



Canadian Earth Science Teacher  
Workshop Program



**EdGEO** is a national volunteer-run program that provides funding support to teacher workshops on the Earth sciences. While the workshops vary widely across Canada, they share core features. Each one is:

- Designed to give Canadian educators the confidence and enthusiasm they need to deliver Earth science components of the curriculum to their students.
- Locally driven and adapted to the geology and specific curriculum needs of the location.
- Led by a team of geoscientists and teachers who are passionate about the Earth sciences.

The workshops are typically a mix of hands-on classroom and laboratory sessions complemented by field trips, giving the participants a wealth of ideas to take back to their schools. Most workshops also provide each participant with excellent take-away resources, ranging from lesson plans to rock and mineral specimens.

From the early 1970s when it was set up, EdGEO has connected with thousands of Canadian teachers through the workshops it has funded with grants of up to \$3,000. That, in turn, translates to connecting with the hundreds of thousands of Canadian students taught throughout the careers of the teacher participants. The bottom line is that these students leave secondary school with some knowledge of the impact of the Earth sciences, a better awareness of Planet Earth, and, in some cases, an interest in becoming part of the next generation of Earth scientists.

The past year (April 1, 2013 to March 31, 2014) has been one of outstanding success and growth for EdGEO, with 18 workshops attended by 411 teachers – this is double the number of workshops carried out in 2011–2012 (eight) and 2012–2013 (nine). The workshops are fuelled by the enthusiasm, hard work and dedication of the volunteers who step forward to organize, promote and lead them. We thank each of you for the effort and time you commit to spreading awareness about the Earth sciences to our teachers. EdGEO works because of you!

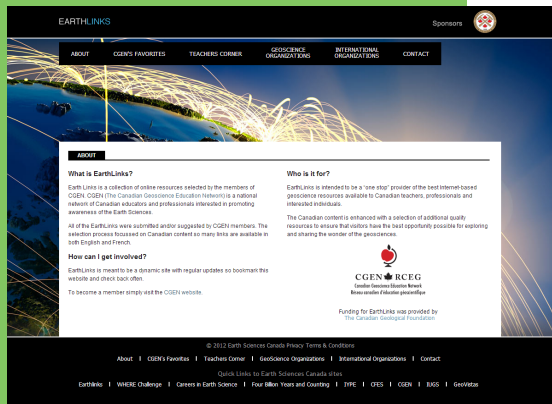


## NATIONAL WORKSHOP PROGRAM NEWS

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EdGEO is coordinated by the  
Canadian Geoscience Education Network of  
the Canadian Federation of Earth Sciences

# EarthLinks: Your One-Stop for Resources



“**Merci beaucoup! Vous êtes des "animateurs de passion." Les élèves et d'autres personnes vont en profiter.**  
—Journée de formation aux enseignants primaire, Québec, QC

## Free Subscription: Canadian Geoscience Education Network (CGEN)

CGEN is a national network of 500 people, located all over Canada, involved in Earth science education and outreach, with the membership equally split between K-12 teachers and Earth science professionals. Networking and exchanging information and ideas about Earth science education are the heart and soul of CGEN. Stay posted on new resources, opportunities, events and Earth science news by signing up for a free subscription to our new online information notices at [www.cgenarchive.org/cgen-newsletter.html](http://www.cgenarchive.org/cgen-newsletter.html).

*There's a new website in town, and it resembles a well-laid out shopping mall full of links to the best Earth science educational websites available to Canadian teachers. Click your way through EarthLinks and you will find connections to every topic in the Earth science spectrum and to all sorts of in-class ideas and lesson plans.*

EarthLinks was the dream of Godfrey Nowlan, a Calgary-based paleontologist, and when he mentioned it at the 2010 annual meeting of the Canadian Geoscience Education Network (CGEN), there was immediate interest from the teachers around the table. An enthusiastic discussion ensued, full of divergent opinions about what was needed and what the focus should be. What everyone agreed upon was that this idea filled a much-needed niche that was currently a void.

Miriam Vos-Guenter, a teacher at Belmont Secondary in Victoria, B.C., with a strong background in managing websites and using technology in education, generously volunteered to bring order to the ideas flashing around and pull together what was envisioned to be “one-stop shopping for the best Earth science links in Canada.”

