BC curricular goals and the PME’s programs for schools or other groups

For each of PME’s guided programs, these tables summarize the British Columbia School Curriculum’s grade-specific Big Ideas & Content Connections. These are only guidelines. Please contact the PME to clarify whether a program is appropriate for your needs or to book a tour. **Email:** pmebookings@eoas.ubc.ca. **Web:** [https://pme.ubc.ca/learn/group-booking-information/](https://pme.ubc.ca/learn/group-booking-information/).

We encourage teachers, youth leaders (scouts, guides, etc.), parents, camp counselors, tour operators and others to contact the PME to discuss suitability for your group.

Grades K-4:

<table>
<thead>
<tr>
<th>Programs</th>
<th>Kindergarten science</th>
<th>Science 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Mineral Mystery</em></td>
<td>Humans interact with matter every day through familiar materials</td>
<td>Matter is useful because of its properties, observable patterns and cycles occur in the local sky and landscape • Specific properties of materials allow us to use them in different ways</td>
</tr>
<tr>
<td><em>Rock Recognition</em></td>
<td></td>
<td>Materials can be changed through physical and chemical processes • Physical ways of changing materials, chemical ways of changing materials</td>
</tr>
<tr>
<td><em>Fossil Finds</em></td>
<td></td>
<td>Wind, water, and ice change the shape of the land • Observable changes in the local environment caused by erosion and deposition by wind, water, and ice</td>
</tr>
<tr>
<td><em>Volcano Voyage</em></td>
<td></td>
<td>Matter has mass, takes up space, and can change phase • Phases of matter</td>
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<tr>
<td><em>Planetary Picks - Mars</em></td>
<td></td>
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<tr>
<td><em>Tectonics Trek</em></td>
<td>The motion of objects depends on their properties • Effects of pushes/pulls on movement • Local First Peoples knowledge of the local landscape, plants and animals</td>
<td>Matter is useful because of its properties, observable patterns and cycles occur in the local sky and landscape • Local patterns that occur on Earth and in the sky</td>
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<tr>
<td>Programs</td>
<td>Science 5</td>
<td>Science 6</td>
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<tr>
<td>Mineral Mystery</td>
<td>Earth materials change as they move through the rock cycle and can be used as natural resources • The rock cycle, local types of earth material</td>
<td>Everyday materials are often mixtures • Mixtures</td>
</tr>
<tr>
<td>Rock Recognition</td>
<td>Earth materials change as they move through the rock cycle and can be used as natural resources • The rock cycle, local types of earth materials</td>
<td>Everyday materials are often mixtures • Heterogeneous mixtures</td>
</tr>
<tr>
<td>Fossil Finds</td>
<td>Earth materials change as they move through the rock cycle and can be used as natural resources • The rock cycle, local types of earth material</td>
<td>Evolution by natural selection provides an explanation for the diversity and survival of living things, Earth and its climate have changed over geological time • Organisms have evolved over time, the fossil record provides evidence for changes in biodiversity over geological time</td>
</tr>
<tr>
<td>Volcano Voyage</td>
<td></td>
<td>Earth and its climate have changed over geological time • Elements and compounds are pure substances, crystalline structure of solids, chemical changes</td>
</tr>
<tr>
<td>Planetary Picks - Mars</td>
<td></td>
<td>Earth and its climate have changed over geological time</td>
</tr>
<tr>
<td>Tectonics Trek</td>
<td>Earth materials change as they move through the rock cycle and can be used as natural resources • The rock cycle, local types of earth material • First Peoples concepts of interconnectedness in the environment</td>
<td>Earth and its climate have changed over geological time</td>
</tr>
</tbody>
</table>
### Programs

