Kawartha Trans Canada Trail
Outdoor Classroom

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With increasing pressures to pack more and more into the curriculum, teachers sometimes find it hard to justify taking students out of the classroom. Reluctantly, the outdoors is abandoned.

In our view this is a mistake. Outdoor experiences are highly-motivating for students, and meaningful first-hand experiences with the living world lead students to understand and remember important concepts

Outdoor experiences also provide foundational experiences for life long learning. More and more leisure activities take advantage of outdoor settings-- bird-watching, hiking, photography, drawing and more athletic sports like skiing, cycling and running are all becoming increasingly popular.

Our goal is to make it easier for teachers to make use of a valuable "Outdoor Classroom," the Trans Canada Trail.

The ten Trans Canada Trail Lesson Plans you'll find here include detailed outlines for you as teacher, along with handouts for students. All lessons allow Junior division students to meet Ontario Ministry of Education expectations in a variety of subjects—Science, social studies, language arts, visual arts, and physical education. Not all lessons call for a field trip, but all connect in some way to the Trail; many combine classroom activity with Trail activity.

Along with the lessons we're providing planning tips.

Check out the lessons, and if you try them, let us know how it went. As you'll see, there are opportunities for your students to get in touch with us, too, and they can submit photos ans stories. Our website is www.kawarthatranscanadatrail.ca.

If you do lead your students out onto the trail, it is our organization's hope and belief that you will be equipping our next generation to be a voice for our environment and our trails.

Board of Directors
Kawartha Lakes Green Trails Alliance
www.greentrailsalliance.ca
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Lesson Index

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3	Adopt a Tree	Science	Students in pairs, follow a tree through the seasons, recording data.
4	The Meeting	Social Studies / Language Arts	A parcel of land is to be developed. Students role-play a town meeting, taking various points-of-view.
5	Stories from the Trail	Language Arts	Options include recounts, descriptive writing, and narratives. Students can publish their work online.
6	Coast to Coast	Social Studies – Mapping Skills	Students demonstrate their grasp of longitude and latitude and produce a map showing the Trans Canada Trail route.
7	Trails of Canada	Social Studies	Students use Internet resources to compare TCT and another trail using a Venn Diagram as an organizer.
8	Down and Dirty Landscapes	Visual Arts	Students use a rubbing technique to create unique landscape portraits of a scene along the Trans Canada.
9	Photo Gallery!	Language Arts (Media Literacy)	Students learn some key photography terms and concepts and create a collection of photos to illustrate angles and distances.
10	Take a Trip (Travel Plan)	Social Studies / Language Arts	Students pick a point along the trail, research, then prepare a plan for a trip.

Trans Canada Trail Lesson Plan # 1

On the Run

Grade 4-6

Subject: Physical Education (Active Participation)

Season: Fall

Length: approx. 60 min.

Overview:

A great way to introduce your students to the Trans Canada Trail and one of its recreational uses, and to teach cross-country training techniques. (There's even a little mathematics thrown in.) Students walk a section of the trail, estimating distances, stretch, then try out one of several training methods.

Ontario Ministry of Education Expectations:

- Students will perform the movement skills required to participate in outdoor pursuits.
- Students will estimate, measure and record length.

Materials:

- ✓ 6 orange cones
- ✓ trundle wheel
- ✓ whistle

Activity Part One:
Getting There

Share with students the "overview." You might also informally survey the group to find out how many have been along the trail and how they traveled along it (on foot, bicycle, snowmobile, etc.)

Have students change into their gym clothes, collect your materials, and take students to the nearest point on the trail. Mark that point with one of the cones.

Review relation between metre and kilometre and let students know they will be helping to measure out a 1 km section of the trail.

Instruct all students to go along the trail a distance they think is 100 metres, then sit. Either you or a pair of students remain behind with the trundle wheel, then measure out precisely 100 metres. Place a second cone there.
Repeat this process—students go ahead another 100 metres and sit. Then 200 metres, repeat 200 metres, then 400 metres. Mark with a cone each time. (Students' estimates should improve).

Ask students how far they have come. (100+100+200+200+400 = 1000 metres or 1 km).

Activity Part Two:
Stretching

Discuss importance of stretching when running on uneven surface, then have students spread out, finding a spot where they can see you (or a student you've picked) and lead them in a series of stretches.

For basic stretches check the OPHEA binder or follow this link:
www.pccoach.com/newsletters/May05/stretching.htm

Because the Trail surface may be uneven, Include ankle circles.

Activity Part Three:
Getting Back

Introduce one of the following training methods. (You can return to the trail on another occasion to try the other one).

I. **LSD** (Long Slow Distance). A valuable training technique. Students buddy up with a partner "their own speed." Tell them their goal is to maintain a comfortable but steady pace. Give them the "talking test" rule of thumb: As they run they should chat. If they are out of breath and can't talk, then they are trying to run too fast and should slow down.

   Tell students that if they are among the first to finish, they can double back until they reach the teacher. In this way, the whole group should finish at the same time.

II. **Fartlek** (Be prepared for some snickers and guffaws when you introduce this term, which means speed-play in Swedish --"fart" = speed). It is essentially a training session that comprises some speed [effort] change.

   Once again, students partner up with someone who is a good match in running speed and stamina. Each pair will pick a physical landmark or cones to run to (at about ¾ speed) then pick another landmark and jog very slowly, then repeat this process—fast-slow-fast-slow.

   As with the LSD, before they set off, tell students that if they are among the first to finish, then can double back, fartlekking until they reach the teacher. You bring up the rear encouraging any reluctant runners and collecting cones as you go.

Optional: Finish off with a stretching activity and debriefing.

Assessment: This is meant to be an introductory activity and to encourage a positive attitude towards running and the Trans Canada Trail.

No formal assessment is needed, but at the end of the run, you could have students take their pulses, then again one minute later to introduce the notion of "recovery rate," or take a poll: "Rate the trail as a place to practice running skills" on a scale of 1 to 4.

Trans Canada Trail Lesson Plan # 2

Habitats Big and Small

Grade 4 or Grade 6

Subject: Science (Life Systems)

Season: Fall or late Spring

Length: Approximately 140 minutes

Overview:

After an in-class introduction to trail-use ethics students will use a portion of the Kawartha Trans-Canada Trail for a whole-class exploration of a large habitat, then, in pairs, inventory and classify plant and animal species in a microhabitat defined by a hula hoop. A rubric is provided for assessing the mricohabitat activity.

