

YEAR LEVEL	PRESENTATION DESCRIPTION	LEARNING OUTCOMES	CURRICULUM LINK	PRE-INCURSION CLASSROOM ACTIVITIES AND RESOURCES	POST-INCURSION CLASSROOM ACTIVITIES AND RESOURCES
K – 2	<p>In this session, students will explore the questions:</p> <ul style="list-style-type: none"> <li>• What's Antarctica's climate like?</li> <li>• How is Antarctic climate measured?</li> <li>• Why does Antarctica's climate look like this?</li> </ul> <p>We'll match weather descriptors with pictures of different climates, talk about specific weather conditions in Antarctica, and dress up in Antarctic gear. We will also look at different objects that have been and are used to measure climate data, and explore what factors influence a place's climate, including the effects of the sun, air currents, and ocean currents. We will finish each presentation with a surprise (snow simulation).</p>	<ul style="list-style-type: none"> <li>• Identify key factors that shape a place's climate</li> <li>• Compare Australian and Antarctic climate</li> <li>• Describe the differences between Antarctic summer and winter</li> <li>• Recognise methods used to study climate and weather in Antarctic</li> </ul>	<p><b>Science Understanding</b></p> <p>AC9S1U02 - describe daily and seasonal changes in the environment and explore how these changes affect everyday life</p> <p><b>Science as a Human Endeavour</b></p> <p>AC9SFH01 - explore the ways people make and use observations and questions to learn about the natural world</p> <p>AC9S2H01 - describe how people use science in their daily lives, including using patterns to make scientific predictions</p> <p><b>Science Inquiry</b></p> <p>AC9S2I01 - pose questions to explore observed simple patterns and relationships and make predictions based on experiences</p> <p>AC9S2I02 - suggest and follow safe procedures to investigate questions and test predictions</p> <p>AC9S2I03 - make and record observations, including informal measurements, using digital tools as appropriate</p> <p>AC9S2I04 - sort and order data and information and represent patterns, including with provided tables and visual or physical models</p> <p>AC9SFI05 - share questions, predictions, observations and ideas with others</p>	<ul style="list-style-type: none"> <li>🔗 <a href="#">Climate vs weather video</a></li> <li>🔗 <a href="#">Australian Academy of Science lesson on weather</a></li> <li>🔗 <a href="#">Australian Antarctic Program Antarctic climate overview</a></li> <li>🔗 <a href="#">Bureau of Meterology Aerological Diagrams</a></li> <li>🔗 <a href="#">Understanding Aerological Diagrams / Soundings</a></li> </ul>	<ul style="list-style-type: none"> <li>🔗 <a href="#">Australian Antarctic Program research station live webcams</a></li> <li>🔗 <a href="#">Weather balloon video</a></li> <li>🔗 <a href="#">Radiosonde live tracker</a></li> <li>🔗 <a href="#">Ocean currents video</a></li> <li>🔗 <a href="#">Polar vortex video</a></li> </ul> <p><b>Activity suggestion</b></p> <ul style="list-style-type: none"> <li>• Conduct your own weather experiments using rain gauges, temperature gauges, a windsock.</li> <li>• Keep a weather diary for a week.</li> </ul>

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3 – 4	<p>In this session, students will explore the questions:</p> <ul style="list-style-type: none"> <li>• What's Antarctica's climate like?</li> <li>• How is Antarctic climate measured?</li> <li>• Why does Antarctica's climate look like this?</li> </ul> <p>We'll match weather descriptors with pictures of different climates, talk about specific weather conditions in Antarctica, and dress up in Antarctic gear. We will also look at different objects that have been and are used to measure climate data, and explore what factors influence a place's climate, including the effects of the sun, air currents, and ocean currents. We will finish each presentation with a surprise (snow simulation).