THE GREAT TRAIL: CANADA'S TREASURE

CANADIAN GEOGRAPHIC EDUCATION'S ONLINE Classroom

Subjects:

Nature, citizen science, conservation

Time:

1-2 hours

Grades:

Grades 7-12 (or grades 3-6 accompanied by a parent or guardian)

What to know before getting started:

Canada is blessed with unparalleled geographical beauty. From the Avalon Peninsula on the island of Newfoundland to the Nicholson Peninsula in the Northwest Territories, and everywhere in between, we are presented with countless opportunities to connect with nature and learn from our surrounding environment. Right now, there is a grassroots movement in Canada to profile its human and natural elements by way of citizen science projects that focus on the collection, analysis and dissemination of data. This data is invaluable to researchers studying human-environment interactions, but also to Canadian citizens concerned with the protection and preservation of Canadian nature and wildlife. Citizen science projects are a great way to get outdoors and appreciate the world around you while simultaneously learning basic skills such as critical thinking, problem-solving and analytical thinking. The Great Trail of Canada (formerly known as the Trans Canada Trail) covers more than 27,000 kilometres of land and water. Use the following activities and resources to experience the benefits of the outdoors and the excitement of citizen science, and to learn about The Great Trail.

Activity time!

Read this first...

Many places in Canada are connected because they are located along, or in close proximity to, The Great Trail—a network of multi-use recreational trails that stretch more than 27,000 kilometres, joining together the Atlantic, Pacific and Arctic coasts. This trail (formerly known as the Trans Canada Trail) includes walkways, waterways, roadways, and passes through numerous historically significant locations in Canada, such as the Shogomoc River Pedestrian Suspension Bridge in New Brunswick, the grounds of Rideau Hall in Ontario, and the Okanagan Valley in British Columbia.

Get to know The Great Trail in more detail by using the activities available on The Great Trail website. You can "Explore the Map" by selecting sections of the Trail and toggling information such as photos, distances, elevation, and weather warnings. You can even find your closest connection to the Trail by inputting a postal code in the search bar, or you can download data about specific sections of the Trail to be used offline. Official videos about The Great Trail can be found via this link.

Stop and think: Which section of the trail has the highest elevation? What is the difference between a blue trail and a green trail? Where are the ferry trails? Which sections of the trail border the United States? Are there any sections of the trail currently under advisory for weather-related events? Watch one of the videos and describe how that person connects with the geography of Canada. Go to the FAQ—what is the difference between Trans Canada Trail and The Great Trail?

...then follow these instructions

Feeling a special and memorable connection to a place is known as having a "sense of place." Sense of place is a very important concept in geography—it is the personal way in which we perceive and interact with a place. Our sense of place is dictated by what we like and dislike about a place, what we respect and value in a place, our knowledge of a place and our desire to conserve or bring about positive change to a place. Sense of place is important because it is how we connect with our surroundings, appreciate Earth's natural resources, and nurture our own personal identity.

Use the Sense of place worksheet and answer the questions while considering a place in your own community. Have a discussion with classmates, friends or family about your answers to the questions on the Sense of place worksheet. The last four questions were strategically included to get you thinking about places and patterns you want to learn more about and how you would do this if you had the chance. These types of questions are similar to the fundamental questions researchers ask themselves before heading out to do fieldwork or data collection.

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Materials you will need:

- An electronic device with access to the internet
- Pen or pencil
- Notebook

When fieldwork and data collection are done by a group of non-scientists with a common goal, this constitutes citizen science. Citizen science initiatives have had groundbreaking impacts on our understanding of the world, its geological processes and biodiversity, and the ways in which humans interact with the environment. With large numbers of people collecting many different types of data and openly sharing them with organizations and researchers, discovering the answers to research questions that could never before be answered is finally a possibility. Fieldwork, data collection and citizen science go hand-in-hand! Refer to the List of citizen science portals and projects card for examples, or find your own local example.

As a class, with family or with friends, choose a citizen science project that is of interest, and a nearby section of The Great Trail that would be a feasible fieldwork site for this type of project. Develop a plan to spend some time outdoors collecting data and keep the following in mind:

- What is the main issue or research question associated with this project?
- Which location is best suited for a fieldwork site?
- How will I get there and how much time will I spend there?
- What data will I be collecting?
- What materials and tools do I require to collect data?
- Do I need things like sunscreen, bug spray, rubber boots or work gloves?
- Does the citizen science project have an app that can be used in the field?
- Do I require an internet connection to use the app, or can it be used offline?
- Can I proceed rain or shine?
- Are there any safety considerations to make?
- How can I collect data while maintaining social distancing?
- Is the fieldwork site accessible to many people?
- Can I respect the phrase "take nothing but pictures, leave nothing but footprints"?
- How will I consolidate the data that I collect after my fieldwork?

If it's safe and possible to do so, try your hand at collecting data in the field! Once you have had enough time to collect data, dedicate time to discussing the experience and the overall result with teachers, family and friends. Be sure to refer back to the original research question or issue and discuss how your efforts contributed to the project. Discussion questions could include:

- What was the overall purpose of the chosen citizen science project or the fieldwork exercise?
- How does this connect with human geography, physical geography, or geographical methods?
- What were the characteristic features of the fieldwork site?
- What were the advantages and disadvantages of this site in relation to the research question?
- What were the primary sources of data?
- What did you learn or enjoy about citizen science and fieldwork?