A good way to kick off your Life Systems unit.

Ontario Ministry of Education Expectations:

- Students will demonstrate an understanding of the concepts of habitat and community (Grade 4)
- Students will investigate the interdependence among plants, animals and their specific habitats (Grade 4)
- Students examine a specific habitat . . . observe the organisms found there, and use a classification system to classify those organisms. (Grade 6)

Materials:

- ✓ clipboards (1 for each pair of students) and pencils (including a few extras) in a container
- ✓ hula hoops (1 for each pair)
- ✓ whistle
- ✓ stopwatch
- ✓ (optional, but useful) small collecting jars, magnifying glasses, field guides

Activity One **Length:** 40 minutes
Trail Ethics

Survey the class again to find out how many have been along the trail and how they traveled along it --on foot, bicycle, snowmobile, etc.) (If you did lesson one, all of the students will have been along the trail.) Tell them the class will be returning to the trail, but have an important job to do first.

Put Trail Rules instruction sheet onto overhead (or present on Smartboard). Go over instructions on the sheet. Emphasize the fact that there must be a good reason for each rule.

Form groups of 5-6 students, and give each group a large sheet of newsprint or chart paper and a broad-point marker. Tell them there will be 10 minutes to come up with their set of rules, and that although they can have a single recorder for the rules, each student in the group will present one rule and its justification to the class. Start a timer.

As students present you could compile a single, class-generated list of rules on chart paper. Some overlap is inevitable and just reinforces key ideas.

After students have presented, show them the Ontario Trail Use Ethics sheet. (Again, overhead or Smartboard would be an effective way to do this). Compare the two lists (the class's and the Trail Association's).

Activity Two **Length:** 40 minutes
Big Habitats

Take the class out to a spot on the Trail that provides a good view of a distinctive habitat (field, forest, wetland for example). Define the terms habitat and community:

Habitat: The area in which a species lives. (Examples: pond, field, rainforest, arctic)
Community: A group of all the interdependent plant and animal species found in a habitat.

Have students sit. Identify the habitat that surrounds them, then tell them they will, as a class, be using their senses to identify as many plant and animal species within the habitat as they can.

I. **Sound**: Have students shut eyes and mentally keep track of sounds they hear in the space of 1 minute (bird calls, insects, amphibians, etc.) Record on a tracking sheet.
II. **Sight:** From where they are sitting, what plant and animal species can they pick out? Record on the tracking sheet.

Follow-up:
Since most animals will be out-of-view, students could predict what animals might be found in the habitat (herbivores that depend on the plants; carnivores that might prey on those herbivores.)

Activity Three **Length:** 60 minutes
Microhabitats

Have students sit in pairs and distribute a hula hoop, clipboard, activity sheet and pencil and if possible a magnifying glass to each pair.

Tell students they will be thoroughly investigating a "microhabitat" --everything they find within a space defined by a hula-hoop. If they don't have a name for a species, they can come up with their own name or describe briefly.

When they finish the inventory they will choose either their plants **or** animals and divide them into two groups. (You might want to give examples of ways to classify for any who are unclear –for plants, for example—berries/ no berries; under 10 cm/ taller than 10 cm).

Let them know their work will be turned in and marked for neatness, completeness, and coming up with a classification system that makes sense. If you have field guides, let students know these can be referred to.

Encourage students to locate an interesting spot within sight of the teacher, set down their hoop, then begin work. Some possible locations: alongside the trail, half-on/half-off the track, under a tree, in the open, bottom of ditch, near water.

Debriefing can be done immediately, or back in the classroom. For grade 4, focus on connections among species (interdependencies); for grade 6 focus on the methods they chose for classification.

Assessment

	D	C	B	A
Neatness	• Very hard to read	✓ Readable	III. Easy to read	Very easy to read
Completeness	• Few species	• Some plants and animals	• Includes most	• All plants and animals in space
Classification system	• Makes limited sense • Leaves out number of species	• Makes some sense • Includes many species	• Makes sense • Almost all species	• Makes lot of sense • Includes all species
Overall	Needs work	Getting there	Solid work	Awesome!

The Ontario Trail User Code of Ethics

Expect and respect other users

Know and obey rules and laws

Stay on the trail

Do not disturb plants or animals

Do not litter

Respect private property and local residents

Be prepared, to ensure your safety and the safety of others

Stay on the right, pass on the left

Slow when approaching other travelers, and yield to the faster traveler

Be courteous and communicate with other trail users

(excerpt Ministry Health Promotion- Ontario Trails Strategy Document, 2006)

Kawartha Lakes Green Trails Alliance - City of Kawartha Lakes

Student Activity Sheet

Hula-hoop Habitat

Instructions: Make an inventory (list) of all the species of plants and animals you find inside your hula-hoop habitat. (If you don't know the species name, make up a good one or describe).

At the bottom of the sheet, choose either your plants or your animals and organize them into 2 groups in a way that makes sense to you. (You are "classifying" them.) Provide a label for each group).

Plants	Animals

Classifying of Plants **or** Animals into Two Groups

Label: _____	Label: _____

Adopt a Tree

Grade 4

Subject: Science (Life Systems)

Season: Fall, Winter, Spring

Length: Will vary

Overview:

In pairs, students "adopt" a tree. They become familiar with its features and its place in a Natural community, then observe changes through the seasons. An extension allows the students, in spring, to see changes in their tree in relation to changes across North America.

Ministry Expectations:

- Students will demonstrate an understanding of the concepts of habitat and community
- Students will describe and record changes in a community over time.

Materials:

- ✓ Scrapbooks (or folder)
- ✓ Crayons, pencils.
- ✓ Clipboards
- ✓ Field guides for identifying trees (for recommendations, see http://ontariotrees.com/index.php)
- ✓ Assignment sheet

Activity One

Outline the assignment to students. Distribute scrapbooks and discuss the scrapbook form. (They will be able to write and draw in it, but can also tape or glue any flat items (tracings, keys or seeds, photos, etc.)

Their first task will be to choose and get to know their tree.

On the trail, pairs of students choose a tree or large shrub along the trail. (It can be marked in an unobtrusive way—a small piece of yarn, for example).

