

Our Environmental Footprint

An Introduction



Description of Lesson

The Earth is our home. It gives us everything we need to live. Everyday our actions and choices add up and have an effect on the Earth. We call this effect an Environmental (or Ecological) Footprint. In this lesson, students will consider their own behaviours and habits and how they impact the environment around them.

Connect with the Georgian Bay Biosphere Reserve

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Georgian Bay Biosphere Reserve: Lesson in a Backpack Program

At a Glance

Grade Level: 1 and 2

Learning Environment:
Indoor Classroom

Prep Time: 15 minutes

Length of Lesson: 1 hour

Key Vocabulary: Environmental footprint, natural resource

Staffing: 1 educator

Materials:

Nature slideshow (for indoor option)
Natural resource cards
Two pieces of rope (or hula hoops)
"Racing for resources" cards
If younger option is chosen, hula hoops are needed.
Environmental Footprint video
Environmental footprint cutout
The book "The Lorax" by Dr. Suess

All materials are available from GBBR. To get this resource, please call (705) 774-0978.

Groupings: Whole class, and individual

Teaching/Learning Strategies:
Hands-on learning, game.

Lesson Outline

TIME	ACTIVITY	LOCATION	MATERIALS
20min	Nature is Neat!	Indoors or outdoor classroom	Nature slideshow (for indoor option) Natural resource cards
15 min	Racing for Resources	Outdoors	Two pieces of rope (or hula hoops) "Racing for resources" cards If younger option is chosen, hula hoops are needed (not provided).
10 min	Our Footprints on Nature	Indoor Classroom	Environmental footprint video Environmental footprint cutout
20 min	The Lorax	Indoor Classroom	The book "The Lorax" by Dr. Suess

Curriculum Expectations Grade 1 and 2 Science and Technology

Grade 1: Understanding Life Systems-Needs and Characteristics of Living Things

Overall Expectations

1. Assess the role of humans in maintaining a healthy environment
2. Investigate the needs and characteristics of plants and animals, including humans.

Specific Expectations

1.1 Identify personal action that they themselves can take to help maintain a healthy environment for living things, including humans.

Grade 2: Understanding Life Systems-Growth and Changes in Animals

Overall Expectations

1. Assess ways in which animals have an impact on society and the environment, and ways in which humans have an impact on animals and the places where they live.

Specific Expectations

1.2 Identify positive and negative impacts that different kinds of human activity have on animals and where they live.

Background

An Environmental Footprint is a way to measure what we use on the Earth. It helps us share, and compare our lives to other people.

To measure our Environmental Footprint, we count up our actions in each of the following five categories: water, food, energy, transportation and garbage. We can measure the size of our Environmental Footprint by adding up our choices and actions in each of these categories to learn how much of the Earth's land we are using.

This lesson considers our Environmental Footprint simply as a term used to describe the relative impact that we have on the Earth; a bigger Environmental Footprint is worse than a smaller Environmental Footprint. However, scientists and older students use the term "Environmental Footprint" to mean more than that—to them an Environmental Footprint is literally an area of land (in hectares) that is used to live the way we do. The more of the Earth's resources that you use, the more hectares of land you theoretically use.

If every person on Earth shared land equally, our Environmental Footprints would be about 1.8 hectares. But, in Canada, we use many more resources than people in other countries; the average size of Environmental Footprint for Canadians is 7.6 hectares. If everyone lived like Canadians we would need 4 Earths!

That means that as Canadians we are using 4 times our fair share of resources. Many other people live with far less so we can live the way we do. This hurts the Earth. Eventually, we will run out of things, and so will other plants and animals.

The good news is that we can make good decisions and create positive change. We can make our Environmental Footprints smaller! Imagine if every one of us did one little thing. If every one of the 35,000,000 Canadians threw out one less plastic bag a year, imagine how it would all add up! That's 35,000,000 fewer bags to make and 35,000,000 fewer bags going to the dump.

