

# Evolution and Natural Selection - Science Grade 7

<i>What I want students to know, do and understand?</i>		
Concept(s)	Change, development, diversity, survival, cause/effect	
Big Idea	Curricular Competencies	Content
<p>Evolution by natural selection provides an explanation for the diversity and survival of living things</p>	<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> <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> </ul>	<p><b>organisms have evolved over time</b></p> <ul style="list-style-type: none"> <li>• change in traits of populations over time</li> </ul> <p><b>survival needs</b></p> <ul style="list-style-type: none"> <li>• all organisms need space, food, water, and access to resources in order to survive</li> </ul> <p><b>natural selection</b></p> <ul style="list-style-type: none"> <li>• the natural process by which certain traits that have a greater fitness for their environment lead to a reproductive advantage; this process happens within a population over time because of genetic variation</li> </ul>

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	<ul style="list-style-type: none"> <li>Express and reflect on a variety of experiences and perspectives of place as sources of information</li> </ul>	
<b><i>How will I know my students have it?</i></b>		
<b>Summative Assessment</b>		
<b><i>Unit Test</i></b>	<b><i>Performance Task</i></b>	
<p>Students are able to explain why living things change over time and how these changes affect biodiversity.</p>	<p><b>GRASPS TASK: Species Project</b></p> <p>You live in the year 2320. On New Year’s Eve, in 2020, a small meteor hit the Earth causing catastrophic changes in the climate and environment. Over the following 300 years, the ocean water level rose, causing it to take up 98% of the Earth’s surface. In addition, the average temperature rose 43 degrees and clouds are now non-existent. The primary producer in 2320 is seaweed and the top predators are 500-foot whales. Your task is to research a species common to BC. Using the environmental changes, create five adaptations that the species may develop between 2020 and 2320. How does each of these adaptations help your species to survive? Develop a project that depicts your species in both time periods. (i.e. drawing, sculpture, computer graphic, painting, etc.)</p> <p><i>Differentiation:</i> scaffold the assignment with templates that provide some research facts about the species, and sources to explore. Provide choice about the format of the product. Challenge students by adding a written component outlining additional details such as specie’s scientific name, habitat, food, predators, species interactions, etc.</p>	