</p>	<ul style="list-style-type: none"> <li>• Identify key factors that shape a place's climate</li> <li>• Compare Australian and Antarctic climate</li> <li>• List the differences between Antarctic summer and winter</li> <li>• Explain how Antarctica stays so cold</li> <li>• Describe methods used to study climate and weather in Antarctica</li> </ul>	<p><b>Science Understanding</b></p> <p>AC9S3U03 - identify sources of heat energy and examine how temperature changes when heat energy is transferred from one object to another</p> <p><b>Science as a Human Endeavour</b></p> <p>AC9S4H01 - examine how people use data to develop scientific explanations</p> <p>AC9S4H02 - consider how people use scientific explanations to meet a need or solve a problem</p> <p><b>Science Inquiry</b></p> <p>AC9S3I01 - pose questions to explore observed patterns and relationships and make predictions based on observations</p> <p>AC9S4I03 - follow procedures to make and record observations, including making formal measurements using familiar scaled instruments and using digital tools as appropriate</p> <p>AC9S4I05 - compare findings with those of others, consider if investigations were fair, identify questions for further investigation and draw conclusions</p>	<ul style="list-style-type: none"> <li><a href="#">Climate vs weather video</a></li> <li><a href="#">Australian Antarctic Program Antarctic climate overview</a></li> <li><a href="#">Bureau of Meteorology Aerological Diagrams</a></li> <li><a href="#">Understanding Aerological Diagrams / Soundings</a></li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Australian Antarctic Program research station live webcams</a></li> <li><a href="#">Weather balloon video</a></li> <li><a href="#">Radiosonde live tracker</a></li> <li><a href="#">Ocean currents video</a></li> <li><a href="#">Polar vortex video</a></li> <li><a href="#">Australia's deep drill cuts its first Antarctic ice core – Australian Antarctic Program (News 2026)</a></li> </ul> <p><b>Activity suggestion</b></p> <p>Make a diorama or a model of one of the factors the influences climate. Write a paragraph explaining how your modelled factor shapes the climate of a location.</p>

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5 – 6	<p>In this session, students will explore the questions:</p> <ul style="list-style-type: none"> <li>• What's Antarctica's climate like?</li> <li>• Why does Antarctica's climate look like this?</li> <li>• What was Antarctica's climate like in the past?</li> </ul> <p>We'll match weather descriptors with pictures of different climates, talk about specific weather conditions in Antarctica, and dress up in Antarctic gear. We will also explore what factors influence a place's climate, including the effects of the sun, air currents, and ocean currents, and look at evidence that Antarctica's climate used to be much more like Tasmania's. We will finish each presentation with a surprise (snow simulation).</p>	<ul style="list-style-type: none"> <li>• Identify key factors that shape a place's climate</li> <li>• List the differences between Antarctic summer and winter</li> <li>• Describe methods used to study climate and weather in Antarctica</li> <li>• Connect features of Antarctic animals and plants to the climate</li> </ul>	<p><b>Science Understanding</b></p> <p>AC9S6U01 - investigate the physical conditions of a habitat and analyse how the growth and survival of living things is affected by changing physical conditions</p> <p>AC9S6U02 - describe the movement of Earth and other planets relative to the sun and model how Earth's tilt, rotation on its axis and revolution around the sun relate to cyclic observable phenomena, including variable day and night length</p> <p>AC9S6U04 - compare reversible changes, including dissolving and changes of state, and irreversible changes, including cooking and rusting that produce new substances</p> <p><b>Science as a Human Endeavour</b></p> <p>AC9S5H01 - examine why advances in science are often the result of collaboration or build on the work of others</p> <p>AC9S5H02 - investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions</p> <p><b>Science Inquiry</b></p> <p>AC9S6I01 - pose investigable questions to identify patterns and test relationships and make reasoned predictions</p> <p>AC9S6I05 - compare methods and findings with those of others, recognise possible sources of error, pose questions for further investigation and select evidence to draw reasoned conclusions</p>	<ul style="list-style-type: none"> <li>🔗 Climate vs weather video</li> <li>🔗 Australian Antarctic Program Antarctic climate overview</li> <li>🔗 Australian Academy of Science lesson on day length</li> <li>🔗 Bureau of Meterology Aerological Diagrams</li> <li>🔗 Understanding