<table>
<thead>
<tr>
<th>Programs</th>
<th>Science 9 &amp; 10</th>
<th>Earth Science 11</th>
<th>Earth Science 12</th>
</tr>
</thead>
</table>
| **Mineral Mystery** | The electron arrangement of atoms impacts their chemical nature  
• The arrangement of electrons determines the compounds formed by elements | Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications  
• Earth materials can be identified and classified based on their properties | Minerals and rocks are the foundation of the rock cycle and can be used as resources that drive industry and global economies  
• Minerals can be classified and grouped based on their properties and composition |
| **Rock Recognition** | Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications, plate tectonic theory explains the consequences of tectonic plate interactions  
• Earth materials can be identified and classified based on their properties, the rock cycle explains how rocks are formed, destroyed, and transformed  
• Convection of heat within Earth’s interior drives plate motion and creates unique features at different plate boundaries | Minerals and rocks are the foundation of the rock cycle and can be used as resources that drive industry and global economies.  
• Rocks can be compared and classified based on their properties and processes of formation, the origins of magma and volcanism are related to plate tectonic theory |
| **Fossil Finds** | Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications, plate tectonic theory explains the consequences of tectonic plate interactions.  
• Earth materials can be identified and classified based on their properties, the rock cycle explains how rocks are formed, destroyed, and transformed | Geologic time is preserved in Earth’s rock record as fossils and reflects profound changes in the history of life on Earth  
• The geologic time scale sequences the major events in Earth’s history, the fossil record, dating methods of rocks and events, Earth’s past can be reconstructed by correlating fossils and rock strata |
| **Volcano Voyage** | Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications, plate tectonic theory explains the consequences of tectonic plate interactions.  
• Earth materials can be identified and classified based on their properties, the rock cycle explains how rocks are formed, destroyed, and transformed | Tectonic plates are in constant motion and their interactions produce earthquakes, volcanoes, and characteristic landforms on the Earth’s surface  
• The origins of magma and volcanism are related to plate tectonic theory |
| **Planetary Picks - Mars** | The formation of the universe can be explained by the big bang theory, and astronomical data and collection methods | Astronomy seeks to explain the origin and interactions of Earth and its solar system  
• Application of space technologies to study changes to Earth and its systems | Geological maps and models are tools used to represent surface features and subsurface structures; Weathering and erosion processes shape landscapes through the interaction of the geosphere and hydrosphere  
• Dating methods of rocks and events  
• Weathering and erosional processes modify the Earth’s surface and produce characteristic features  
• Running water (streams and rivers) produces characteristic erosional and depositional features and landforms |
| **Tectonics Trek** | Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications, plate tectonic theory explains the consequences of tectonic plate interactions  
• Evidence that supports plate tectonic theory  
• Factors that affect plate motion  
• First Peoples knowledge of local plate tectonic settings and geologic terrains  
• Properties of the ocean and the ocean floor | Earth’s geological and biological history is interpreted and inferred from information stored in rock strata and fossil evidence, the plate tectonic theory explains the changes that occur within Earth and to Earth’s crust throughout geological time  
• The geologic time scale and major events in Earth’s history  
• The formation of volcanic and deformational features through plate movement  
• Evidence that supports a layered model of Earth  
• Earthquakes and analysis of seismic waves  
• First Peoples knowledge of geologic events  
• Internal and external factors that affect the plasticity of rock strata  
• Faulting and folding  
• Geologic maps, cross-sections, and block diagrams |
FOR ALL AGES

**Observing Earth Materials** [https://pme.ubc.ca/learn/for-schools/secondary-school/observing-earth-materials/](https://pme.ubc.ca/learn/for-schools/secondary-school/observing-earth-materials/)
A 1hr guided journey through our gallery, encountering Earth’s materials, minerals, fossils, and the powerful forces that shape our planet and our lives, including volcanoes, earthquakes, tsunami, and landslides.

**OmniGlobe Experience** [https://pme.ubc.ca/learn/for-schools/secondary-school/omniglobe-experience/](https://pme.ubc.ca/learn/for-schools/secondary-school/omniglobe-experience/)
A 30min. introduction to our OmniGlobe Projector’s most interesting images and animations ([https://pme.ubc.ca/exhibitions/omniglobe/](https://pme.ubc.ca/exhibitions/omniglobe/)). You’ll experience a tour through the timescales of Earth and planetary processes, from earthquakes and volcanic eruptions that take seconds or minutes to plate tectonic cycles taking hundreds of millions of years. Then your group will have full access to the Globe so that everyone has a chance to operate the control kiosk.

**Earth Experience** [https://pme.ubc.ca/learn/for-schools/secondary-school/earth-experience/](https://pme.ubc.ca/learn/for-schools/secondary-school/earth-experience/)
4+ hours | All ages. Planet Earth is an amazing place, filled with volcanoes, glaciers, minerals, and oceans, along with millions of species of organisms. The Pacific Museum of Earth (PME) and the Beaty Biodiversity Museum (BBM) have joined forces to offer tours and programs to complement your science curriculum. Located less than a 5-minute walk apart, the BBM and PME are perfect field trip locations to combine for a full-day visit to UBC. By taking part in Earth Experience, students will explore the amazing natural forces that shape Earth and discover how these processes have influenced the variety of insects, plants, and animals around us. Please see the link above for more details and directions for booking.

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