A request for favourite links went out to the then 350 CGEN members, and there was a flood of suggestions — a clear indication that the idea hit a chord. Miriam found a keen ally in Jane Wynne, a geoscientist based in Sydney, B.C., and the two of them reviewed all the submissions, took the best of the best and the most cited, and sifted them into categories. Early during this process, Miriam says, “The name EarthLinks just popped into my head.” And it fit perfectly!

EarthLinks is a work in progress, and that's intentional. There are so many excellent resources coming online that Miriam says, “EarthLinks is going to be a dynamic, ever-changing resource.” For the immediate future, she is adding a new section on apps and is expanding the video section to capture the exciting new material being posted on YouTube.

The ultimate goal for EarthLinks is that it will become the go-to place for teachers looking for Earth science resources. So, everyone, your homework is to visit EarthLinks, spread the word about it and, most important, keep the suggestions of new resources flowing in to Miriam via the simple form on the “Contact” page.

## New Resources

**I am an Environmental Scientist** is a colouring and activity book developed by MineralsEd (formerly the Mineral Resources Education Program of B.C.) to support elementary students learning about mining and the Earth sciences. Downloadable at [www.mineralsed.ca/s/JuniorGeologist.asp](http://www.mineralsed.ca/s/JuniorGeologist.asp).



**Power to the People** is the latest addition to the colourful “Mining makes it Happen” posters series produced by Mining Matters. This poster highlights how metals and minerals are vital to the delivery of energy to us. Downloadable at [www.pdc.ca/mining-matters/resources/education/mining-matters-publications/mining-makes-it-happen-poster-series](http://www.pdc.ca/mining-matters/resources/education/mining-matters-publications/mining-makes-it-happen-poster-series).

**GeoVistas** for Jasper and Grasslands national parks are downloadable at [www.earthsciencescanada.com/geovista/](http://www.earthsciencescanada.com/geovista/). These brochures describe iconic views in Canadian parks in terms of their geological features and how they have influenced climate, ecology and culture. Print versions are available at the park visitor centres.

**Minerals of Canada**, an excellent poster produced by the Mineralogical Association of Canada has been reprinted recently. Ordering information and an interactive version of the poster are at [www.mineralogicalassociation.ca/poster/index.php](http://www.mineralogicalassociation.ca/poster/index.php).

**Science.gc.ca Activity Book** has been updated and includes over 30 new experiments and activities for different age groups and skill levels. Downloadable at [www.science.gc.ca/ab](http://www.science.gc.ca/ab).

All are available in French and English.

# Our Team

## The National EdGEO Committee Co-Chairs

EdGEO is run by co-chairs, who work on a staggered two-year schedule, an innovation introduced in April 2012 that has worked superbly. The co-chairs are volunteers who give freely of their time, handling all the administration of a granting organization and fundraising every cent that goes out to support the workshops.

Outgoing co-chair is **Laura Clinton**, an educator and fundraising consultant based in Whitby, Ontario. Laura has been a leader in education and outreach for many years, most notably with Mining Matters and the WHERE Challenge, a national student contest that challenges students to learn more about the impact that the Earth sciences have on daily life. We thank Laura for her innovation and vision.

**Beth McLarty Halfkenny** Outreach Coordinator for Carleton University's Department of Earth Sciences, continues as co-chair. Beth runs a successful three-day workshop for teachers each summer at Carleton, provides teachers with a range of educational materials, and came up with concept for and runs "Explore Geoheritage Day," held each October in the National Capital Region.

**Amanda McCallum** Outreach Geologist at the Geological Survey of Newfoundland and Labrador, Department of Natural Resources is incoming co-chair. Amanda leads education and outreach projects that take her to all parts of the province. Activities include Mining Week, community-based geotourism initiatives, and developing educational materials specific to the province's unique geology.