They then collect and record information about the tree to insert into the scrapbook, using

the Adopt-a-Tree Assignment sheet as their starting point. (This sheet can be taped or glued into the front cover of the scrapbook for students to refer to.)

Activity Two

Back in the classroom, students use data they have collected to identify their tree species and research information about it.

Note: In the City of Kawartha Lakes stretch of the trail, the following tree species can be found:

Scotch pine
White spruce
Birch
Apple
Manitoba maple
Black cherry
Elm
Eastern white cedar
Juniper

Shrubs/ Small trees:
European buckthorn
Red Osier dogwood
Serviceberry

Follow-up

Return to the trail during winter and spring to add to the scrapbooks.

Extension

In spring, students can take measurements of bud development and participate in a powerful Internet activity-- Journey North's "Leaf Out."

Follow this link to find out more about this 15 day project:
www.learner.org/jnorth/tm/leaf/15DaysA.html

Adopt-a-Tree Assignment Sheet

Scientists: _____ & _____

First Meeting

Here's some information you could collect about your tree as you're getting to know it:

- Circumference and approximate height
- Sketch of tree silhouette (shape)
- Bark rubbing
- Bark colour
- Tracing of leaf or needle shape
- Leaf or needle colour
- Arrangement of leaves on twig (opposite, alternate, whorl)
- Sketch or sample of seed or berry
- List of plants growing under tree canopy
- List of any animals on or under tree

Research

With the information you collect in the first meeting you should be able to identify the kind of tree.

Research to find more information:

- Human uses
- Animal uses (food, shelter, etc.)
- Lifespan
- Range
- Other

Follow-up

When you return to your tree, record changes you see:

- Changes in leaf/ needle
- Additional species spotted under or on tree

Trans Canada Trail Lesson Plan # 4

The Meeting

Grade 4

Subjects: Science, Language Arts

Season: Any

Length: minimum 60 minutes

Overview:

Developers are proposing to build on a parcel of land alongside a section of the Trans Canada Trail. A public meeting has been called and "stakeholders" are invited to present their views.

Students take on roles and present their points of view. Town councilors decide who has made the best case and what will be done.

Expectations:

- Students will analyse the positive and negative impacts of human interactions with natural habitats and communities taking different perspectives into account and evaluate ways of minimizing the negative impacts.

Materials:

- ✓ Gavel for the chairman.
- ✓ Printed-out role-play cards
- ✓ A few props for roles (students can provide these themselves)
- ✓ Student planning sheet

Activity Part One:
Introduction (30 minutes)

Present to the students the following situation:

Kawartha developers have put in a bid to purchase 200 acres of land that runs alongside a section of the Trans Canada Trail. Their plan is to build houses for a fast-growing community. (The land is within a short drive of the town.) Part of the land is a cattail marsh; part is an open field. The marsh is used by some ducks and geese and is home to several least bitterns, a bird that is threatened provincially.

A public meeting will be held to discuss the proposed development. All interested parties are invited to present their views. After the meeting the town council will decide whether or not to allow the land to be developed.

Key facts could be summarized on chart paper or the blackboard.

Go over with students the meaning of a species being “threatened”:

Terms (Definitions from Royal Ontario Museum site – www.rom.on.ca/ontario/about.php?module=gl)

- **Extinct:** Any species formerly native to Ontario that no longer exists anywhere.
- **Extirpated:** Any native species no longer existing in the wild in Ontario, but still occurs elsewhere.
- **Endangered:** Any native species facing imminent extinction or extirpation in Ontario which has been regulated under Ontario's Endangered Species Act.
- **Endangered (not regulated):** Any native species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario Endangered Species Act.
- **Threatened:** Any native species that is at risk of becoming endangered in Ontario if limiting factors are not reversed.
- **Special Concern:** A species with characteristics that make it sensitive to human activities or natural events.

Let them know their task will be to take a role and present their point of view at the public meeting the class will be staging. List the roles, then distribute them. (Students could draw role cards from a hat, or could volunteer.)

Part Two: Preparing

Students will be making short speeches to the whole group and the next block of time is for planning their arguments and preparing their speech. Their purpose is to persuade the council either that the development should go ahead or that it should be stopped. Each speaker will have 1-2 minutes.

Distribute the planning sheet, which will be turned-in after the meeting.

“Councilors” will need to fairly consider all points of view, but before the meeting could get together a brainstorm a list some arguments they expect to hear on each side (pros and cons of allowing development to go ahead).

Part Three: The Meeting

You may want to rearrange desks. (A horseshoe would work well, with each speaker coming to the center and the councilors sitting as a group].

You as teacher can act as Chairman. Before starting, emphasize that after the meeting has begun, everyone must be in role—they become their characters. Call the meeting to order, remind them of why the meeting has been called.

Call upon the speakers. After each has presented his or her position, the councilors can ask a few questions to clarify a position or collect more information.

Part Four: Winding-up

Chairman and councilors thank the speakers then present their votes, one by one, explaining what arguments have convinced them.

Role-play Cards **The Meeting**

Developer: You like the site and feel more houses are badly needed by this growing town.	**Family who needs home:** There's a housing shortage in the town and you are hoping to buy one of the new houses once they are built. You like the location.
Carpenter: If the developer is allowed to go ahead, you will have lots of work framing the houses. You have a family to support.	**Owner of Building Supplies Store:** The developer will be spending a lot of money in your store if the development goes ahead.
Bird Watcher: You like watching the meadow and waterbirds and want to protect the habitat of the threatened least bitterns.	**Farmer:** You've had your eye on this land yourself and are hoping to buy it, then plow the fields and grow corn.
Hunter: Each fall you and some friends visit the marsh and shoot your allowed limit of migrating ducks.	**Science Teacher:** You take groups along the trail and have used the meadow and wetlands as habitats for your grade 4 students to investigate.
Hiker: You often hike on the TransCanada Trail and are worried that the construction will make a lot of noise and ruin the view.	**Field Naturalist:** You want all wetlands preserved and have a particular interest in the endangered birds.

