

TRAVELLING THE WORLD WITH A TEAM OF EXPLORERS



CANADIAN GEOGRAPHIC EDUCATION'S

ONLINE
Classroom

Subjects:

Geography, exploration,
mapping, geolocations

Time:

60 - 90 minutes

Grades:

4-12 (can be adapted for
younger grades)

What to know before getting started:

The Royal Canadian Geographical Society (RCGS) runs an Explorers-in-Residence (EIR) program, which allows all Canadians to connect with the expeditions and field research being carried out by the nation's top explorers, scientists and conservationists. When one of them makes a groundbreaking discovery or visits a unique place in the world, they share their experiences with fellow Canadians, often by means of storytelling and photography. **With this activity, you will meet the RCGS explorers and discover some of the breathtaking locations they have visited around the world by following a trail of clues!**

Materials you will need:

- An electronic device with internet access
- A notebook and writing utensils

Activity time!

Read this first...

Explorers need to be experts in navigation, mapping and spatial awareness. They often come across uncharted territory and never-before-seen landscapes and features, but they always know where they are thanks to their map-reading skills and their Global Positioning System (GPS) that use satellite signals to pinpoint the latitude and longitude of their position on Earth. [Google Earth](#) is a powerful computer program that also uses latitude and longitude coordinates and satellite information to help people identify a location on Earth and lets explorers travel back to the locations they have previously visited and photographed. In recent years, many explorers (both amateur and professional) have been taking 360-degree photographs, sometimes called Photo Spheres, which make it possible to explore a location almost as if you were there in person!

...then follow these instructions

The RCGS currently has five Explorers-in-Residence, each of which has a different exploration style and different interests when it comes to the world's natural places. Open [Google Earth](#) and use the following clues to visit some of the amazing expedition destinations of our five adventurers! (Answers are at the end of the activity).

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EXPLORER #1

Meet Jill Heinerth, one of the world's most accomplished cave divers, originally from Mississauga, Ont. Heinerth was the first person to explore underwater caves in Antarctic icebergs and has travelled more than three kilometres into a cave on a single dive — farther than any other woman in history. Not only is Heinerth an accomplished diver that has completed more than 7,000 dives, she is also a talented underwater photographer.



Clue to location #1:

In 1992, Heinerth moved to an island in the Caribbean to work in a diving lodge, where she spent several years developing her skills as a professional underwater photographer and videographer and exploring the surrounding coral reefs and underwater shipwrecks. This “grand” island features several strange place names, like Old Man Bay, Rum Point and Starfish Point.

- Using these place names, find the name of this island in Google Earth.
- How would you describe the shape of this island?

Clue to location #2:

In 2001, Heinerth led a diving team to explore the ice caves in the B-15 iceberg that broke off the Ross Ice Shelf near Roosevelt Island in Antarctica. Using Google Earth, travel to Antarctica and click on the little person icon—the small blue dots that appear on Google Earth are called Photo Spheres and the blue trails are Street Views.

- Can you find the Photo Sphere located in the ocean off the tip of eastern Antarctica (closest to the Ross Ice Shelf) which was taken on a boat and shows a massive tabular iceberg in the water? How would you define an iceberg? What causes icebergs to form?

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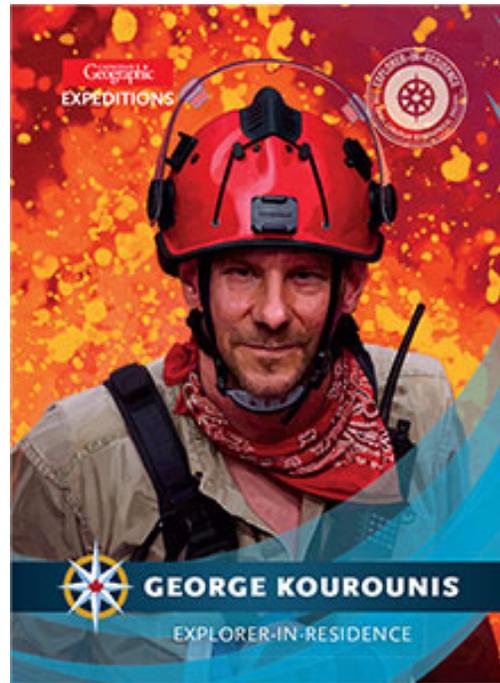


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EXPLORER #2

Introducing George Kourounis, world-renowned storm chaser, adventurer, and expert on natural disasters. He is also an award-winning television presenter, best known for the series *Angry Planet*. Kourounis has been to more than 65 countries and explored some of the most extreme and harsh environments on Earth.



