Living World Stage 2 | Stage 2 | Science

Summary	Duration
	Sample term 1 week Detail: 5hr Excursion with 2hrs of pre and post tasks

Key inquiry questions

How can we group living things?
What are the similarities and differences between the life cycles of living things?
How are environments and living things interdependent?

Outcomes

Science and Technology K-6
ST21WSS questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations
ST24LWS compares features and characteristics of living and non-living things

Content strand summary	Working scientifically skills	Thinking skills
The Living World strand explores living things and their needs. The key concepts developed within this strand are: living things have similar characteristics; are interdependent and interact with each other and their environment; living things and their features are related to the environments in which they live. Through this strand, students explore life cycles, structural adaptations and behaviours of living things. These developmental features and characteristics aid survival in particular environments.	**Planning and Conducting Investigations** Plan scientific investigations with guidance Conduct scientific investigations to find answers to questions Use appropriate materials and equipment safely Collect and record accurate, honest observations using labelled observational drawings, basic formal measurements and digital technologies as appropriate Reflect on investigations, including whether the test was fair or not Participate individually and collaboratively with clear roles and goals. **Processing and Analysing Data** Use a range of methods to represent data, including tables and column graphs Identify patterns and trends in gathered data Compare results with predictions Suggest possible reasons for findings **Communicating** Represent and communicate observations, ideas and findings using formal and informal representations.	Productive, purposeful and intentional thinking underpins effective learning in Science and Technology. Students are provided with opportunities to apply thinking skills, develop an understanding of the processes they can use as they encounter problems, unfamiliar information and new ideas. **Scientific thinking - SciT** Scientific thinking is purposeful thinking that has the objective to enhance knowledge. A scientific thinker raises questions and problems, observes and gathers data, draws conclusions based on evidence, tests conclusions, thinks with an open mind and communicates research findings appropriately. **Systems thinking - SysT** Systems thinking is an understanding of how related objects or components interact to influence how a system functions. Students are provided with opportunities to recognise the connectedness of, and interactions between phenomena, people, places and events in local and wider contexts and consider the impact of their decisions. Understanding the complexity of systems and the interdependence of components is important for scientific research and for the creation of solutions to technical, economic and social issues.

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Unit overview

This unit of work is designed to aid classroom teachers to deliver the Living World content and skills for stage 2 Science and Technology. The unit and associated student workbook will provide teachers with a scaffold for some pre and post excursion tasks to aid in the fieldwork that will be completed during a day excursion to Brewongle EEC.

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Content	Teaching, learning and assessment
Stage 2 - Living World Stage 2 of the Living World strand focuses on the classification, life cycles and survival of living things. Students consider the agricultural processes used to grow plants and raise animals. Students design and produce a product or system to support the growth of a plant and/or animal. **Working Scientifically** **Planning and conducting investigations** ▪ **plan scientific investigations with guidance** ▪ **consider and apply the elements of fair tests** ▪ **identify that living things have life cycles** (ACSSU072) ▪ **conduct an investigation into the life cycle of plants and/or animals** (ACSSU072) SciT	**Pre excursion tasks - 2hrs Visit pre-excursion page on our website** Students will Conduct research into the life cycle of two of the following denizens of the Brewongle Ponds: ▪ Dragonfly ▪ Mosquito Include the following: A scientific drawing for your water bug, a labelled diagram that shows the lifecycle of your water bug. Utilise the Waterwatch NSW fact sheets and worksheets 8.13-8.16. Use water bug worksheet 8.15 to plan your investigation.

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Content	Teaching, learning and assessment
Stage 2 - Living World **Working Scientifically** **Planning and conducting investigations** ▪ **conduct scientific investigations to find answers to questions** ▪ **use appropriate materials and equipment safely** (ACSIS054, ACSIS065) ▪ **consider and apply the elements of fair tests** ▪ **collect and record accurate, honest observations using labelled observational drawings, basic formal measurements and digital technologies as appropriate** (ACSIS055, ACSIS066) ▪ **participate individually and collaboratively with clear roles and goals** **Classification of living things** **Inquiry question:** How can we group living things? Students: ▪ **collect data and identify patterns to group living things according to their external features, and distinguish them from non-living things** (ACSSU044) SysT ▪ **identify that science involves making predictions and describing patterns and relationships** (ACSHE050, ACSHE061) SciT **Life cycles of living things** **Inquiry question:** What are the similarities and differences between the life cycles of living things? Students: ▪ **identify that living things have life cycles** (ACSSU072) ▪ **conduct an investigation into the life cycle of plants and/or animals** (ACSSU072) SciT **Survival of living things** **Inquiry question:** How are environments and living things interdependent? Students: ▪ **describe how living things depend on each other and the environment to survive, for example:** (ACSSU073) SysT	**Excursion to Brewongle EEC 5hrs** Students will rotate through 3 activities to conduct their investigations and answer inquiry questions. For large groups - activities will be in two. The day will end with a group sand art story. **Activity 1** Dip netting to discover which bugs live in the Brewongle ponds. Identify and record data on abundance. Data will be collated for the whole class from smaller group samples. **Activity 2** Classification activity with resin bugs and plastic bugs and animals. Drawing with scratch art. Students will learn to count in Darug. **Activity 3** Food webs - activity utilising our Connector Inspector game. Students will learn Aboriginal names for plants and animals and discover the food web connections between them including what happens when one plant or animal in the web is threatened. **Activity 4** Group sand art story about Tiddalik the Frog.

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Content	Teaching, learning and assessment
Stage 2 - Living World ▪ reflect on investigations, including whether testing was fair or not (ACSIS058, ACSIS069) Processing and analysing data ▪ use a range of methods to represent data, including tables and column graphs ▪ identify patterns and trends in gathered data (ACSIS057, ACSIS068) ▪ compare results with predictions ▪ suggest possible reasons for findings (ACSIS215, ACSIS216) Communicating ▪ represent and communicate observations, ideas and findings, using formal and informal representations (ACSIS060, ACSIS071)	**Post excursion tasks 2hrs** Represent data collected on water bugs as a column graph that shows the abundance (amount) of each water bug collected by the class. Identify the most abundant creatures in Brewongle Ponds. Create a food web of the creatures living in the ponds. Create a habitat list needed for these creatures. Classify these creatures based on observable features.

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