Senior: You've moved to the town from a big city because the town is small and quiet. You want it to stay that way and feel the development should not go ahead.	**Cyclist:** You enjoy cycling along the trail and are worried about the construction noise and effect on the view.
Landscape architect: You will make recommendations on what to plant if the development goes ahead. You would like to see the houses built, then new home-owners planting some of the species that are there now.	**Family:** This is a favourite spot of the family. (You picnic and fly kites in the summer). You want it preserved.
Member of Wetlands Preservation Group: Your group wants the marsh area left alone because of the purposes it serves (for example as filter for pollutants and as a habitat).	**Wildlife Photographer:** This is a favourite spot of yours for taking pictures.
Councillor: Your job is to listen to all the speakers and their arguments, then decide what will be best for the town.	**Councillor:** Your job is to listen to all the speakers and their arguments, then decide what will be best for the town.
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Stories from the Trail

Grade 4-6

Subject: Language Arts

Season: Any

Time: Approximately 150 minutes

Overview:

The easiest kind of writing for students is the recount (a retelling of a personal experience). Any expedition to the Trail can be turned into a recount, but the recounts are dull unless some sensory detail in included. In this lesson, students collect sensory details then incorporate some of those details into their writing.

Completed stories can be uploaded to the websites of the local trail organization (www.kawarthatranscanadatrail.ca) or the official Trans Canada Trail website, or just added to writing portfolios. How far to take the writing is a teacher and student decision.

The lesson could be done over 2-3 days.

Ministry Expectations:

- Students will generate, gather, and organize ideas and information to write for an intended purpose and audience
- Students will use specific words and phrases to create an intended impression (Grade 4); Students will use some vivid and/or figurative language and innovative expressions to add interest (Grade 5)

Materials:

- ✓ Sample Passages
- ✓ Senses Alive Worksheet
- ✓ Clipboards and pencils

Activity One – In the Classroom (about 30 minutes)

With the class brainstorm feelings and record on experience paper or the board. (Some examples: peaceful, nervous, excited, happy, sad . . .)

Read the "Sample Passages" . (They could be presented on an overhead or Smartboard or simply read aloud to them).

Have students infer the feeling or mood of each passage. Discuss how particular images (details) and describing words can help the reader feel these feelings.

Divide the students into small groups. Give each group a hard copy and a highlighter. As a group they decide on and highlight the words that help create the mood.
Debrief, focusing on images and describing words that many groups identify. (You may want to record some of these on experience paper, along with the feeling label)

Activity Two –Still in the Classroom (about 40 minutes)
Sensory Details

Share with the class an outdoor experience you've had. (Include vivid sensory details). When you finish, ask students to tell you some details they remember. Ask them to put a "feeling" label on story—peaceful, funny, scary, exciting . . .

Think/ pair/ share: Have them think about an outdoor experience they've had, then pair up, and take turns telling about their experiences. Their job is to include details that make the partner feel he or she was really there.

Afterwards discuss some details that stuck in their minds, and again discuss "feeling."
The lessons are that sensory detail will strengthen any writing and choosing particular details helps create mood or feeling.

Activity Three - On the Trail (about 40 minutes)

At the close of any field trip to the Trail, just before leaving, have students sit quietly and fill in the Senses Alive sheet with as many details as they can come up with, then highlight ones they are proudest of (details that are important, unusual, revealing . . .)

Activity Four - Back in the Classroom

Present the assignment (this could be copied onto the blackboard or onto experience paper):

Your challenge is to write a recount. You will tell about a walk along the trail, including sensory details to make your writing interesting for the reader. Your recount should have a particular "feeling."

Students should have their "Senses Alive Sheets" to refer to, and may want to use a planning sheet. (For Trillium Lakelands teachers, First Steps Resource Book includes several of these).

Note: To create some moods (scary, gloomy, etc.) students may need to invent some details (change the weather, for example).

Letting the class know that strong writing can be published online to be read by others could be a powerful incentive.

Evaluation (Focus is on word-choice creation of mood)

	D	C	B	A
Descriptive detail	• Visual • Not very interesting	• Several senses • Some interest	• Most senses • Interesting	• All senses • Very interesting or unusual
Mood	• Unclear	• Can be identified	• Clear	• Powerful
Overall	Needs work	Getting there	Right on!	Awesome!

Sample Passages

1. The trail led to the edge of a pond and I sat down on a soft hummock of grass to enjoy the scene. The sun was setting. A soft breeze ruffled the calm water and carried the sweet smell of wild rose. A dragonfly settled nearby and a frog jumped from a log with a gentle plop. From time to time fish rose to the surface, dimpling the surface. Crickets were starting to chirp in the distance.

2. The pelting rain fell from the mass of grey clouds. The trees, with only a few leaves still clinging to their almost-bare branches gave me no protection, and I could feel cold drips running down my neck. Ahead I saw black puddles and stretches of slippery, oozing mud. With a sigh I adjusted my sodden knapsack slowly trudged on. Miles still to go!

3. Whose idea was it to hike at night? The trees along the trail were black and menacing. Their twisted limbs twitched and wove back and forth, moved about by sudden gusts of cold wind. From the distance came a lonely howl. Close by I heard a sudden rustling and a dark shape slithered off.

4. There I was, on my mountain bike, at the highest point of the trail. I adjusted my helmet, gripped the brake levers and checked out the scene ahead. Over the handlebars I saw a blaze of fall colour—orange, red, and yellow lining both sides of the trail. The dark ribbon of the path dipped and rose ahead, leading to a narrow bridge crossing a deep gully. Here and there were jagged rocks, and twisted tree-roots criss-crossed the trail.

Behind me I heard the whirr of pedals and with excited whoops my friend swooshed by. I pushed off with a whoop of my own, pumped for what was coming next.

Student Worksheet

Senses Alive

A. Instructions: Find your own space along the Trans Canada Trail and sit for 5 minutes.

1. For each sense, make a list of details you become aware of.
2. Put a check-mark beside the details you like best.

Sight

_____
_____
_____
_____
_____
_____
_____
_____
_____

Sound

_____
_____
_____
_____
_____
_____
_____
_____
_____

Smell

_____
_____
_____
_____
_____

B. Instructions: On your teacher's signal, take 3 minutes to move around and some "touch" details and add to your sights, sounds, smells.

Touch

_____
_____
_____
_____
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_____
_____

_____
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Trans Canada Trail Lesson Plan # 6

Coast to Coast

Grade 6

Subject: Social Studies

Season: Any

Length: 40 minutes

Overview:

Students use coordinates to mark locations along the Trans Canada Trail. When finished they will have produced a map that roughly shows the trail route, from Victoria to St. John's. They then use an atlas to identify the cities whose locations they have marked.

