

# CANADIAN GEOGRAPHIC IN THE CLASSROOM

Article 'Down to Earth - Dr. Roberta Bondar'  
Issue July/August 2017



## Lesson Overview:

This lesson uses several different media forms and can be modified for students from various age groups. Students will use the print magazine article, apps, and the internet to explore and learn more about the locations of Dr. Roberta Bondar's photos featured in the *Canadian Geographic* article "Down to Earth."

## Grade Levels:

3 +

## Objectives:

- Students will connect to the Canadian landscape by analysing Roberta Bondar's photographs.
- Students will build upon their digital mapping and technology skills by using the Google Earth app.
- Students will document and share information regarding the geographical feature/process that is highlighted in each photo.
- Students will further develop their geospatial skills by creating "Google My Maps" and mapping out the locations of the photos individually, in pairs or in groups.

## Materials:

- Article for each student, pair, or group, available in print or digitally:  
[canadiangeographic.ca/article/discover-canada-through-roberta-bondars-camera-lens](http://canadiangeographic.ca/article/discover-canada-through-roberta-bondars-camera-lens)
- Projector or Smartboard
- Blackline master (BML) "Dr. Roberta Bondar's Photographs"
- Teacher's Answer Key to "Dr. Roberta Bondar's Photographs"
- Access to the internet and Google Earth App on a computer or handheld device
- For more photos that were not included in the print article, please visit:  
[canadiangeographic.ca/article/discover-canada-through-roberta-bondars-camera-lens](http://canadiangeographic.ca/article/discover-canada-through-roberta-bondars-camera-lens)

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## Links to Canadian Standards for Geography:

### Geographic Skill 1: Asking Geographic Questions

- Identify geographic issues, define geographic problems, and pose geographic questions.
- Plan how to answer geographic questions.

### Geographic Skill 2: Acquiring Geographic Information

- Use a variety of research skills to locate and collect geographic data.
- Use maps to compile geographic information.

### Geographic Skill 3: Organizing Geographic Information

- Prepare various forms of diagrams to organize and display geographic information.
- Integrate various types of information to organize geographic information.

### Geographic Skill 4: Analyzing Geographic Information

- Interpret information obtained from maps, graphs, charts, tables, aerial photographs, documents, interviews, and pictures.

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## Activity:

### Before

- Students should be familiar with Dr. Roberta Bondar and the extent of her work. More information about Dr. Roberta Bondar can be found on her website: [robertabondar.com/](http://robertabondar.com/).
- This lesson works on the assumption that students are familiar with operating the Google Earth program ([earth.google.com](http://earth.google.com)). If students are not familiar with Google Earth, allow for 5-10 minutes at the beginning of class for students to explore.

### During

- Access the article online and project it on a Smartboard or projector.
- As a class, read through the article and make a list of the photo locations using the handout provided at the end of this activity.
- Assign a photo number to pairs of students or groups. Have them research the photos from the article using Google Earth and the internet. They are to note the location of the photo, the landform/geographical features or process depicted and at least two interesting details, including one from the article, to share with the class about the photo's subject matter.
- Have the groups share their answers with the class.

### After

- Connect what students have learned to career education and careers that involve geography. Challenge students to adopt the point of view of a former astronaut and to consider the career options available to an astronaut after they have returned to Earth. Why is it important to have many talents and diverse skills that you can explore and develop after finishing a contract or project?
- Have students use "Google My Maps" to map out the location of the photos. Invite students to make connections between the location of the photos and characteristics they observe.

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## Dr. Roberta Bondar's Photographs Blackline Master (BML)

Photo #	Photo Title	Location of Photo	Landform/Geographical Feature/Process	Interesting Details to Share with the Class
1 Example	Tablelands	Gros Morne National Park, Newfoundland and Labrador	Tablelands	The Tablelands rise above Trout River Pond in Newfoundland's Gros Morne National Park. Part of Earth's mantle, this barren outcrop was pushed up by a continental collision about 450 million years ago.

