

<b>Summary</b>	<b>Duration</b>
<p>This excursion, along with the pre- and post- excursion lessons supplied, allows students to meet curriculum outcomes in a day of discovery and analysis. Students use a range of scientific skills and equipment, following up by designing and creating a way to improve the natural habitat at school.</p> <p>This unit covers outcomes for the first two content strands of the living world outcome for stage 1.</p>	<p>Sample term 5 weeks</p>

<b>Key inquiry questions</b>
<ul style="list-style-type: none"> <li>▪ What are the external features of living things?</li> <li>▪ How can we improve a local environment to encourage living things to thrive?</li> </ul>

<b>Outcomes</b>
<p>Science and Technology K-6</p> <p>ST1-1WS-S observes, questions and collects data to communicate and compare ideas</p> <p>ST1-2DP-T uses materials, tools and equipment to develop solutions for a need or opportunity</p> <p>ST1-4LW-S describes observable features of living things and their environments</p>

<b>Content strand summary</b>	<b>Working scientifically skills</b>	<b>Thinking skills</b>
	<p><b>Questioning and predicting</b></p> <ul style="list-style-type: none"> <li>▪ pose questions about familiar objects and events</li> <li>▪ respond to posed questions</li> <li>▪ make predictions about possible findings</li> </ul> <p><b>Planning and conducting investigations</b></p> <ul style="list-style-type: none"> <li>▪ explore and answer questions through participation in scientific investigations</li> <li>▪ collect data from observations</li> <li>▪ record observations accurately and honestly using observational drawings, labelling, informal measurements and digital technologies</li> <li>▪ compare observations with those of others</li> <li>▪ develop collaboration skills to effectively conduct investigations</li> <li>▪ make safe choices when using materials and equipment</li> </ul> <p><b>Processing and analysing data</b></p> <ul style="list-style-type: none"> <li>▪ use a range of methods to sort and collate information</li> <li>▪ represent information using drawings and simple tables, including digital representation methods</li> </ul> <p><b>Communicating</b></p> <ul style="list-style-type: none"> <li>▪ represent and communicate observations and ideas in a variety of ways</li> </ul>	<p><b>Computational thinking - ComT</b></p> <p><b>Design thinking - DesT</b></p> <p><b>Scientific thinking - SciT</b></p> <p><b>Systems thinking - SysT</b></p>

## Unit overview

This excursion allows students to discover the hidden treasures in the bush. They learn about habitats and why animals look like where they live (camouflage). Students catch tiny bugs off trees before using microscopes to analyse them closely. Local Indigenous culture is incorporated in the story of how Muruduwin (the Blue Wren) got his colour, taking part in the story by painting themselves up with ochre. Students then trek through the bush on a guided walk, using binoculars to search for birds. Will they see a Blue Wren hiding in his habitat?

## Resources overview

### Pre-excursion activities

- "Can You Find Me"? by Gordon Winch and Patrick Shirvington
- Coloured/patterned paper
- Lizard cutouts
- Paper & colours

### Excursion activity 1

- A4 paper
- Crayons
- Students' bugs from school or plastic toy bugs

### Excursion activity 2

- Tree shake equipment
- Microscopes














### Excursion activity 3

- Blue Wren story
- Ochre/charcoal
- Blue chalk to make blue ochre
- Binoculars

### Post-excursion activities

- List of Sydney's native small birds
- List of animals students saw on the excursion