Expectations:

- Students will prepare various forms of maps, using symbols and legends, to display places, transportation
- Students will use latitude and longitude coordinates to locate some major cities.

Materials:

- ✓ Map of Canada
- ✓ Latitude-Longitude worksheet
- ✓ Set of Atlases

Activity One:
Getting Started

Before you begin this lesson, students should be familiar with longitude and latitude and the usefulness of knowing these. One useful online resource for teaching these concepts was created by Jim Cornish at the Gander Academy and can be found at www.cdli.ca/CITE/lat_long.PDF

Distribute map of Canada and locate with students the lines of latitude and longitude. There should also be a map the whole class can see and refer to (a pull-down map of Canada, or acetate copy of the map you give them, on an overhead projector).

Use easy-to-locate features to give students some practice in establishing latitude and longitude. (Vancouver Island? PEI? Southwestern tip of Newfoundland? Niagara Falls?)

Activity One:
Trans-Canada

Hand out the Latitude-Longitude worksheets. Read over the instructions with students and answer any questions.

Once students have completed the locating of points, they should pick up atlases and identify the cities or towns linked together by the Trans Canada Trail.

Evaluation:

A mark out of 15 can be assigned. (One mark for each correct answer; 2 marks discretionary—accurate spelling, for example).

Answer Key:

Latitude	Longitude	Community	Province or Territory
45°	73°	Montreal	Quebec
50°	105°	Moose Jaw	Saskatchewan
47°	52°	St. John's	Newfoundland
53°	113°	Edmonton	Alberta
48°	57°	Cornerbrook	Newfoundland
48°	89°	Thunder Bay	Ontario
48°	123°	Victoria	British Columbia
45°	65°	St. John	New Brunswick
68°	133°	Inuvik	Yukon Territories
46°	60°	Sydney	Nova Scotia
45°	75°	Ottawa	Ontario
44°	78°	Lindsay	Ontario
46°	63°	Charlottetown	PEI

Trans Canada Trail Latitude & Longitude Worksheet

Instructions: Did you know the Trans Canada Trail will join three oceans? If you had enough time, you could walk from the Atlantic Ocean to the Pacific. If you turned north at Edmonton, you could trek to the Arctic Ocean.

As you completed the walk you would pass through many important Canadian communities.

Here's your task:

1. Use your knowledge of latitude and longitude to plot the route of the Trans Canada Trail. Put a dot at each location. (Each point you plot is a Canadian city or town along the Trail route.)
2. Connect the dots to show the Trail.
3. Use an Atlas to identify the communities represented by each dot.

Note: To make your work more challenging, the communities are not listed in any particular order.

Latitude	Longitude	Community	Province or Territory
45°	73°		
50°	105°		
47°	52°		
53°	113°		
48°	57°		
48°	89°		
48°	123°		
45°	65°		
68°	133°		
46°	60°		
45°	75°		
44°	78°		
46°	63°		

Trans Canada Trail Latitude & Longitude Worksheet

Instructions: Did you know the Trans Canada Trail will join three oceans? If you had enough time, you could walk from the Atlantic Ocean to the Pacific. If you turned north at Edmonton, you could trek to the Arctic Ocean.

As you completed the walk you would pass through many important Canadian communities.

Here's your task:

1. Use your knowledge of latitude and longitude to plot the route of the Trans Canada Trail. Put a dot at each location. (Each point you plot is a Canadian city or town along the Trail route.)
2. Connect the dots to show the Trail.
3. Use an Atlas to identify the communities represented by each dot.

Note: To make your work more challenging, the communities are not listed in any particular order.

Latitude	Longitude	Community	Province or Territory
45°	73°	Montreal	Quebec
50°	105°	Moose Jaw	Saskatchewan
47°	52°	St. John's	Newfoundland
53°	113°	Edmonton	Alberta
48°	57°	Cornerbrook	Newfoundland
48°	89°	Thunder Bay	Ontario
48°	123°	Victoria	British Columbia
45°	65°	St. John	New Brunswick
68°	133°	Inuvik	Yukon Territories
46°	60°	Sydney	Nova Scotia
45°	75°	Ottawa	Ontario
44°	78°	Lindsay	Ontario
46°	63°	Charlottetown	PEI

Trails of Canada

Grade 4

Subject: Social Studies

Season: Any

Length: Approximately 90 minutes

Overview:

Canada has a rich assortment of trails. Students will read about four of these, the Trans Canada Trail, East Coast Trail, Bruce Trail and Pacific Rim Trail; the Trans Canada crosses all Canadian physical regions; the others wind through particular regions (Appalachian, Great Lakes/ St. Lawrence Lowlands, Cordillera).

Using a Venn diagram they will compare two of the trails. In a paragraph they will then explain which they would choose to visit if they had their choice.

This lesson would make a good follow-up to lessons on Canada's physical regions, or to a hike along the Trans Canada Trail.

Expectations: Students will use graphic organizers and graphs to sort information, clarify issues, solve problems, and make decisions.

Materials:

- ✓ Computers with Internet access
- ✓ Copies of readings
- ✓ Venn diagrams

Activity One
Getting Ready (20 minutes)

Share the lesson overview with the students. Find out what Canadian trails students are familiar with. If a SmartBoard or projector is available, show the following images to give them a visual introduction to the trails they will be reading about.

East Coast Trail -- http://www.eastcoasttrail.com/photo_gallery/?limit=16
Bruce Trail -- http://www.brucetrail.org/explorethetrail.asp?id={EFD4F195-C1FE-47AA-AF1D-5C1BCB030716}
Pacific Rim Trail -- http://images.google.ca/images?hl=en&q=Pacific+Rim+National+Park&btnG=Search+Images&gbv=2
Trans Canada Trail - http://images.google.ca/images?hl=en&q=Trans+Canada+Trail&btnG=Search+Images&gbv=2

Activity Two
Paired Reading (10-15 minutes)

Have students pair up and distribute the two reading sheets. This could be a good listening exercise. Students take turns reading the passages. After each section is completed, the other student lists points he or she remembers.