Aerological Diagrams / Soundings</li> </ul>	<ul style="list-style-type: none"> <li>🔗 Australian Antarctic Program research station live webcams</li> <li>🔗 Weather balloon video</li> <li>🔗 Radiosonde live tracker</li> <li>🔗 Fossil - Glossopterid - in Sydney, Australia</li> <li>🔗 Ocean currents video</li> <li>🔗 Polar vortex video</li> <li>🔗 Understanding Aerological Diagrams / Soundings</li> <li>🔗 Australia's deep drill cuts its first Antarctic ice core – Australian Antarctic Program (News 2026)</li> </ul> <p><b>Activity suggestion</b></p> <p>Imagine you live in Antarctica during the time of the dinosaurs. You accidentally find a way to time travel to 2026, and you land in Antarctica. You find a research station and travel back to Australia.</p> <p>Write diary entries about your experience, including:</p> <ul style="list-style-type: none"> <li>• The observable differences between modern day and historical Antarctica</li> <li>• What people are doing to stop Antarctica from going back to what it used to be</li> <li>• Your ingenious idea as to how you are going to help them</li> </ul>

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7 – 8	<p>In this session, students will explore the questions:</p> <ul style="list-style-type: none"> <li>• What's Antarctica's climate like?</li> <li>• Why does Antarctica's climate look like this?</li> <li>• What was Antarctica's climate like in the past?</li> <li>• How is climate change affecting Antarctica?</li> </ul> <p>We'll match weather descriptors with pictures of different climates, talk about specific weather conditions in Antarctica, and dress up in Antarctic gear. We will also explore what factors influence a place's climate, including the effects of the sun, air currents, and ocean currents, and look at evidence that Antarctica's climate used to be much more like Tasmania's and is still changing today due to human impact. We will finish each presentation with a surprise (snow simulation).</p>	<ul style="list-style-type: none"> <li>• Explain key factors that shape a place's climate</li> <li>• Analyse the differences between Antarctic summer and winter</li> <li>• Discuss differences between historical and current Antarctic climate data</li> <li>• Describe current changes in Antarctic climate and human response to these changes</li> <li>• Identify greenhouse gases and explain their role in climate change</li> <li>• Recognise the importance of Antarctica in the global climate</li> </ul>	<p><b>Science Understanding</b></p> <p>AC9S7U03 - model cyclic changes in the relative positions of the Earth, sun and moon and explain how these cycles cause eclipses and influence predictable phenomena on Earth, including seasons and tides</p> <p>AC9S8U07 - compare physical and chemical changes and identify indicators of energy change in chemical reactions</p> <p><b>Science as a Human Endeavour</b></p> <p>AC9S7H01 - explain how new evidence or different perspectives can lead to changes in scientific knowledge</p> <p>AC9S8H02 - investigate how cultural perspectives and world views influence the development of scientific knowledge</p> <p>AC9S8H03 - examine how proposed scientific responses to contemporary issues may impact on society and explore ethical, environmental, social and economic considerations</p> <p>AC9S8H04 - explore the role of science communication in informing individual viewpoints and community policies and regulations</p> <p><b>Science Inquiry</b></p> <p>AC9S8I01 - develop investigable questions, reasoned predictions and hypotheses to explore scientific models, identify patterns and test relationships</p> <p>AC9S8I05 - analyse data and information to describe patterns, trends and relationships and identify anomalies</p>	<ul style="list-style-type: none"> <li><a href="#">Climate vs weather video</a></li> <li><a href="#">Australian Antarctic Program Antarctic climate overview</a></li> <li><a href="#">Australian Academy of Science lesson on day length</a></li> <li><a href="#">Australian Antarctic Program Antarctic climate research video</a></li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Australian Antarctic Program research station live webcams</a></li> <li><a href="#">Weather balloon video</a></li> <li><a href="#">Radiosonde live tracker</a></li> <li><a href="#">Bureau of Meteorology Aerological Diagrams</a></li> <li><a href="#">Understanding Aerological Diagrams / Soundings</a></li> <li><a href="#">Fossil - Glossopterid - in Sydney, Australia</a></li> <li><a href="#">Australia's deep drill cuts its first Antarctic ice core – Australian Antarctic Program (News 2026)</a></li> </ul> <p><b>Activity suggestion</b></p> <ul style="list-style-type: none"> <li>• Write a 300-500-word summary of the session, highlighting new concepts.</li> <li>• In groups, choose one concept to research and make a 5-minute class presentation about your chosen topic.</li> </ul>