Clue to location #1:

In 2018, Kourounis carried The RCGS flag into the active Marum volcano crater on Ambrym Island, Vanuatu. The crater is deeper than the height of the Empire State Building.

- In what part of the world is Vanuatu located?
- Can you find a Street View where you can see the active lava inside the crater? What is the difference between magma and lava?

Clue to location #2:

In 2013, Kourounis set a Guinness World Record by being the first person to reach the bottom of the Darvaza Gas Crater in Turkmenistan.

- This crater is nicknamed the “Gates of Hell.” Can you find a Photo Sphere that shows the crater at night? What type of gas is escaping? This crater has been burning for nearly half a century. Go online to dig a little deeper and find out the story behind this strange sight!

Clue to location #3:

Recently, Kourounis returned from a work trip to Japan. One of the places he visited was the Sakurajima volcano, where he witnessed an ash eruption from a safe distance.

- Find the volcano on Google Earth and turn on the 3D view in the bottom right corner to get a good look at the volcano. What kind of volcano is Sakurajima?
- How many peaks or vents (i.e., openings) does Sakurajima have?
- Zoom out. What part of Japan is it located in?

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EXPLORER #3

Our third explorer was the first North American to ever undertake a solo crossing of the Atlantic Ocean in a rowboat. Mylène Paquette spent 129 days rowing from Canada to France and weathered several harsh storms on her 5,000-kilometre journey. Paquette is passionate about the environmental conservation of Canada's waterways, in particular the St. Lawrence River, where she participates in ice-canoe races in the wintertime.



Clue to location #1:

Paquette began her journey in a port city on Canada's East Coast. This city has a long maritime history and is famous for its star-shaped fort that sits on a hill overlooking the harbour.

- Can you find the city and its fort on Google Earth? What is the name of the city and the fort?
- How many points can you count as part of the fortifications?

Clue to location #2:

Paquette finished her voyage across the Atlantic Ocean in the town of Lorient, France.

- What can you see from the satellite view of Lorient? Can you find the nearby fort in the hamlet of Port-Louis? Why might the fort be positioned where it is? Can you find a Photo Sphere looking out from the fort?
- Can you find a Photo Sphere on the water from the perspective of a kayak? This will give you an idea of what Paquette saw at the end of her journey!

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EXPLORER #4

Ray Zahab is an ultramarathon runner and adventurer that has broken records all around the world, pushing the limits of the human body by traversing some of the Earth's most challenging landscapes on foot. Zahab has more than 14,000 kilometres under his belt from various expeditions across deserts and polar terrain. He is also the founder of Impossible2Possible, a non-profit organization to educate, inspire and empower youth through experiential learning and adventure.



Clue to location #1:

One of Zahab's first major expedition runs took him across the Sahara Desert.

- Find the Sahara Desert on Google Earth. How many countries does it cover? The desert stretches from the Atlantic Ocean on the western coast of Africa to which body of water in the east?
- Egypt is located in the eastern Sahara region and is known for its breathtaking urban oases. Can you find a Photo Sphere in one of the largest oases in northwestern Egypt? What is this oasis called?

Clue to location #2:

In 2013, Zahab ran more than 2,000 kilometres, crossing the Gobi Desert from east to west.

- Find the Gobi Desert on Google Earth. Which two countries does it stretch across?
- Zahab passed through the town of Dalanzadgad, which sits near the Yolyn Am Gorge. Can you find a Street View or Photo Sphere inside the gorge? Where do you think the water for the river in this gorge comes from?

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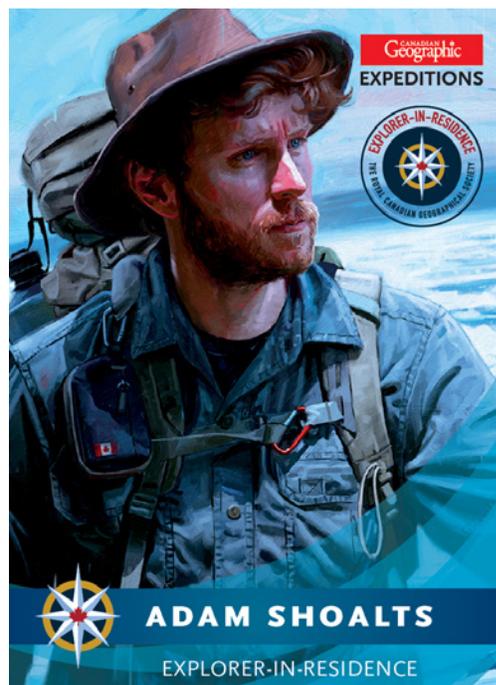
Clue to location #3:

In 2019, Zahab travelled to the Kamchatka peninsula in Russia's Far East, where he and his expedition partner navigated a harsh Arctic landscape on skis. They passed over frozen rivers and braved avalanche-prone mountains.