Activity Three
Venn Diagram (30 minutes)

Review use of Venn diagram by having each pair use one to find their own similarities and differences (gender, physical appearance, hobbies, etc.) Each student is one circle; the overlapping area is for the similarities. Allow 10 minutes for this.

Note: Students are likely to be familiar with Venn diagrams; if they aren't, demonstrate on blackboard.

On their own, students pick two of the trails (including the one that interests them most) and use a Venn diagram to outline in point form their similarities and differences.

Activity Four
Supported Opinion (30 minutes)

Students plan and write a supported opinion paragraph on the topic "A Great Trail to Visit." They will need to state their opinion, provide three or four clear reasons for their opinion, then summarize in a sentence.

Evaluation
You may choose to evaluate either the Venn diagram (for accuracy and amount of detail) or the Supported Opinion (for organization and content).

To check the information in the Venn diagram you may want to refer to the Teacher Resource: Trails of Canada Information sheet.

Teacher Resource: Trails of Canada Information

Trail	Length (in km)	Location	Region	Features	Some Plants and Animals	Allowed Uses	Sample Activities
East Coast	540	• Newfoundland • Follows East coast	Appalachian	• Boreal forest • Coast • Cliffs and headlands • deep fjords • Sea stacks • Geyser	• Whales • caribou • seabirds	• Hiking	• See icebergs and watch for whales • Cross suspension bridge • Visit archeological digs
Bruce	850	• Ontario • Follows Niagara escarpment • Connects 2 Great Lakes	Great Lakes/ St. Lawrence Lowlands	• Mixed forest • Cliffs • Rolling hills • Waterfalls • Wetlands • farmland	• Birds (especially hawks and eagles) • Freshwater fish • 53 species of mammals	• Hiking • X-country skiing • Snowshoeing	• Watch migrating hawks and eagles ride air currents along escarpment • Clamber through crevice caves
Pacific Rim	91	• B.C. • Follows west coast	Cordillera	• Temperate rainforest • Cliffs • Sea stacks • Islands • Coast (intertidal and subtidal areas)	• Whales • Seabirds • Bears • Cougars • River otters • Barnacles and starfish	• Hiking • Paddling • Cycling (in some areas)	• Peer into tidepools • Watch for whales and sea-lions • See huge trees, hundreds of years old
Trans Canada	18,000	• Every province and territory • Connects 3 oceans	All but Hudson Bay Lowlands	• All kinds of forests • Grasslands • Mountains	• Most Canadian species	• Hiking • Cycling • X-country skiing • Horseback • Snowmobile	• Look into both Atlantic and Pacific tidepools • See mountains up close • Cycle across the Prairies

Student Sheet Trails of Canada

Instructions: Decide which of you will be "Reader A" and which "Reader B." Take turns reading the passages aloud.

When the reader is finished, the partner should list details he or she remembers.

East Coast Trail (Reader A)

The East Coast trail is 540 km long. It follows the rugged east coast of Newfoundland and is in the Appalachian region. Here you will find boreal forest and a rocky coast with cliffs and headlands, deep fjords. You will also find unusual features such as sea stacks (columns of rock that rise up out of the sea) and geysers. Expect to see many species of seabirds. You might also be lucky enough to see caribou or spot whales. The most important use of the trail is for hiking, but you could also arrange for kayaking along the coast. As you walk this trail icebergs may drift by. You will cross a suspension bridge and may want to stop to visit one of the archaeological digs.

Bruce Trail (Reader B)

The Bruce Trail is 850 km long. This Ontario trail follows the Niagara escarpment as it winds its way from Niagara Falls to the tip of the Bruce peninsula, connecting two Great Lakes. It is within the Great Lakes/ St. Lawrence Lowlands region. As you follow the escarpment ridges you will see mixed forest, rolling hills, waterfalls, and farmland. From the cliffs you can watch the hawks and eagles that ride the air currents along the escarpment. You will find many species of mammals and freshwater fish. In sections you can clamber through crevices and

find caves. The Bruce is open for hiking, cross-country skiing and snowshoeing.

Pacific Rim Trails (Reader A)

The Pacific Rim Trails runs for 91 km altogether. It follows the west coast of British Columbia and is found within the Cordillera region. The Pacific Rim includes temperate rainforests with trees hundreds of years old. Along the shore you will find sea stacks, strings of islands, and cliffs. Among the animals you may see are whales, seabirds, cougars, river otters, barnacles and starfish. Peering into tidepools and watching whales or sea-lions is popular. Visitors can hike or paddle. Cycling is allowed in some areas.

Trans Canada Trail (Reader B)

When all 18,000 km of the Trans Canada Trail are completed, this will be the longest trail of its kind in the world. It will pass through every province and territory and will connect the Atlantic, Pacific, and Arctic oceans. Here's a trail that lets you peer into tidepools on both coasts, see mountains up close, and travel through vast grasslands. The trail passes through every physical region except for the Hudson Ball Lowlands. Along its route you will see all kinds of forests, grasslands, mountains—everything Canada has to offer. You may also meet up with most of the species of animals to be found within the country. In summer you can hike, cycle, or ride a horse along the trail. In winter X-country skiing and snowmobiling are allowed.

Trans Canada Trail Lesson Plan # 8

Down and Dirty Landscape

Grade 4-6

Subject: Visual Arts

Season: Fall or Spring

Length: 60 minutes

Overview:

Students use a rubbing technique to create unique landscape portraits of a scene along the Trans Canada Trail. An opportunity to experiment with texture, get down and dirty with the trail, and be creative.

For the grade 6s, this is a chance to effectively use one-point perspective.

Expectations:

- Students will plan a work of art, identifying the artistic problem and a proposed solution
- Students will demonstrate understanding of the proper and controlled use of art tools, materials, and techniques singly and in combination
- Students will describe how one-point perspective can be used to create the illusion of depth

Materials:

- ✓ Newsprint (12" X 18")
- ✓ 20 lb. Bond paper (or photocopier paper)
- ✓ Clipboards
- ✓ Sets of pencil crayons
- ✓
- ✓ Ruler

Activity One: Getting Ready

Before going out to the Kawartha Trans Canada Trail complete one or both of these mini-lessons in the classroom:

A. Rubbings:

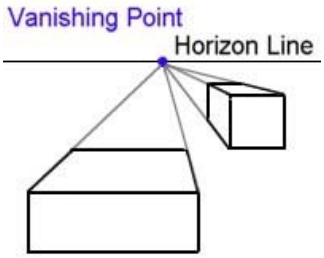
Distribute newsprint and have students fold to produce 8 sections (hot dog fold, then two hamburger folds).