Content	Teaching, learning and assessment
<p><b>Stage 1 - Living World</b>  <b>Content Focus</b></p> <p>Stage 1 of the Living World strand focuses on the features of living things, their environment and how they change and reproduce. Students investigate how plants and animals are used to satisfy our needs for food and fibre. Stage 1 of this strand develops students' understanding of how living things and their environment play a central role in the support for and survival of humans.</p>	<p>This unit covers outcomes for the first two content strands of the living world outcome for Stage 1:</p> <p><b>External features of living things</b>  <b>Inquiry question:</b> What are the external features of living things?</p> <p><b>Living things live in different places</b>  <b>Inquiry question:</b> How can we improve a local environment to encourage living things to thrive?</p>
<p><b>Stage 1 - Living World</b>  <b>Working Scientifically</b></p> <p>Planning and conducting investigations</p> <ul style="list-style-type: none"> <li>▪ explore and answer questions through participation in guided scientific investigations (AC SIS025, AC SIS038)</li> <li>▪ collect data from observations</li> <li>▪ record observations accurately and honestly using observational drawings, labelling, informal measurements and digital technologies (AC SIS026, AC SIS039)</li> <li>▪ compare observations with those of others (AC SIS041, AC SIS213)</li> <li>▪ develop collaboration skills to effectively conduct investigations</li> <li>▪ make safe choices when using materials and equipment</li> </ul>	
<p><b>Stage 1 - Living World</b>  <b>Content</b></p> <p><b>External features of living things</b>  <b>Inquiry question:</b> What are the external features of living things?  Students:</p> <ul style="list-style-type: none"> <li>▪ describe the external features of a variety of living things (ACSSU017) 🐸</li> </ul>	<p><b>Pre-Excursion Activities</b>  <i>Can You Find Me?</i>  Students read "Can You Find Me"? by Gordon Winch and Patrick Shirvington. Discuss camouflage, where animals look like where they live. Example activities for classrooms to teach camouflage:</p> <ol style="list-style-type: none"> <li>1. Hide the lizard <ul style="list-style-type: none"> <li>▪ Students cut out a paper lizard (use the Pattern Universe website to find a template <a href="https://patternuniverse.com/download/gecko-pattern/">https://patternuniverse.com/download/gecko-pattern/</a> )</li> <li>▪ Give students a piece of patterned paper, for example coloured stripes or spots. Scrapbooking paper is great for this activity.</li> <li>▪ Ask students to place the cutout lizard on the paper and "hide it" - colour the lizard in with the same colours and patterns as the paper behind it. Staple the lizard to the paper and display.</li> </ul> </li> <li>2. Hide the dots <ul style="list-style-type: none"> <li>▪ Use the page attached. Print two pages: <ul style="list-style-type: none"> <li>▪ cut one page into small pieces or use a hole punch to get tiny dots.</li> <li>▪ use the other page as the background</li> </ul> </li> <li>▪ Students need to hide their dots on the background they match.</li> </ul> </li> <li>3. Make a bug <ul style="list-style-type: none"> <li>▪ With their newfound knowledge of camouflage, students draw a bug on an A5 piece of paper. The bug could be real or imagined, but it should be the type of bug they might find in local bushland. Students must colour their bug in, being mindful of the colours they might have seen in the trees, bush or soil. <b>These bugs should be brought to Brewongle EEC for the excursion.</b></li> </ul> </li> </ol>
<p><b>Stage 1 - Living World</b>  <b>External features of living things</b>  <b>Inquiry question:</b> What are the external features of living things?  Students:</p> <ul style="list-style-type: none"> <li>▪ describe the external features of a variety of living things</li> </ul>	<p>Location: Yarning Circle</p> <p><b>Activity 1A. Bark Rubbings and Plant Identification</b></p> <ul style="list-style-type: none"> <li>▪ Fold an A4 piece of paper in half (end to end) and draw a line along the crease. With a piece of charcoal, lead or crayon, lean your paper against a tree and gently rub the crayon over your paper. Do a bark rubbing on two different trees, one on either half of your page: <ul style="list-style-type: none"> <li>▪ Grey Gum</li> </ul> </li> </ul>