- This region is often referred to as the “Land of Fire and Ice.” Take a look around on Google Earth and zoom in on some of the landforms. Why do you think Kamchatka earned this nickname? Can you find a Photo Sphere that would represent “ice”? How about something to represent “fire”?
- The unique geography of the Kamchatka peninsula means that it is home to some stunning wildlife. Locate Kurile Lake at the very tip of the peninsula. Can you find the Photo Sphere in the middle of the lake? What do you see?

EXPLORER #5

Adam Shoalts is a cartographer, explorer and writer whose passions include geography, archaeology, anthropology, and history. He has travelled across some of the world's most unique environments, including the Amazon Rainforest and the Canadian High Arctic, and has written three books which chronicle his expeditions. As part of his latest project, Vanished Beyond the Map, he is searching for clues left behind by past explorers!



Clue to location #1:

In 2014, Shoalts explored a nameless river on Victoria Island in Nunavut, located 500 kilometers above the Arctic circle. Along the way, he saw animals including musk-oxen and caribou, and discovered ancient archaeological sites that held clues about past expeditions to the Arctic Ocean.

- Head to the Canadian Arctic Archipelago and find Victoria Island. How would you describe its shape?
- Which islands are located directly to the east, north and west of Victoria Island?

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Clue to location #2:

In 2017, Shoalts paddled nearly 4,000 kilometres across Canada's Arctic, travelling from Old Crow, Yukon, to Baker Lake, Nunavut, by canoe. Follow his journey on Google Earth using the waterways.

- Look at the landscape around Old Crow, Yukon. What interesting features do you see surrounding the curves of the Porcupine River? What are these small, crescent-shaped lakes called?
- Which river would you paddle on if you were travelling from the community of Tsiigehtchic, N.W.T., to Fort Good Hope?

Share your learning adventure with us!

Did you take any screenshots of amazing locations as you explored Google Earth that you'd like to share? What did you learn by completing this activity? Do you have any questions? Tag @CanGeoEdu on Facebook, Twitter or Instagram and let us know using the hashtag #OnlineClassroom!

Answers to clues

Heinerth - location #1: The **Grand Cayman Island** curves around a large bay called North Sound which has shallow swamps.

Heinerth - location #2: An **iceberg** is a large piece of floating ice that, due in part to warming air and ocean temperatures, breaks off a glacier or an ice shelf and travels along ocean currents.

Kourounis - location #1: **Vanuatu** is located in the southern Pacific Ocean, beside the Coral Sea and off the eastern coast of Australia. Magma is molten rock that is inside the volcano, underground, whereas lava is the name given to the molten rock that escapes to the surface.

Kourounis - location #2: The gas escaping from the **Darvaza Gas Crater** is methane. The crater is an accident resulting from human activity—do further research to find out the story!

Kourounis - location #3: The **Sakurajima volcano** is a stratovolcano located in the Kagoshima Prefecture on Kyushu island. It has three peaks.

Paquette - location #1: **Halifax, N.S.**, was the starting point of Paquette's journey. The name of the fort is the Citadel and its star-shaped fortifications have eight points.

Paquette - location #2: **Lorient** sits at the juncture of the Blavet and Scorff rivers. The **Port-Louis Citadel** was built at the entrance to the harbour because this is the narrowest point of the waterway and could provide a military advantage. **The harbour at Lorient** is popular for all sorts of maritime activity, from fishing and commercial vessels to recreational ships and yachting.

Zahab - location #1: The **Sahara Desert** stretches across more than 10 countries, reaching to the Red Sea. The **Siwa Oasis** is one of Egypt's largest urban oases.

Zahab - location #2: The **Gobi Desert** covers southern Mongolia and northern China. The **river** comes from melting ice and snow in the Gurban Saikan Mountain range, where there is a small mountain glacier that has been steadily shrinking due to warming temperatures.

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Zahab - location #3: Kamchatka is a UNESCO World Heritage Site because it represents one of the most unique **volcanic** regions in the world, with more than 300 volcanoes. This is a land of contrasts, with harsh, cold winters and a landscape dotted with nearly 30 active volcanoes. **Kurile Lake** was formed from the caldera of a volcano and is popular with wildlife.

Shoalts - location #1: Victoria Island is a large island with many inlets and bays. It is surrounded by the **Prince of Wales, Melville and Banks Islands**.

Shoalts - location #2: **Old Crow** is surrounded by oxbow lakes, which form when a section of a meandering river gets cut off. The **Mackenzie River** connects Tsiigehtchic, N.W.T., to Fort Good Hope.