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“ We learned so much about how high-tech the mining industry is, the variety of job prospects for young people, the great importance of safety procedures and environmental impact and land use practices... Now it is our job as teachers to spread the word to our young students about the wide variety of career opportunities available to them in the Mining Field.  
—Teachers' Mining Tour, Mattawa, ON

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# EdGEO Workshops 2013-2014

**Calgary** *Calgary Science Network* Rocks and Minerals 2013 was the 20th presentation of this workshop for Grade 3 teachers. It is aligned with the Alberta Grade 3 curriculum unit Rocks and Minerals, with a primary focus on observation and classification skills, and offers participants a range of teaching strategies, resources and activities to take back to their classrooms. 🧑 50

*Alberta Science Network* This workshop focused on the elements of Earth science included in Unit E (Planet Earth) of the Grade 7 Alberta Curriculum. It covered the following key concepts: strata, rocks and minerals, the rock cycle, mountain formation, plate tectonics, chronological time scale, fossil formation, weathering and erosion, and incremental change. 🧑 15

**Halifax** *Atlantic Geoscience Society* What's Under Our Feet was held at the N.S. Association of Science Teachers annual conference. It included a half-day of hands-on activities that allowed participants to become familiar with the major rocks and minerals of the Halifax area; learn how to read and use a geological map; and see how these exercises could be applied to other areas of the province. This was followed by a field activity at York Redoubt National Park that gave participants the experience of mapping a defined field area and determining rock units and contacts. The Park's history and how geology influenced its construction were also covered. 🧑 20

**Mattawa** *Canadian Ecology Centre* Teachers Mining Tour is a five-day program providing a glimpse into the many aspects of modern mining. It links the Ontario curriculum to mining technology, the environment, careers and safety. The tour includes visits to open pit and underground mines, rehabilitation sites, and related industries. Two tours ran in 2013; the July Tour focused on Sudbury area and the August Tour visited Timmins. 🧑 50

**Mississauga** *Peel District School Board* This workshop covered the Grade 4 earth science strand – Rocks and Minerals, and provided teachers with insight into the local stone and gravel deposits including the extraction and restoration processes that form the landscape around us. The goal was to raise awareness about what we use rocks and minerals for and where they come from. 🧑 35



🧑 Denotes Attendance

**Ottawa** *Carleton University* Three-day workshop and field trip designed to increase teachers' understanding of current issues in Earth Sciences, promote Earth Science education, and give them the tools they need to teach the Ontario Science and Physical Geography Curriculum. It included hands-on activities, interactive seminars, and a field trip to classic geological sites that provide an excellent overview of the geological history of the National Capital Region. 🧑 10

*Canada Science and Technology Museum* Part of the three-day Summer Institute for Elementary Teachers, this workshop focused on mineral identification and gave teachers classroom resources as well as strategies for teaching geology to their students. 🧑 35

*Ottawa Carleton District School Board* A field trip was offered as part of a board-wide Geography and History Professional Day in the Ottawa-Carleton District School Board. It took the teachers to some of the geological wonders of the Ottawa area, including a spelunking trip to the Lafleche Caves in Québec and a stop to see the stromatolites at the Champlain Bridge in Ottawa. The goal was to encourage teachers to consider these nearby sites as possibilities for field trips with their geography students (Grade 9 geography and Grade 11 physical geography). 🧑 30



# Workshops cont...

**Quebec** *Québec Mines* Journée de formation aux enseignants secondaire was a one-day workshop for secondary school teachers with talks presented on the geological provinces, and on rocks and minerals. It included a field trip to Montmorency Falls where the geological history of southern Québec is well-illustrated at the junction of the three geological provinces and the major fault that are found there. 🧑‍🎓 22

*Québec Mines* Journée de formation aux enseignants primaire was also a one-day workshop focused on rocks and minerals and the geology of Québec for primary school teachers. An interactive presentation looked at nine minerals and their use in daily life. 🧑‍🎓 20

**Saint John** *New Brunswick Museum* The Stonehammer Geopark EdGEO Workshop provided educators with the knowledge and tools to introduce local geological components into their Earth science curriculum. Geological knowledge was supplemented by cultural and historical stories to provide a broader context. 🧑‍🎓 10

**Vancouver** *Northwest Aquatic and Marine Educators Conference* A 90-minute workshop that incorporated Earth science into biology through activities integrating the study of fossils, Earth history, and paleoenvironments with biology and ecology of modern nearshore life using a cold saltwater aquarium. 🧑‍🎓 19

*University of Victoria* What's in your Stuff: Non-Renewable Resources and Us was a workshop presented as part of the Mitchell Odyssey Foundation Teacher Symposium. It looked at the role of rocks and minerals in our lives, their sustainability, and where and what is mined in B.C. 🧑‍🎓 20