Content	Teaching, learning and assessment
<p>(ACSSU017) </p> <ul style="list-style-type: none"> <li>identify and group plants and animals using their external features, for example:   </li> <li>native and introduced plants and animals</li> <li>worms, insects, fish, reptiles, birds and mammals</li> </ul> <p>Living things live in different places  <b>Inquiry question:</b> How can we improve a local environment to encourage living things to thrive?  Students:</p> <ul style="list-style-type: none"> <li>identify that living things live in different places that suit their needs (ACSSU211)  </li> <li>recognise that people use science and technology in their daily lives, including when caring for their environment and living things (ACSHE022, ACSHE035)   </li> </ul>	<ul style="list-style-type: none"> <li>Stringybark</li> <li>Compare the two bark rubbings and explain the use of bark to identify trees. Discuss texture as well as colour</li> </ul> <p><b>Activity 1B. Camouflage - Bug Hide &amp; Seek</b>  Students work in pairs. At the yarning circle, hand out half of the students' bugs which they drew at school. Ensure only student 1 of pair gets their bug, not student 2 yet. (in the absence of these or in wet weather, use small plastic toy bugs). Discuss the colour and shape of the bug and point out similar colours and structures in the surrounding plants. Students find a tree where their bug will be safe and well camouflaged (hidden).  To share:  - Student 1 - hides their bug in a perfectly camouflaged place - BUT DON'T FORGET WHERE IT IS! Go back to your buddy and play hot/cold to help other student 2 find your bug.  Give the group 5-10 mins to find all bugs before swapping roles with their buddy.</p> <p>Location: Ironbark Classroom (on the ridge)  <b>Activity 2A. Micro Habitats &amp; Tree Shakes</b></p> <ul style="list-style-type: none"> <li>Introduce the idea of a micro habitat on a branch of a tree. Discuss all the tiny animals which feed and live on the branches of trees.</li> <li>Conduct tree shakes</li> </ul> <p><b>Activity 2B. Earth Lab Analysis of Bugs</b></p> <ul style="list-style-type: none"> <li>Bring tree shake bugs to the Earth Lab and use iPads or micro-eye to look at bugs.</li> <li>Do a detailed drawing of one bug - scaffolded together using IWB</li> <li>Tally and collate data into table - How many bugs did we find per tree shake?</li> </ul> <p>Location: Campfire  <b>Activity 3A: Muruduwin the Blue Wren</b>  Students sit around the lit campfire and listen to the Dreamtime Story of How the Blue Wren (Muruduwin) Got His Colours.  As the teacher reads through the story, students paint their faces up with various coloured ochre to follow the story. Boys add blue ochre (because they're bold and brave like the male blue wren) but girls use grey and black (they're well camouflaged for protection).</p> <p>Location: Campfire down the sulky track  <b>Activity 3B: Birdwatch Walk</b>  Students go on a guided walk, using binoculars to look closely at any birds they might see.  Discuss various habitats through the walk and discuss exactly where different animals may live. Particular focus on what birds need to live and what we can do here and back at school to make sure there's plenty of habitat for small birds (flowering, bushy, native shrubs and long grasses)  <b>Key words for walk: camouflage, foraging/feeding, nesting, shelter, predators, surveying, monitoring, conservation, habitat, ecologist</b>  <i>Did you see a blue wren? What was it doing?</i></p>
<p><b>Stage 1 - Living World</b></p> <ul style="list-style-type: none"> <li>design and produce an environment to cater for the needs of a living thing, for example:    </li> <li>encourage the growth of a plant, eg greenhouses, hydroponics</li> <li>encourage the return of a living thing to a local habitat</li> </ul>	<p><b>Post excursion activity / assessment - Plan and build a habitat at school</b>  <i>Project based learning unit.</i>  Students choose a native animal they learnt about at Brewongle (provide list). Design and produce a habitat within your school where this animal can live. Include notes on the needs of animals at various stages in their life, eg. nesting birds or reptiles, tadpoles and frogs, etc.  For example, a small bird haven for Muruduwin (Blue Wren), with long native grasses and flowering shrubs. This doesn't take much space - an area of 5 sq m would suffice. Include a birdbath and wait for the birds to find it!  Monitor the animals using the habitat - eg. a short survey before recess each day, looking for animals and evidence of them (tracks, scats, scratches etc). If animals aren't using the habitat, consider possible reasons why and re-visit the design of the space...what's missing?</p>

## Assessment overview

School based assessment

# Syllabus images and equations

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