

# Earth Science - Science Grade 7

<i>What I want students to know, do and understand?</i>		
Concept(s)	Change, cause/effect, impact, responsibility	
Big Idea	Curricular Competencies	Content
Earth and its climate have changed over geological time.	<p><b>QUESTIONING AND PREDICTING</b></p> <ul style="list-style-type: none"> <li>• Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest</li> <li>• Make observations aimed at identifying their own questions about the natural world</li> <li>• Identify a question to answer or a problem to solve through scientific inquiry</li> <li>• Formulate alternative “If...then...” hypotheses based on their questions</li> <li>• Make predictions about the findings of their inquiry</li> </ul> <p><b>PROCESSING AND ANALYZING DATA AND INFORMATION</b></p> <ul style="list-style-type: none"> <li>• Experience and interpret the local environment</li> <li>• Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information</li> <li>• Construct and use a range of methods to represent patterns or relationships in data, including tables, graphs, keys, models, and digital technologies as appropriate</li> <li>• Seek patterns and connections in data from their own investigations and secondary sources</li> <li>• Use scientific understandings to identify relationships and draw conclusions</li> </ul> <p><b>EVALUATING</b></p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding and appreciation of evidence (qualitative and quantitative)</li> <li>• Exercise a healthy, informed skepticism and use scientific knowledge and findings from their own investigations to evaluate claims in secondary sources</li> <li>• Consider social, ethical, and environmental implications of the findings from their own and others’ investigations</li> </ul> <p><b>APPLYING AND INNOVATING</b></p> <ul style="list-style-type: none"> <li>• Contribute to care for self, others, community, and world through personal or collaborative approaches</li> </ul>	<p><b>changes in biodiversity over geological time</b></p> <ul style="list-style-type: none"> <li>• The geologic time scale categorizes the time periods of Earth’s geologic history</li> <li>• Ages of rocks and fossils can be determined by both relative and absolute methods</li> </ul> <p><b>First Peoples knowledge of changes in biodiversity over time</b></p> <p><b>evidence of climate change over geological time and the recent impacts of humans:</b></p> <ul style="list-style-type: none"> <li>• change in climate affects:</li> <li>• the interconnectedness of plants and animals, and their local environment</li> <li>• e.g., changes to harvesting dates, changes to schedules due to early/late ripening and runs, lowered water levels in creeks, rivers and lakes, change in humidity impacts the ability to preserve salmon, etc.</li> <li>• humans are capable of changing Earth’s landscape, climate, and systems</li> <li>• efficacy of sustainable practices</li> </ul> <p><b>physical records</b></p> <ul style="list-style-type: none"> <li>• ice flow data, fossil record, etc.</li> </ul> <p><b>local First Peoples knowledge of climate change</b></p> <ul style="list-style-type: none"> <li>• oral history, change in traditional practice (e.g., the timing of harvest has been impacted by climate change), etc.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Co-operatively design projects</li> <li>• Transfer and apply learning to new situations</li> <li>• Generate and introduce new or refined ideas when problem solving</li> </ul> <p><b>COMMUNICATING</b></p> <ul style="list-style-type: none"> <li>• Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate</li> <li>• Express and reflect on a variety of experiences and perspectives of place as sources of information</li> </ul> <p>Identify possible sources of error and suggest improvements to their investigation methods</p> <p><b>APPLYING AND INNOVATING</b></p> <ul style="list-style-type: none"> <li>• Contribute to care for self, others, community, and world through personal or collaborative approaches</li> <li>• Co-operatively design projects</li> <li>• Transfer and apply learning to new situations</li> <li>• Generate and introduce new or refined ideas when problem solving</li> </ul> <p><b>COMMUNICATING</b></p> <ul style="list-style-type: none"> <li>• Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate</li> <li>• Express and reflect on a variety of experiences and perspectives of place as sources of information</li> </ul>	
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## *How will I know my students have it?*

### Summative Assessment

<p><b>GRASPS TASK</b> <b>Creating an Action Plan</b></p>	<p><b>Extra Performance Task</b> <b>Climate Change and First Peoples</b></p>
<p><b>Goal:</b> The students will demonstrate their understanding of climate change and how change occurs in response to challenges, opportunities, and environments.</p> <p><b>Role:</b> You are an environmental scientist with a specialization in climate change.</p> <p><b>Audience:</b> School leaders</p>	<p>Students are to create a poster reflecting what they have learned about First Peoples' understandings of sustainability: How can we look at climate change as First Peoples do – with an understanding that everything in the universe is connected? Students are to create a poster or other visual representation that advocates a relationship to the Earth that is similar to that held by Indigenous peoples.</p>

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**Situation:** The environmental scientists have to convince the school administration that our school sites need to be more environmentally friendly.

**Product/Performance:** The environmental scientists will present their findings on the eight major issues listed below, and will present their action plan to help the school lessen its carbon footprint.

- Issues: droughts, floods, non-renewable/renewable energy, food waste, air quality, deforestation, waste-water

*Differentiation:* scaffold the assignment with templates that provide some research facts about the eight major issues, as well as sources to explore. Provide choice about the format of the product, and provide option to present to teacher only.