

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/>.

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:

Programs	Kindergarten science	Science 1	Science 2	Science 3	Science 4
Mineral Mystery	Humans interact with matter every day through familiar materials Properties of familiar materials	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	Materials can be changed through physical and chemical processes • Physical ways of changing materials, chemical ways of changing materials		Matter has mass, takes up space, and can change phase • Phases of matter
Rock Recognition			Materials can be changed through physical and chemical processes • Physical ways of changing materials, chemical ways of changing materials	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	Matter has mass, takes up space, and can change phase. • Phases of matter
Fossil Finds			Materials can be changed through physical and chemical processes • Physical ways of changing materials, chemical ways of changing materials		
Volcano Voyage					
Planetary Picks - Mars					
Tectonics Trek	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	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	Materials can be changed through physical and chemical processes, Forces influence the motion of an object. • Physical ways of changing materials	Major local landforms • Local First Peoples knowledge of local landforms	

Grades 5-8:

Programs	Science 5	Science 6	Science 7	Science 8
Mineral Mystery	Earth materials change as they move through the rock cycle and can be used as natural resources <ul style="list-style-type: none"> • The rock cycle, local types of earth material 	Everyday materials are often mixtures <ul style="list-style-type: none"> • Mixtures 	Elements consist of one type of atom, and compounds consist of atoms of different elements chemically combined <ul style="list-style-type: none"> • Elements and compounds are pure substances, crystalline structure of solids, chemical changes 	
Rock Recognition	Earth materials change as they move through the rock cycle and can be used as natural resources <ul style="list-style-type: none"> • The rock cycle, local types of earth materials 	Everyday materials are often mixtures <ul style="list-style-type: none"> • Heterogeneous mixtures 	Earth and its climate have changed over geological time <ul style="list-style-type: none"> • Crystalline structure of solid 	The theory of plate tectonics is the unifying theory that explains Earth's geological processes <ul style="list-style-type: none"> • Plate tectonic movement, layers of Earth
Fossil Finds	Earth materials change as they move through the rock cycle and can be used as natural resources <ul style="list-style-type: none"> • The rock cycle, local types of earth material 		Evolution by natural selection provides an explanation for the diversity and survival of living things, Earth and its climate have changed over geological time <ul style="list-style-type: none"> • Organisms have evolved over time, the fossil record provides evidence for changes in biodiversity over geological time 	
Volcano Voyage			Earth and its climate have changed over geological time <ul style="list-style-type: none"> • Elements and compounds are pure substances, crystalline structure of solids, chemical changes 	The theory of plate tectonics is the unifying theory that explains Earth's geological processes <ul style="list-style-type: none"> • Layers of Earth
Planetary Picks - Mars			Earth and its climate have changed over geological time	
Tectonics Trek	Earth materials change as they move through the rock cycle and can be used as natural resources <ul style="list-style-type: none"> • The rock cycle, local types of earth material • First Peoples concepts of interconnectedness in the environment 		Earth and its climate have changed over geological time	The theory of plate tectonics is the unifying theory that explains Earth's geological processes <ul style="list-style-type: none"> • Plate tectonic movement • Major geological events of local significance • First Peoples knowledge of: local geological formations & significant local geological events • Layers of Earth

Grades 9-12:

Programs	Science 9 & 10	Earth Science 11	Earth Science 12
Mineral Mystery	The electron arrangement of atoms impacts their chemical nature <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Earth materials can be identified and classified based on their properties 	Geologic time is preserved in Earth's rock record as fossils and reflects profound changes in the history of life on Earth <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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/>

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, tsunamis, and landslides.

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/>). 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/>

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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