Students move around classroom creating pencil crayon rubbings for each section. They should try to find a variety of textures and experiment with pressure and most effective way to hold pencil.

Debrief as a group. What did they learn from the exercise?

B. One-Point Perspective

If possible, look at artwork that makes use of a single vanishing point.



Tell students that they will be learning a way to make a scene appear 3-dimensional, and that this is a technique that is particularly effective when the eye is drawn to a single point on the horizon (in looking down a trail, for example).

Demonstrate on blackboard how to draw a 3-D tunnel using a vanishing point, having students follow steps

1. Draw a horizontal line about one-third from top of page.
2. Mark a spot on that line. That will be the **vanishing point.**
3. Draw a rectangle one-third from the bottom of the page.
4. Use a ruler to draw lines from corners to the vanishing point. (Join all corners that can be joined without passing through the rectangle.) These lines are called orthogonals.
5. Draw a horizontal line between the orthogonals, parallel to the horizontal sides of the rectangle. (It now looks like a tunnel) If you have connected 3 corners to the vanishing point, draw a vertical line from the top orthogonal down to the bottom one).

Activity Two: On the Trail

Have students bring pencil crayons in their backpacks. Find a spot along the trail that offers several interesting views and materials that could provide interesting textures.

Explain to students that their challenge is to make a picture of the landscape in front of them, using Natural materials around them to make rubbings. **They may either place paper on top of the surface and rub with pencil crayon or rub natural material into the surface of the paper.**

Have students identify some materials that might produce particular textures (tree bark, leaves, grass, gravel...) Have students identify some materials that might be rubbed into the surface of the paper (grass, berries, dirt, etc.)

Outline the steps in completing their project:

1. In light pencil, make a horizontal line show the horizon (where land meets sky).
2. If they intend to use a vanishing point, they should mark that in as well.
3. Also in light pencil, outline areas within their landscape (path, field, shrubs, for example)
4. Find materials to fill in those areas with the appropriate colour and texture.

You may want to give students one sheet for a practice run, then a second sheet for their "keeper."

Evaluation

	D	C	B	A
Problem-solving	*little planning *materials not always appropriate	*some planning *some appropriate materials	*evidence of planning *creative choice of materials	*very well-planned *very creative materials
Controlled use of materials	*little care	*some care	*care taken	*very careful
Overall	Needs work	Getting there	Solid work	Awesome

Trans Canada Trail Lesson Plan # 9

Photo Gallery

Grade 4

Subject: Language Arts (Media Literacy)

Season: Any

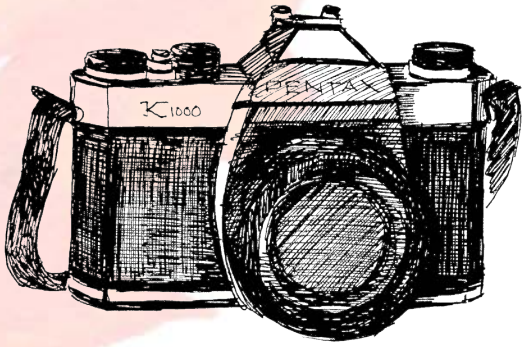
Length: Approximately 160 minutes

Overview:

These days, many classrooms have digital cameras, and many students have their own. In this lesson students are introduced to the concepts of distance from subject and angle, are given a few basic principles of composition, then apply what they have learned on a walk along the Trans Canada Trail. Students' best photos may be uploaded to the Trans Canada Trail website or to the local Trail website, or printed for display in the classroom.

Expectations:

- Students will produce media texts... using a few simple media forms and appropriate conventions and techniques (e.g. An album of camera shots showing the different angles and distances and commenting on their use)



Materials:

- ✓ Computers with Internet access
- ✓ Digital cameras (preferably enough so each pair or group of three has a camera)
- ✓ Way of downloading images from cameras (cord connected to USB port or a card-reader)

Getting Ready

Share with students the lesson "Overview." Find out how many have digital cameras they could bring to school and set a date for the field trip to the Trans Canada Trail.

Activity Part One:
In Class -Distance and Angle (40-60 minutes)

Hold up a digital camera and have students tell you some things they already know about cameras and taking pictures.

Have a volunteer stand on a stool to be a subject. With the camera in hand, move yourself and the camera to illustrate the following angles and distances. Ask students to predict what they would see through the camera viewfinder or screen, and what the effect would be (how it would make the subject look)

1. **Low-angle** (camera below subject, looking up)
2. **Eye-level** (camera at same level as subject)
3. **High-angle** (camera above subject, looking down)
4. **Close-up** (see only part of subject; within one metre)
5. **Medium shot** (see whole subject, but not much else)
6. **Long shot** (far from subject, and see much surrounding detail)

Take class to the computer lab. Students, in pairs, locate the Canadian Wildlife Service photo contest (teacher book-marking this in advance makes sense):
http://28005.vws.magma.ca/pages/home/photocontest_e.asp?section=13&page=171&language=e

Give students 10 minutes to examine photos in the archive. Their instruction is to pick the one they like best, then double-click on the image to load it (creating a "gallery" of images in the computer lab). Each pair must be prepared to identify angle and distance, then explain WHY they chose the image as a favourite. Reasons might include the subject and ability to connect to that subject, colours, etc.

Find a way for students to share their images and reasons for choosing them. ("Gallery" walk, for example).

Distribute copies of the "Tips for Taking Good Pictures." Students return to the photos they chose and decide whether the photographer made use of those tips.

Activity: Part Two
On the Trail (60-90 minutes)

Review what students have learned about angle and distance and some of the Tips for Taking Good Pictures.

Give students the following instructions: *With your partner, you will make an "album" of 10 pictures along the Trans-Canada trail. (You may of course take more, but delete all but your 10 best.) The subjects are up to you. You can include shots of plants and/or animals, landscape, portrait of your buddy.*

Activity: Part Three
Gallery (40 minutes)

The next step is to transfer images to the school computer network and, ideally, have each student print a favourite image.

For the image selected, the student should complete the bottom portion of the Worksheet.