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9 – 10	<p>In this session, students will explore the questions:</p> <ul style="list-style-type: none"> <li>• How is Antarctic climate measured?</li> <li>• What was Antarctica's climate like in the past?</li> <li>• How is climate change affecting Antarctica?</li> <li>• What's our role in all this?</li> </ul> <p>We will summarise existing knowledge/introduce the concept of different biomes and explore different objects and methods that have been and are used to measure climate data. We will also analyse evidence that Antarctica's climate used to be much more like Tasmania's. This will launch into a conversation about climate change and how Antarctica is still changing today due to human impact, focussing on Antarctica's role in the global climate change conversation and how we can respond. We will finish each presentation with a surprise (snow simulation).</p>	<ul style="list-style-type: none"> <li>• Explain methods used to study climate and weather in Antarctica</li> <li>• Discuss differences between historical and current Antarctic climate data</li> <li>• Describe current changes in Antarctic climate and human response to these changes</li> <li>• Identify greenhouse gases and explain their role in climate change</li> <li>• Explain the importance of Antarctica in the global climate</li> </ul>	<p><b>Science Understanding</b></p> <p>AC9S9U03 - represent the carbon cycle and examine how key processes including combustion, photosynthesis and respiration rely on interactions between Earth's spheres (the geosphere, biosphere, hydrosphere and atmosphere)</p> <p>AC9S10U04 - use models of energy flow between the geosphere, biosphere, hydrosphere and atmosphere to explain patterns of global climate change</p> <p><b>Science as a Human Endeavour</b></p> <p>AC9S10H01 - explain how scientific knowledge is validated and refined, including the role of publication and peer review</p> <p>AC9S10H02 - investigate how advances in technologies enable advances in science, and how science has contributed to developments in technologies and engineering</p> <p>AC9S10H03 - analyse the key factors that contribute to science knowledge and practices being adopted more broadly by society</p> <p>AC9S10H04 - examine how the values and needs of society influence the focus of scientific research</p> <p><b>Science Inquiry</b></p> <p>AC9S10I05 - analyse and connect a variety of data and information to identify and explain patterns, trends, relationships and anomalies</p>	<ul style="list-style-type: none"> <li>🔗 Climate vs weather video</li> <li>🔗 Australian Antarctic Program Antarctic climate overview</li> <li>Australian Academy of Science carbon cycle lesson</li> <li>🔗 Australian Antarctic Program Antarctic climate research video</li> <li>🔗 Australian Academy of Science climate change lesson</li> <li>🔗 Understanding Aerological Diagrams / Soundings</li> </ul>	<ul style="list-style-type: none"> <li>🔗 AAE Original Meteorological Publication</li> <li>🔗 Australian Antarctic Program research station live webcams</li> <li>🔗 Weather balloon video</li> <li>🔗 Radiosonde live tracker</li> <li>🔗 Year 9 ice core lesson</li> <li>🔗 Bureau of Meteorology Aerological Diagrams</li> <li>🔗 Understanding Aerological Diagrams / Soundings</li> <li>🔗 Climate Change in Australia – for discussion</li> </ul> <p><b>Activity suggestion</b></p> <p>Read [a section of] the following article</p> <p>🔗 <a href="#">Southern Ocean</a></p> <p>and:</p> <ul style="list-style-type: none"> <li>• Make a glossary of the terms you don't recognise/understand.</li> <li>• Write a summary aimed at primary school students about one of the subheadings, suggesting how climate change may impact this feature of the Southern Ocean.</li> </ul>