

Activities and Curriculum-based Outcomes for School Group Visits

Activity: Gallery Tour

The following are curriculum-based learning outcomes which may be applied to a gallery tour:

- Primary: ask questions that lead to exploration and investigation; observe using one or a combination of the senses; develop vocabulary and use language to bring meaning to what is seen, felt, smelled, heard, tasted, and thought; identify common objects and events using terminology and language that others understand.
- Grade 1: recognize that humans and other living things depend on their environment and identify personal actions that can contribute to a healthy environment.
- Grade 2: select and use materials to observe an organism's life cycle and ask questions about the organism's needs and changes in growth; describe and record observations, in various formats, of changes in the appearance and activity of an organism through its life cycle; compare and make predictions about the life cycles of familiar animals.
- Grade 3: identify, investigate, and suggest explanations for life needs of plants and describe how plants are affected by conditions in which they grow.
- Grades 4 and 5: compare the external features, behavioural patterns, structural, and/or behavioural adaptations for an animal to survive a particular habitat, real or imagined; demonstrate respect for the local environment; investigate rocks and minerals and record questions and observations; describe natural phenomenon that cause rapid and significant changes to the landscape; identify and describe rocks that contain records of Earth's history; appreciate the role and contribution of science and technology in their understanding of the world.
- Grade 6: classify animals as vertebrates or invertebrates and compare the characteristics of mammals, birds, reptiles, amphibians and fishes; classify common arthropods using a variety of sources; propose questions and gather information about the relationship among the structural features of plants and animals in their environments and identify the positive and negative impacts of humans on these resources; classify and compare the adaptations of closely related animals living in their local habitat and in different parts of the world and discuss reasons for any differences; identify changes in animals over time and research and model the work of scientists.
- Grade 7: provide examples of Canadians and Canadian institutions that have contributed to our understanding of local, regional, and global geology; develop a chronological model or geological time scale of major events in Earth's history.
- Grade 8: provide examples of technologies that have enabled scientific research; provide examples of public and private Canadian institutions that support scientific and technological research and endeavours.
- Grade 9: compare examples of past and current technologies that used current electricity to meet similar needs; give and explain examples illustrating how limited resources have forced scientists and technologists to develop more efficient ways to extract elements and compounds from nature, or to find or develop appropriate substitutes; give examples of the development of alternative sources of energy (such as wind generators and solar energy) that are a result of cost and the availability and properties of materials.
- Grade 10: classify organisms as producer, consumer, autotroph, heterotroph, decomposer, herbivore, carnivore, omnivore, and saprobe; explain how biodiversity of an ecosystem contributes to its sustainability; plan changes to, predict the effects of, and analyse the impact of external factors on an ecosystem; explain why the ecosystem may respond differently to short-term stress and long-term change.

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- Grade 11 Biology: analyse the patterns and products of evolution; explain the roles of evidence, theories, and paradigms in the development of scientific knowledge; explain how scientific knowledge evolves as new evidence comes to light and laws and theories are tested and subsequently restricted, revised, or replaced; analyse society's influence on scientific and technological endeavours; select and use microscopes effectively, safely and accurately for collecting data.
- Grade 12 Biology: analyse examples of Canadian contributions to science and technology; analyse and describe examples where scientific understanding was enhanced or revised as a result of the invention of a technology; analyse natural and technological systems to interpret and explain their structure and dynamics; describe historical and evolutionary contexts that have changed evolutionary concepts; evaluate current evidence that supports the theory of evolution and that feeds the debate on gradualism and punctuated equilibrium; explain how knowledge of evolution evolves as new evidence comes to light and as laws and theories are tested and subsequently restricted, revised, or replaced; analyse evolutionary mechanisms such as natural selection, genetic variation, genetic drift, artificial selection, and biotechnology, and their effects on biodiversity and extinction; outline evidence and arguments pertaining to the origin, development, and diversity of living organisms on Earth.
- Grade 12 Geology: explain how a major scientific milestone revolutionized thinking in the scientific communities; describe historical and cultural contexts that have changed evolutionary concepts; give examples of how geology is interconnected and integrated with other sciences; illustrate how science attempts to explain natural phenomena; explain how a knowledge of geology might influence our decisions about how we use Earth's resources; describe examples of Canadian contributions to science and technology; explain how data support or refute the hypothesis of plate tectonics; apply and assess alternative theoretical models for interpreting knowledge in a given field; explain the plate tectonic theory; describe the geological activity associated with plate boundaries and relates this to the rock cycle; explain and describe the process of fossil formation; define and differentiate between relative and absolute age dating; illustrate the geologic time scale and compare it to human time scales; explain how scientific knowledge evolves as new evidence comes to light.

The information above was taken from the Atlantic Canada Science Curriculum.