Extension: Students could upload the favourite photos to the Trans Canada Trail website. (See the website for instructions on how to do this:

http://www.tctrail.ca/home.php

They can also submit photos to the Kawartha Trans Canada Trail website:
www.kawarthatranscanadatrail.ca

Tips for Taking Good Pictures: Seven Super Suggestions

Here are some tips from the professionals. Follow them and you can take pictures worth saving and sharing with others.

1. **Know your camera.** You should know the features of your camera and how to use those features.

2. **Make the subject clear.** We need to know what your picture is about. Easy with a close-up. For a long shot, the subject is going to be a landscape, and if you include a person far away, it may just confuse us.

3. **Experiment to find the best viewpoint.** Try taking a few steps left or right, standing on something or kneeling down . . . What's most effective?

4. **Horizontal or vertical view?** Turning your camera 90° changes the view from horizontal (wide) to vertical (tall). Try each and decide which looks better.

5. **Keep eyes in focus.** If you're photographing a person keep the eyes in focus. The rest will be fine.

6. **Check the horizon.** If you're photographing landscapes keep the horizon straight.

7. **Take a chance.** Digital shots are free, and you can always delete ones that don't work.

Student Worksheet **Photo Gallery**

Photo Sample **Photographer's Name: _____**

Date taken: _____ **Location: _____**

Subject: _____

Angle: _____ **Distance: _____**

Why I Chose this Photo: _____

_____

_____

Take A Trip

Grade 4

Subject: Social Studies, Language Arts

Season: Any

Length: Will vary

Overview:

Students pick a point on the Trans Canada trail that falls within their province. In groups of three, students collect information about a chosen section of the trail, then prepare a travel plan for a family trip to their section. This lesson is best done after students have been introduced to and have mapped the major physical regions of Ontario (Canadian Shield and Great Lakes/ St. Lawrence Lowlands)

Expectations:

- Students will use media works, oral presentations, written notes and descriptions, drawings, tables, and graphs to identify and communicate key information about the regions, provinces, and territories.
- Students will identify and describe types of communities in each physical region of Ontario
- Students will communicate in a clear, coherent manner, presenting ideas, opinions, and information in a readily understandable form

Materials:

- ✓ computers with Internet access
- ✓ (optional) Travel info from Chamber of Commerce or Ontario Travel
- ✓ desktop publishing software
- ✓ student worksheet

Activity Part One:
Getting Ready

Go over the lesson "Overview" with the students and distribute the worksheets. Discuss expectations for this project under these headings--group-work; travel plan; map; presentation.

Divide students into groups of three.

In computer lab students go to www.tctrail.ca/tlocator/index.html (the Trail Locator tool that is a feature of the Trans Canada Trail website.) From the list of Canadian trails they choose one of the Ontario trail sections and note the nearest communities.

Using the web or travel brochures, Ontario Road maps, etc. students research information about the community nearest their trail and the trail itself.

Activity Part Two:
Research

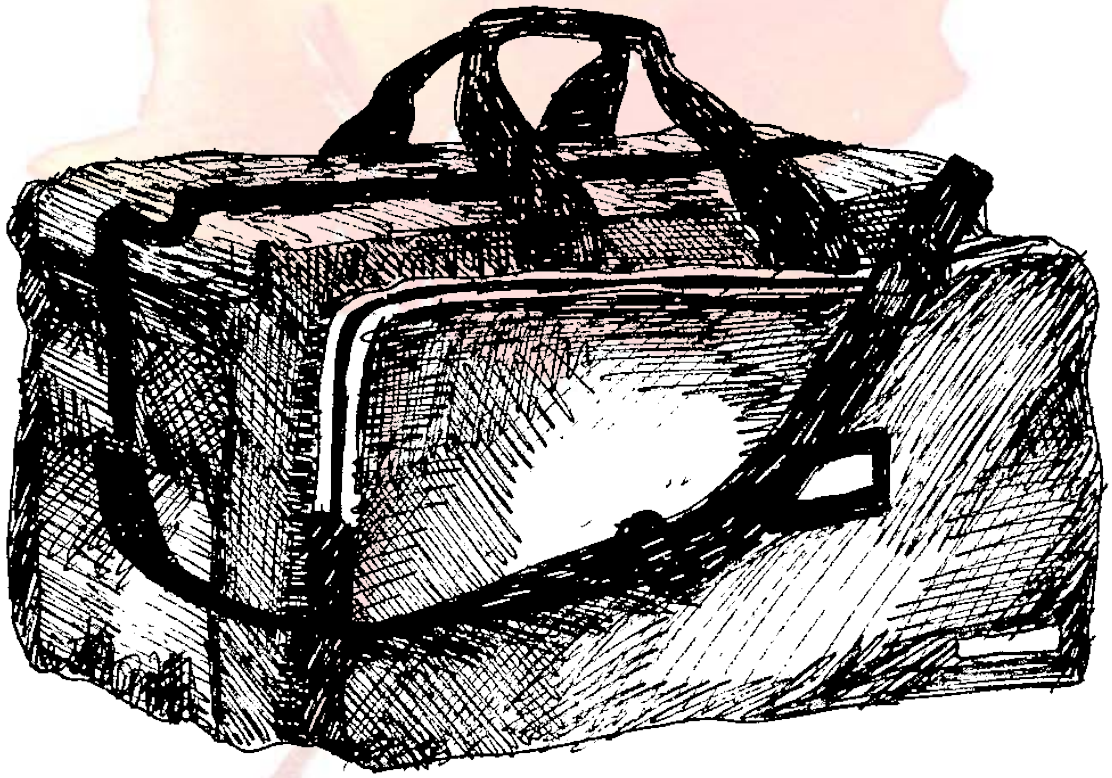
Students collect information for each part of the assignment:

- Transportation and packing information
- Sketch map of Ontario showing route from own community to destination
- List of things to see and do on trail and in community nearest to trail

Activity Part Three:
Presentation

Review criteria for a presentation. (What are the “look-fors” in a strong presentation?)

Teams present their information to their classmates.



Student worksheet **Take a Trip** **Names:** _____
_____
_____

Date for trip: _____

Trail Section: _____

Best way to see trail (Hike? Cycle? . . .) _____

Nearest Community: _____

Best form of transportation to reach: _____

Things to see and do on the trail:

Things to see and do in Community:

Packing list