**Victoria** *University of Victoria, School of Earth and Ocean Science* EOS 120 for Pre-service Teachers: This workshop is designed for students registered with the university's Education Program. During the 11 three-hour labs and two field trips, subjects covered include plate tectonics, earthquakes, minerals, rocks, surface processes, stratigraphy and fossils. This course is run each winter term. 🧑‍🎓 44



**Whitehorse** *Yukon Geological Survey* The Yukon Teachers Workshop 2013 was a mix of hands-on activities and short talks by geologists from the Yukon Geological Survey on different aspects of Yukon geology, ranging from an overview of the geological history of the Yukon to the current status of mining and mineral exploration in the territory. Participants were also taken on a field trip of key teaching outcrops in the Whitehorse region. 🧑‍🎓 10

**Winnipeg** *University of Manitoba* One-day field trip designed to help Grades 4 to 7 teachers understand the rocks and geological history of southern Manitoba, and their relationship to Earth resources and natural hazards. It complemented a teachers' workshop that was part of the Outreach Program of the geoscience conference Winnipeg 2013. 🧑‍🎓 21

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**“ Fabulous breadth of information. My understanding of geological influences has been altered for the better. —Grade 3 Teachers' workshop, Calgary, AB**

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# Spotlight On Our Sponsors

## The Canadian Geological Foundation



EdGEO relies on funding support from like-minded organizations that share our vision of increasing the awareness and expertise of Canadian teachers about the Earth sciences.

EdGEO has benefited greatly from a generous three-year grant from our main sponsor, the Canadian Geological Foundation (CGF), awarded in 2011. The CGF was incorporated in 1968 as a charitable organization dedicated to furthering the awareness and impact of the Earth sciences in Canada. Since then, it has awarded over \$2,250,000 to about 475 projects. This funding has supported a diverse range of Earth science education, outreach and awareness building projects across the country.

CGF is really all about providing a bridge between the professional Earth scientist and the public. Jane Wynne, the CGF Secretary explains that EdGEO is a perfect fit with the CGF mandate, "That bridge is precisely what EdGEO builds, with the public represented by the educators who teach our children."

CGF is also concerned that the projects it funds have a broad impact and a legacy. With EdGEO, the teacher creates a powerful legacy with he or she passing on Earth science knowledge and understanding to all the students they teach during their careers. As Jane sums it up, "The legacy from each teacher who takes an EdGEO workshop echoes through the years."

—More CGF information is available at: [www.canadiangeologicalfoundation.org](http://www.canadiangeologicalfoundation.org)

### Past and Present Sponsors

Canadian Geological Foundation  
Canadian Society of Exploration Geophysicists Foundation  
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Canadian Geoscience Education Network  
Canadian Federation of Earth Sciences  
Ontario Secondary School Teachers' Federation  
Geological Association of Canada

*A big thanks for your generous support.*

## EdGeo Highlights

The EdGEO newsletter has had a three-year hiatus, but we've been very busy during that time. Of particular note, in 2010, we released a major compilation of classroom resources. Go to [www.edgeo.org/en\\_CA/](http://www.edgeo.org/en_CA/) and click on "Resources" to find two downloadable manuals full of lesson plans and classroom activities.

- **Bringing Earth Science to Life** pulls together all you need to know about putting on an EdGEO workshop and provides over 100 classroom-ready activities that have been field tested and fine-tuned in EdGEO workshops all over Canada.
- **Putting the Earth into Science** integrates Earth science topics into the core subjects of physics, chemistry, biology and mathematics. Through this interdisciplinary "wedging" approach, EdGEO hopes to expand Earth science content in Canadian high schools.

Another milestone, also in 2010, was the launch of the French EdGEO website. We thank Claire Penczak, Pierre Rhéaume, Pierre Verpaelst and Kevin Haidl for their hard work on this major translation project.



“Wow! Excellent PD day, learned a lot. Hands-on activities were fantastic.

—Stonehammer Geopark Teachers' Workshop, Saint John, NB



### Do the Math

Over the past decade about 2800 teachers have participated in EdGEO workshops. If each teacher has a class size of 25, in one year 70,000 students benefit from what those teachers brought back to the classroom from the workshop (increased confidence, hands-on activities and field trip ideas). Ten years out, these 2800 teachers will have reached 700,000 students!