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## Teacher's Answer Key

Photo #	Photo Title	Location of Photo	Landform/Geographical Feature/Process	Interesting Details to Share with the Class (Answers will vary, as one should come from the photo caption and one from further research. The answers provided below are from the captions.)
1	Tablelands	Gros Morne National Park, Newfoundland and Labrador	Tablelands	The Tablelands rise above Trout River Pond in Newfoundland's Gros Morne National Park. Part of Earth's mantle, this barren outcrop was pushed up by a continental collision about 450 million years ago.
2	Prince Albert National Park	Saskatchewan	Shoreline/boreal forest	A wide prairie sky is reflected along with the golds and yellows of tamarack and trembling aspen in Prince Albert National Park, which preserves a section of the boreal forest in central Saskatchewan.
3	Lowell Glacier in Kluane National Park and Reserve	Saskatchewan	Glacier	The serrated seracs and plunging crevasses at the toe of the Lowell Glacier in Kluane National Park and Reserve, Yukon, give way to the dark lines of the Alsek River and Goatherd Mountain.
4	Prince Edward Island National Park	Prince Edward Island	Cliffs/erosion	Low tide in Prince Edward Island National Park, where wave action is slowly eroding the iconic iron-oxide-tinged cliffs and rocks into the Atlantic.
5	Nahanni National Park Reserve's Naha Dehé (South Nahanni River)	Northwest Territories	Canyon	In the Northwest Territories, the third canyon of Nahanni National Park Reserve's Naha Dehé (South Nahanni River) is home to "The Gate," where the river makes a hairpin turn through a narrow pass in the surrounding Funeral Range.

Below are photos from the additional online article, which were not included in the print article:  
[canadiangeographic.ca/article/discover-canada-through-roberta-bondars-camera-lens](http://canadiangeographic.ca/article/discover-canada-through-roberta-bondars-camera-lens)

6	Balu Pass	Glacier National Park, British Columbia	Avalanches	A day's hike to and from Balu Pass in Glacier National Park is rewarded with soft patterns of green trees and grey rocks. Frequent snow avalanches cut trees in their path from the peaks to the valley floor. Fresh grizzly bear tracks and ground scuffed by large paws and claws shortened the time spent exploring the pass.
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7	Wood Buffalo National Park of Canada, a UNESCO World Heritage Site	Northeastern Alberta and the southern Northwest Territories	Buffalo migration	Wood Buffalo National Park of Canada, a UNESCO World Heritage Site, is home to free-roaming wood bison that use the salt flats to access the sodium missing in their vegetarian diets and needed for mammalian cell functions. This aerial image was composed to show the scale of the bison, dwarfed by the elements of land, water and salt flats.
8	Kluane National Park and Reserve	Kluane National Park and Reserve, Yukon	Fall colours/seasonal changes in plants	Fall colours in Kluane National Park and Reserve are lit by bands of sunlight and then quickly darkened by clouds tossed in the winds of a gusting storm. This mountain, at the upper end of Cottonwood Creek, is part of the Dalton Range in the St. Elias Mountains.
9	Trans-Canada Highway on the northern shore of Lake Superior	Ontario	Frost	Fall frost tips young maple trees and wild strawberry plants along the edge of the Trans-Canada Highway on the northern shore of Lake Superior.
10	Dinosaur Provincial Park, a UNESCO World Heritage Site	Alberta	Water erosion	Water erosion in Dinosaur Provincial Park, a UNESCO World Heritage Site, carves rills within sandstone that can expose dinosaur remains. Iron seen in these caprocks makes a rock more resilient, eroding at a slower rate than the sandstone below.
11	Bruce Peninsula National Park of Canada and Fathom Five National Marine Park of Canada	Ontario	Lady Slipper flower	The most common of the local orchids, this beautiful yellow Lady's Slipper is one of several different species found in Bruce Peninsula National Park and Fathom Five National Marine Park. These flowers enjoy habitats with above average alkalinity, due to a high percentage of calcium in the soil.

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12	The Ward Hunt Ice Shelf	Ellesmere Island, Nunavut	Warming waters of the Arctic Ocean	The Ward Hunt Ice Shelf is shrinking by the warming waters of the Arctic Ocean. This freshwater ice shelf on the northern shore of Ellesmere Island holds rivers of turquoise from melted ice is teeming with microscopic biodiversity that dies when the meltwater drains into the saltier ocean water below.
13	Mount Logan	Yukon	Canada's highest mountain	Mount Logan is Canada's highest mountain at 5,959 metres and the world's greatest in girth.
14	Canadian Shield in Pukaskwa National Park of Canada	Ontario	Pink granite, Canadian Shield, one of oldest rock formations on our planet	The vast pink granite of the Canadian Shield in Pukaskwa National Park of Canada is one of the oldest rock formations on our planet. Powerful storms blow in with little warning across Lake Superior, pounding the shoreline and testing the resilience of trees that find nourishment in the rock crevices.
15	Quttinirpaaq National Park of Canada	Located on the northernmost tip of Ellesmere Island, in the Qikiqtaaluk region of Nunavut, the most northerly extent of Canada	True polar desert	Quttinirpaaq National Park contains the most northerly lands in Canada and constitutes a true polar desert with only about 60 mm of precipitation per year. From Tanquary Fiord, this magnificent view looks toward the Mountains of Grant Land with the As Astra ice cap on the left and the Viking ice cap on the right.