By introducing the idea of Environmental Footprint (our impact on the Earth) to students, they will become aware of the 5 categories in which it is most easy for them to make a difference; water, food, transportation, energy, and garbage. They can then begin to take action and form habits for positive change.

Information and pictures source: <http://ecovoyageurs.ca/>.

Making a Cultural Connection

The First Nation Peoples of Canada have lived on Turtle Island for a very, very long time. Today many First Nation people and organizations continue to protect the land, air, and water. The NNDSB Resource Centre has many cultural books and other resources to share.

While learning about our environmental footprints, take this opportunity to review some of these historic and current cultural books and discuss the connections between the two with your class. How do the two relate? What can cultural lessons teach us about environmental sustainability?

Teaching and Learning

Part A. Nature is Neat

In this activity, students will become aware of how nature makes them feel, and all of the services that nature provides.

Outdoor Option: Tell the class that they will be going for a walk outdoors. Before the walk, have them think about nature. What does nature mean to you? How are we connected to nature?

Supply each student with a sticky note and make sure there are pens to share.

Go for a walk around a nearby forest or natural area. On the walk, draw attention to a cool tree, small stream, or great natural place. Express joy and interest toward it. Bring up some ideas about what that natural place does for us. (Ex. The tree gives me shade, acts as a home for birds, cleans the air and the leaves help to keep the soil healthy.)

Send students on an individual walkabout (not in groups) around the natural area to observe nature around them. If the setting doesn't allow for them to wander individually, then tell them that they cannot talk to one another. Ask them to think about what they hear, smell, see, and touch. Have them come up with one idea of something that nature does for us, using their surroundings for inspiration. During the walk, have students write one word or phrase on their sticky note that describes one thing that nature does for us. Make sure that these answers are kept secret until the end of the walk. At the end of the walk, have students stand in a circle and show the answers written on their sticky notes (by sticking them to their forehead). Have a class discussion about the answers.

Explain that a “natural resource” is what we call anything that is found in nature and used by humans. (Use the “natural resource card” for a visual.) Play a guessing game with the “things that nature gives us” cards to discuss some examples of natural resources. Now ask rhetorically, “Do you think that nature can keep giving us these things forever? Does nature have a limit to the amount that it can give us?”

Indoor Option: Have students watch the provided “nature slideshow”. As the slideshow rotates through pictures, ask the students...

What do all of the pictures have in common? What is nature? How does nature make you feel? If it helps, they can share experiences they've had in nature. What are some things that nature gives us/does for us? Do we provide anything for nature?

Explain that the term natural resource is used to describe anything that is found in nature and used by humans. Have students try to guess all of the items on the provided natural resource cards. Now ask: do you think that nature can keep giving us these things forever? Does nature have a limit to the amount that it can give us?



Part B. Racing for Resources

In this activity, students become aware that they can make choices to make nature healthy.

Older Students: Divide the class into two teams (teams can choose a team name related to nature). Make two large circles on the ground with the pieces of rope and have all the students from each team step into their circle. The game is organized as a competition between team A and team B.

Tell students that the circles represent their planet Earth and all the natural resources. Explain that depending on the action on the card drawn, their Earth and the amount of nature on their Earth will either shrink or grow.

Start drawing from the Racing for Resources cards. Each time a card is drawn, have the students name why their Earth is growing (based on the action on the card) or why their Earth is shrinking. Ex. "our Earth will grow because we are not using as much energy."

The game is over when an "Earth" shrinks so much that all students from one team no longer fit.

Younger Students: Place a number of hula hoops on the ground (approx. one hoop for every 3 students). Hula hoops represent the natural resources available for all of the Earth's inhabitants.

