td>What happened?</td>
</tr>
</tbody>
</table>
Resource 6 – Task Sheet

Habitats - Year 1 Science Investigation

Your Job:
Prepare an oral presentation to share with your class.
Your oral presentation will be about a habitat you choose.

In your oral presentation you will need to include:
1. A description of your habitat.
2. A labelled diagram of an animal that lives in the habitat.
3. A labelled diagram of a plant that lives in the habitat.
4. A description of how the animal uses its body to survive in the habitat.
5. A cause-and-effect diagram of a problem in the habitat that affects your chosen animal in the habitat.
6. Suggest two ways to improve the health of the habitat.

Your teacher will help you research and prepare your oral presentation.

Hints for your presentation:
• Choose a habitat that you are interested in. It might be a place you visit on weekends, or a place in your own backyard.
• When you share your presentation with your class, you should speak clearly and loudly.
• Be confident.
• Make sure your diagrams are neat and correct.
### Year 1 Science: Habitat Investigations – Oral Presentation

**Purpose of assessment:** Students will provide an oral presentation on their chosen habitat. Students will include diagrams of an animal, a plant and a cause-and-effect relationship.

<table>
<thead>
<tr>
<th>Knowledge and Understanding</th>
<th>Science Understanding</th>
<th>Science as a Human Endeavour</th>
<th>Questioning and Predicting</th>
<th>Processing and Analysing Data and Information</th>
<th>Communicating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences</td>
<td>External features of one animal and how those features help the animal to survive in its natural habitat.</td>
<td>- Explain the cause and effects that a change to the animals' habitat can have on the animal.</td>
<td>- Participation in investigations by questioning and planning responses.</td>
<td>- Gathers and records relevant information to make accurate conclusions about the animal, plant, habitat, threats and solutions.</td>
<td>- Ability to orally describe and share observations and ideas about the chosen animal, plant and identified cause-and-effect relationship.</td>
</tr>
<tr>
<td>Nature and Development of Science</td>
<td>- Describe the changes that the animal's habitat can have on the animal.</td>
<td>Use and Influence of Science</td>
<td>- Identifies solutions to prevent or address the change in the animals' habitat.</td>
<td>- Identifies one relevant issue relating to animal, plant, habitat, threats and solutions.</td>
<td>- Ability to construct labelled diagrams of the chosen animal, plant and cause-and-effect relationship.</td>
</tr>
<tr>
<td>Skills</td>
<td>Science Inquiry Skills</td>
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</table>

### The student provides a considered description of most external features of the chosen animal. They make a considered explanation of the habitat and the animal’s survival needs, making accurate links between the animal’s features and its habitat. In detail, they describe the features of the chosen plant. They provide a considered description of the relationship between the plant and animal.

### The student displays a very high ability to describe and draw conclusions about one relevant issue relating to the animal in its habitat. They accurately pose more than two considerations for future management of the habitat based on investigations and knowledge.

### The student's questioning is clearly connected and relevant to planning and developing reasoned questions relating to animal, plant, habitat, threats and solutions. Some information is gathered and recorded during investigations independently.

### The student accurately and easily (orally) describes and reflects on knowledge and investigations linking what they have learned and discovered in a detailed, confident and clear manner. Their cause-and-effect diagram accurately demonstrates one issue relevant to the habitat.
### QSA Literacy indicators (2009)

<table>
<thead>
<tr>
<th>Speaking and Listening</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SP1 xi.</strong></td>
<td>Interpret and use vocabulary about the topic and new vocabulary drawn from language experiences to label, categorise, describe and explain.</td>
</tr>
</tbody>
</table>
| **SP1 xii.** | Plan for spoken presentations by:  
  - Sequencing events and ideas  
  - Collecting visual resources  
  - Responding to prompts to organise information when speaking. |

<table>
<thead>
<tr>
<th>Writing and Designing</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WD1 i.</strong></td>
<td>Identify the purpose and topic for writing and designing and a small range of literary and non-literary texts.</td>
</tr>
<tr>
<td><strong>WD1 ii.</strong></td>
<td>Write text types to describe, recount, instruct and respond.</td>
</tr>
<tr>
<td><strong>WD1 xiv.</strong></td>
<td>Confirm spellings and word meanings or choice of words using a personal dictionary, word list or environmental print.</td>
</tr>
<tr>
<td><strong>WD1 xv.</strong></td>
<td>Select vocabulary that describes people, characters, events, places or things.</td>
</tr>
<tr>
<td><strong>WD1 xvi.</strong></td>
<td>Select language, images or illustrations to represent people, characters, events, places or things.</td>
</tr>
</tbody>
</table>

Feedback ......................................................................................................................................................
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