

Miller Museum of Geology, Queen's University

Educational and Public Programming

The Miller Museum offers hands-on curriculum-linked educational programs that are presented in the museum classroom. In a typical year 100 programs are presented to school classes, summer camps, and any other group interested in the science of geology.

Programs are approximately one hour long and can accommodate a maximum of 35 participants (students + teachers/helpers).

Fees for educational programs (2024-2025) are **\$70/group/program** (HST included) for all programs except Dinosaurs which is \$35/group/program (HST included).

*Discount rate of **\$60/program** for multiple programs booked by the same school on the same day, and **\$50/program** for the Miller Museum half of The Earth and the Stars with the Queen's Observatory.

*Financial accommodations available; contact the museum for more information.

Program List:

1/ **Mineral Identification** (grade 4 curriculum links)

A 45-minute hands-on activity about uses of rocks and minerals and how to identify them, followed by 15 minutes in the museum galleries. During this engaging instructor-led program, students share kits of real minerals (maximum 3 students/kit) to perform hardness tests, streak tests, and many other diagnostic investigations using the samples. Coupled with the opportunity to see beautiful specimens in the museum galleries afterwards, this program functions equally well as an introduction to the topic or a wrap-up review for classes at the end of their study unit on rocks and minerals.

2/ **Meteorites** (grade 6 curriculum links)

A 45-minute interactive program during which students touch different types of meteorites and find out what they tell us about the Earth, followed by 15 minutes in the museum galleries. Activities also include searching for micrometeorites (using microscopes and other equipment), and demonstrations about scale modeling of impact craters.

3/ **Dinosaurs** (beavers, brownies, daycare, k-gr 3) (\$35/group for this program)

An introduction to fossils and paleontology, with emphasis on dinosaurs. Program presentation length varies from 20 minutes for the youngest audiences to 35 minutes for older groups. Children get to see and touch a variety of bone and tooth casts, and real fossils including a real dinosaur bone fossil and a dinosaur footprint fossil. A volunteer from the group is dressed up as a paleontologist to show the tools and equipment used by paleontologists. The group spends an additional 20 minutes of self-guided time looking at the dinosaur exhibits, digging in the fossil dig box (sand box with fossil casts to uncover), and they can also look at the crystals and mineral displays and the AR sandbox in the rest of the museum. A typical group is at the museum between 45 minutes and 1 hour for this program.

4/ **Introduction to Geology** (all age/grade levels)

Learn about geology - the study of the Earth, during this engaging introduction to the various aspects of the science. An interactive overview of rocks, minerals, fossils and Earth processes illustrated

with many touch samples (including a meteorite, a dinosaur bone, examples of igneous, sedimentary and metamorphic rocks and mineral ores) that are circulated around the group. Program delivery takes approximately 40 minutes, followed by 15-20 minutes of exploration time in the museum galleries featuring a dinosaur exhibit, and recently updated displays of minerals and rocks.

5/ **The Earth Through Time** (gr 12 biology curriculum links)

While seated along an 8 metre-long geological time scale graphic, students hear a 50 minute lecture about the major changes in the Earth's geosphere, atmosphere, biosphere and hydrosphere since its formation. The talk is illustrated with rocks and fossils spanning the entire 4.6 billion years of Earth history including meteorites, the oldest known terrestrial rocks, the appearance of life, and its progression from exclusively single-celled organisms to the complex life of the present day.

6/ **Geology of the Kingston Area: 1.1 Billion Years of Earth History**

(powerpoint-based lecture)

Himalya-like mountains, tropical oceans, and a 2-kilometre-thick covering of glacial ice: these are some of the amazing events recorded in the rocks of the Kingston area over the past 1.1 billion years! The curator of the Miller Museum of Geology in the Department of Geological Sciences at Queen's University will give a talk on the rocks, minerals and fossils of the region and explain what they show us about its fascinating geological past.

7/ **The Earth and the Stars – Joint program with the Queen's Observatory** (\$50/group)

The Queen's Observatory and the Miller Museum of Geology have a joint educational program: ***The Earth & The Stars***. The programs are centered around the grades 4, 6 and 9 science curricula. Schools can bring one or two classes at a time, with each class spending an hour at each institution.

8/ **NEW! Learning with Palaeontology**

Spectacular fossil casts of animals that lived in Canada during the Pleistocene Epoch (2.5million-11700 years ago) are used to teach core concepts in science at the Junior (gr 4-7) and Senior (gr 7-12) level, including topics such as habitat, evolution and adaptation, biodiversity, food chains, climate change, and extinction.

Teachers: These physical kits are also available to borrow from the Queen's Education Library for use in your own classroom, and Digital kits are available for free online to use as a classroom resource! <https://www.queensu.ca/vpr/stemygk/museum-in-the-classroom-palaeontology>

9/ **Customized Programming**

Custom programs on various topics at all grade levels relating to Earth and Environmental Sciences i.e. **soils, fossils, evolution, climate change**, and **geo-crafts** are also possible, with consultation with the curator. Email: millermuseum@queensu.ca for more information.

For more information or to book, contact:

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Email: millermuseum@queensu.ca (preferred)

Website: queensu.ca/millermuseumofgeology