Explain to students that they are all of the Earth's inhabitants and they can choose what they want to be (human, animal, plant, etc.). The object of the game is for them to get into the hula hoop before anyone else. Only three students can be in any one hula hoop. Tell them that the hula hoops are their homes, with everything they need to survive inside. They must make it to a hula hoop before all of the room is gone. If they don't make it, they don't survive (they must sit out).

Start the game. Once they are safely in their habitats, ask: "did everyone make it safely? Isn't the Earth a wonderful place? Lots of space and room for everyone!"

Now, draw a Racing for Resources card and read it to them. It'll be an example of a human action that depletes natural resources or is bad for the Earth. Once you have read the card, remove a hula hoop. Play again, and this time some students will not find room. They will sit off. Tell them, "Many animals have lost their habitats and cannot survive."

Continue the game in the same way until all cards have been read, removing a hula hoop each time.

When all cards have been read, ask students how it feels when habitats keep disappearing. Ask them to think of things that they might do to stop this from happening. Add a hoop with each idea.



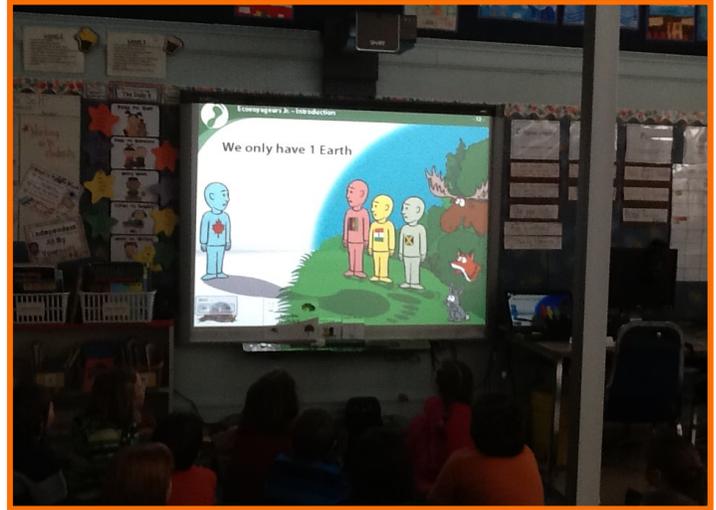
Students in a "shrinking earth"
Photo: Chrissy Chabot

Part D. The Lorax

Read "The Lorax" by Dr. Suess.

Discussion questions:

What are some examples of "natural resources" in the book? What happened in the book that caused so much harm? What is the difference between a need and a want? Did people in the book really need the Thneeds? Can you think of anything that we buy that we don't really need?



Students watching "Our Environmental Footprint" Photo: Chrissy Chabot

Part E. Footprint Wrap-Up: Count Yourself In!

If your class is participating in the Environmental Footprint Tree activity, then introduce the tree to students.

Create a tree out of Bristol board that can go on the wall of the classroom. The five branches of the tree can represent the 5 categories of the environmental footprint. Each time you teach an environmental footprint lesson, have the students brainstorm ways that they can shrink their footprint in that category. For example, when teaching the water lesson, have students come up with 5 ways to shrink their water footprint.

Each time a student does an action to shrink their footprint, have them write their action on a paper leaf and put it on the tree (ex. if they turn off the tap when they brush their teeth, put a leaf on the "water" branch. When the tree is full, reward the class with a celebration (local food party or a hike in the nearby forest.)



Extension Activities

Integrating Language Arts

Ask students to create a journal response to the question, "What is nature?" Encourage them to include their past experiences.

Discuss how items in the classroom are connected to nature. Which natural resources were used to make these items?

Community/Home Engagement Activities

Encourage students to invite their families to go on nature walks.

Have families take an online environmental footprint test.

Online Footprint Calculators for Kids:

<http://calc.zerofootprint.net/youth/> to create a login and take a personal footprint test.

<http://ecoguru.panda.org/#/intro> - Tells you how many Earth's would be needed to support the world if everyone lived the way you do. Also shows the world average, North American average and east/south east Asian average.