

Summary	Duration
<p>This Stage 3 program is written as a Cross-Curricular unit covering Geography "Factors that Shape Places" and Science and Technology - Living World. It is a Geographical Inquiry, enabling students to work through the 2 stages of Geographical Inquiry; Acquiring, Processing and Communicating Geographical Information. Students use a number of Geographical Tools, with a particular focus on Fieldwork and Mapping.</p> <p>The unit is scaffolded to enable teachers to deliver engaging, relevant content with support from Brewongle Environmental Education Centre.</p>	<p>Sample term 7 weeks</p>

Key inquiry questions

- How have Australian Native plants adapted to bushfire?
- How does bushfire influence the vegetation type in Sackville North?
- How can the impact of bushfires on people and places be reduced?

Outcomes

Geography K-10

- › GE3-2 explains interactions and connections between people, places and environments
- › GE3-3 compares and contrasts influences on the management of places and environments
- › GE3-4 acquires, processes and communicates geographical information using geographical tools for inquiry

Science K-10 (inc. Science and Technology K-6)

- › ST3-10LW describes how structural features and other adaptations of living things help them to survive in their environment
- › ST3-11LW describes some physical conditions of the environment and how these affect the growth and survival of living things

Geographical concepts	Geographical inquiry skills	Geographical tools
<p>Place: <i>the significance of places and what they are like</i> e.g. characteristics of places.</p> <p>Space: <i>the significance of location and spatial distribution, and ways people organise and manage spaces that we live in</i> e.g.; how people organise and manage spaces in their local environment.</p> <p>Environment: <i>the significance of the environment on human life, and the important interrelationships between humans and the environment</i> e.g. how the environment influences people and places; how people influence the environment; the effect of natural disasters on the environment.</p> <p>Interconnection: <i>no object of geographical study can be viewed in isolation</i> e.g. how environments influence where people live; ways</p>	<p>Acquiring geographical information</p> <ul style="list-style-type: none"> ▪ identify an issue or problem ▪ develop geographical questions to investigate the issue or problem ▪ collect primary geographical data ▪ gather geographical information from secondary sources ▪ record information <p>Processing geographical information</p> <ul style="list-style-type: none"> ▪ represent data and information in appropriate forms ▪ analyse findings and results ▪ draw conclusions <p>Communicating geographical information</p>	<p>Maps Fieldwork Spatial Technologies Visual Representations</p>

<p>people influence the characteristics of their environments.</p> <p>Scale: <i>the way that geographical phenomena and problems can be examined at different spatial levels</i> e.g. environmental and human characteristics of places on local and regional scales; the effect of events on people and places locally and regionally.</p>	<ul style="list-style-type: none"> ▪ communicate the results using a variety of strategies appropriate to the subject matter ▪ reflect on the findings of the investigation; what has been learned; the process and effectiveness of the inquiry ▪ propose actions and predict outcomes ▪ where appropriate, take action 	
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<p>Unit overview</p>
<p>Some plants are more resilient to bushfire than others and in fact, need fire to survive and thrive. Through this unit of work including an excursion to Brewongle Environmental Education Centre, students will learn how to identify local native plants and will focus in on a number of plants' adaptations that make them more resilient to bushfire. Students will gain understanding of what it means for a place to be "bushfire prone" and learn how to identify risk and prevent and minimise the effects of a bushfire.</p> <p><i>This unit is designed as a Geographical Inquiry focusing on the role of bushfire on local vegetation and environments and how the impact of bushfires on people and places can be reduced.</i></p>

Content	Teaching, learning and assessment
<p>Stage 3 - Living World</p> <p>Living things have structural features and adaptations that help them to survive in their environment. (ACSSU043)</p> <p>Students:</p> <ul style="list-style-type: none"> ▪ present ideas and explanations about how the structural features and behaviour of some plants and animals help them to survive in their environment, eg shiny surfaces of leaves on sand dune plants and nocturnal behaviour in some animals  	<p>ACQUIRING Geographical Information</p> <p>PRE-EXCURSION TASK</p> <p>Students conduct online research to identify 4-5 structural adaptations of Australian Native Plants to bushfire. They explain how the structural features help them to survive in their environment. Students present this information in a table and bring the information to their Brewongle Excursion. The table should include:</p> <ul style="list-style-type: none"> ▪ Plant type or species ▪ Structural adaptation to bushfire ▪ How the adaptation helps the plant survive <p>Resources:</p> <p>http://www.kidcyber.com.au/adaptation/</p> <p>http://www.skwirk.com/p-c_s-11_u-102_t-256_c-854/the-adaptation-of-plants/nsw/science-technology/a-change-for-the-better/how-do-living-things-survive-suited-to-the-environment-we-live-in</p> <p>http://splash.abc.net.au/res/teacher_res/12-adaptations.html</p> <p>http://scienceweb.asta.edu.au/years-5-6/unit2/overview/yr56-unit2-overview.html</p>
<p>Stage 3 - Living World</p> <p>Living things have structural features and adaptations that help them to survive in their environment. (ACSSU043)</p> <p>Students:</p> <ul style="list-style-type: none"> ▪ observe and describe the structural features of some native Australian animals and plants  	<p>AT BREWONGLE EEC</p> <p>Excursion Activity 1.</p> <p>Classify and Identify Local Native Plants</p> <p>Looking closely at plants around Brewongle, students learn the basic parts of a woody plant (Trees and Shrubs), then learn how to use an Identification Key to identify plants. They work their way through the Identification Key by making successive choices based on the plant they're attempting to identify.</p> <p>In small groups, students take photos and describe features of each plant using the Book Creator App.</p>
<p>Stage 3 - Living World</p> <p>Living things have structural features and adaptations that help them to</p>	<p>Excursion Activity 2.</p> <p>Adaptations of Native Plants to Bushfire</p>