This can be extended further by:

- Discussing the results
- Drawing charts and diagrams by hand or with graphic software
- Looking at photos taken in the field
- Writing personal reflections
- Making presentations
- Creating infographics

Stop and think: Now that you have explored The Great Trail online and in person, how would you describe its geography to someone who has not? What other sections of the Trail would you like to visit? Is citizen science a good way of getting people to visit the Trail? How can citizen science help us learn more about our country?

Share your learning adventure with us!

What did you learn by completing this activity? Do you have any questions? Did you take any photos you would like to share with others? Tag @CanGeoEdu and @TheGreatTrail on Facebook, Twitter or Instagram and let us know using the hashtag #OnlineClassroom!

Other ways to complete this activity:

- Younger students can conduct a simple fieldwork exercise, such as:
  - A scavenger hunt that incorporates sights, smells, sounds, colours and objects
  - A plant, insect or animal identification exercise using picture cards
  - Drawing and labelling a map of the student's yard
  - Counting occurrences of pedestrians and cars to determine peak foot and automobile traffic periods
  - Identifying symbols commonly used in public spaces
  - Creating dioramas of photographs that include smells, sounds and textures related to a research topic
  - If an outdoor activity is not possible, use a platform like Google Earth to do some data observation indoors!
- As an alternative to participation in an already established citizen science project, conduct a mini fieldwork session by using one of the educational apps from the List of educational apps card.
- If there is a citizen science project that operates locally, invite a representative to make a presentation to the class. Be sure to reserve time for students to ask questions about how this person initially got involved in citizen science, their academic background or personal interests, and what benefits they have enjoyed from being an active member of a scientific collective.

Interesting extras:

- The Great Trail website
- Document your experience of conducting fieldwork on or around The Great Trail and create a story to be featured on The Great Trail stories page. Send your story to communications@tctrail.ca.
- Do you want to stay up to date on what's happening with The Great Trail? Sign up for Trail Talk, the newsletter which highlights Great Trail heroes and their stories.
- Share your photos of The Great Trail on social media using the handle @TheGreatTrail.
- Download The Great Trail app and take it with you wherever you go!
- Government of Canada citizen science portal
- Fieldwork guide and lesson plans

THE GREAT TRAIL of CANADA | LE GRAND SENTIER du CANADA

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LIST OF CITIZEN SCIENCE PORTALS AND PROJECTS

Portals

- Government of Canada citizen science portal
- Citizen Science Association
- David Suzuki Foundation citizen science
- NatureWatch
- Anecdata
- SciStarter

Projects

- Audubon Christmas bird count
- Aurorasaurus
- Biodiversity Heritage Library
- Birds and windows project
- Bumblebee watch
- Cities at night
- CrowdWater
- Did you feel it?
- eBird
- eButterfly
- eOceans
- FreshWater Watch
- Geo-Wiki
- Globe at night
- Great backyard bird count
- HerpMapper
- ISeeChange
- iSpot Nature
- Litterati
- MapIt for a clean planet
- MonarchWatch
- NestWatch
- Ontario BioBlitz
- PlantNet
- SatCam
- Secchi Disk Phytoplankton Project
- SnowTweets
- SPLASSH
- WildLifeLog

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LIST OF EDUCATIONAL APPS

Mapping

- Walkmeter Walking & Hiking GPS: tracks your route and your fitness statistics (Apple, Android)
- ViewRanger: map your route without a mobile signal (Apple, Android)
- GPS Logger: log your GPS coordinates at regular intervals (Apple, Android)
- MapIt: map sites that are of interest with GPS (Apple, Android)
- ArcGIS apps: a collection of apps that can be used in the field or the classroom (Apple, Android)
- Compass: determine direction in the field (Apple, Android)

Data Collection

- Collector: use maps and make observations (Apple)
- Survey123: collect and visualize data (Apple, Android)
- Skitch: take a picture and share the location (Apple)
- FieldNotes: take notes while in the field (Apple, Android)
- Altimeter and barometer: measure elevation and pressure in the field (Apple, Android)
- Clinometer: measure slopes in the field (Apple, Android)
- EpiCollect: collect data in the field (Apple, Android)

Identification

- FlowerChecker: identify plants (Apple, Android)
- iNaturalist: identify plants and animals (Apple, Android)
- LeafSnap: identify plants (Apple, Android)

General

- Starting with soil: gardening and the importance of soil (Apple)

Virtual Field trips

- Cardboard: use virtual reality to visit places via Google Earth (Apple, Android)

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SENSE OF PLACE

1. Which location in your community is important to you and your sense of place?

2. Describe the human and physical characteristics of this place.

3. Does this location have emotional, historical, spiritual or cultural significance to you? Explain.

4. How does this location impact your personal identity?

5. What are the ways in which you interact with or use this location?

6. Are there any issues affecting this location that you are aware of?

7. If you had the opportunity to learn more about this place, what would you want to know?

8. How would you go about acquiring this information?