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<p>survive in their environment. (ACSSU043)</p> <p>Students:</p> <ul style="list-style-type: none"> present ideas and explanations about how the structural features and behaviour of some plants and animals help them to survive in their environment, eg shiny surfaces of leaves on sand dune plants and nocturnal behaviour in some animals  <p>The growth and survival of living things are affected by the physical conditions of their environment. (ACSSU094)</p> <p>Students:</p> <ul style="list-style-type: none"> identify some physical conditions of a local environment, eg temperature, slope, wind speed, amount of light and water observe and describe the structural features of some native Australian animals and plants  	<p>Students use the Book Creator App on iPads to photograph and explain adaptations that local native (Dry Sclerophyll*) plants have to bushfire. Students are provided with a list of common adaptations to fire and should combine this with their pre-excursion task work to complete this task. With some guidance, students search for examples of each adaptation on the list, then explain how this adaptation benefits the plant in response to fire.</p> <p>Adaptations visible to students include:</p> <ul style="list-style-type: none"> Oil dots in leaves Smooth, rough or papery bark Seed pods ("fruit" are woody and thermally insulated and release seeds after fire) <p>*Sclerophyll is a term used to describe plants with an adaptation for survival in extreme conditions.</p>
<p>Stage 3 - Factors that Shape Places</p> <p>Bushfire hazard</p> <p>Students:</p> <ul style="list-style-type: none"> investigate the impact of ONE contemporary bushfire hazard in Australia, for example: (ACHGK030) <ul style="list-style-type: none"> examination of how people can prevent and minimise the effects of a bushfire    <p>Stage 3 - Living World</p> <p>The growth and survival of living things are affected by the physical conditions of their environment. (ACSSU094)</p> <p>Students:</p> <ul style="list-style-type: none"> identify some physical conditions of a local environment, eg temperature, slope, wind speed, amount of light and water 	<p>Excursion Activity 3.</p> <p>What makes a place "bushfire prone"?</p> <p>Starting in the Earth Lab, students use Google Earth to locate Brewongle, then change scale and walk around the site assessing features that make a place more "prone" to bushfire, including:</p> <ul style="list-style-type: none"> Connectivity to other bush Topography/slope Vegetation Structure and Moisture (students create their own Nature Maps to illustrate these features) Climate, weather and microclimate
<p>Stage 3 - Factors that Shape Places</p> <p>Bushfire hazard</p> <p>Students:</p> <ul style="list-style-type: none"> investigate the impact of ONE contemporary bushfire hazard in Australia, for example: (ACHGK030) <ul style="list-style-type: none"> identification of the location and extent of the disaster  description of the impact of the disaster on natural vegetation and the damage caused to communities    examination of how people can prevent and minimise the effects of a bushfire    	<p>POST-EXCURSION TASKS</p> <p>PROCESSING Geographical Information</p> <p><i>Task 1. Your School</i></p> <p>Use your Book Creator Book to identify the plants at your school.</p> <p>What can you do to reduce the risk of (mitigate) bushfire at your school while maintaining natural habitat and biodiversity?</p> <p>COMMUNICATING Geographical Information</p> <p><i>Task 2. Bushfire Disaster in Your Local Region</i></p> <p>Research a bushfire disaster in your local area (for example, the Blue Mountains Bushfire of October 2013) and make a creative presentation (poster, infographic, etc) including the following:</p> <ul style="list-style-type: none"> Identify the location and extent of the bushfire Describe the impact of the disaster on natural vegetation and the damage caused to communities

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	<p><i>Task 3. Your Future</i></p> <p>How can people be more prepared if they live in bushfire prone areas? Design a project to teach your local community how to:</p> <ul style="list-style-type: none"> ▪ Identify bushfire risk; and ▪ Prevent and minimise the effects of a bushfire

Assessment overview
<p>Formative Assessment - Conducted throughout the excursion</p> <p>Summative Assessment:</p> <ul style="list-style-type: none"> ▪ Students' Book Creator files can be used to assess their learning of Science and Technology outcomes during the excursion. ▪ Tasks 2 and 3 of the Post-Excursion Tasks can be used to assess student learning of the unit.