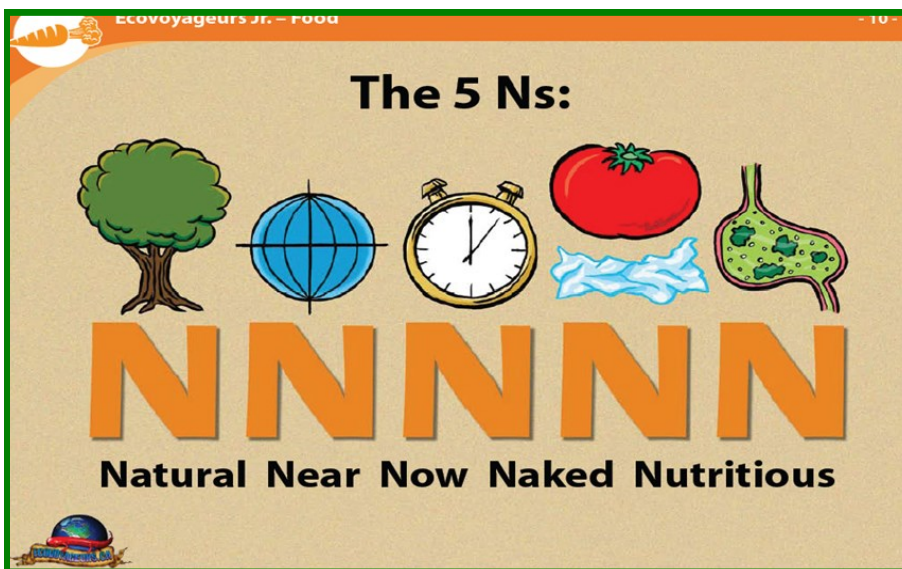


Our Environmental Footprint

Talking about Food



Description of Lesson

Every time we make a choice in relation to our food consumption, we have an effect on our environmental footprint. There are some simple N words to remember to reduce our impact-near, natural, naked, and now. This lesson will make students look critically at their food consumption in relation to its impact on the environment.

Connect with the Georgian Bay Biosphere

www.gbbr.ca
(705) 774-0978
education@gbbr.ca

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materials are the property of GBB
unless otherwise stated.

Georgian Bay Biosphere: Lesson in a Backpack Program



GEORGIAN BAY
BIOSPHERE
MNIDOO GAMII
Spirit of the Water

At a Glance

Grade Level: 1 and 2

Learning Environment:
Indoor Classroom

Prep Time: 15 minutes

Length of Lesson: 1 hour

Key Vocabulary: Food miles, local

Staffing: 1 educator

Materials:

Food footprint video
Matching items & pictures: apple,
apple sauce, carrots, baby carrots,
chips, potato, juice box, oranges
Fact cards
Laminated tomato (one red, one
green), Script cards for characters,
Props for characters (2 hats,
suspenders, tie, purse, sunglasses),
Name tags for characters
"seasonal foods" slideshow
cards representing the 4 seasons
Environmental Footprint Tree

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

Groupings: Whole class, and Small
groups of 2 or 3

Teaching/Learning Strategies:
Hands-on learning, role-playing,
games.

Lesson Outline

TIME	ACTIVITY	LOCATION	MATERIALS
10 min.	Remembering our footprints on nature	Classroom	Food footprint video
15 min.	Focusing on NAKED: <i>Matching Game</i>	Classroom	Matching items & pictures: apple, apple sauce, carrots, baby carrots, chips, potato, juice box, oranges Fact cards
10 min.	Focusing on NEAR: <i>The Travelling Tomato Game</i>	Classroom	Laminated tomato (one red, one green), Script cards for characters, Props for characters (2 hats, suspenders, tie, purse, sunglasses), Name tags for characters
15 min.	Focusing on NOW: <i>The Seasonal Foods Guessing Game</i>	Classroom	Seasonal Foods slideshow cards representing the 4 seasons
5 min.	Count yourself in: Shrink your food	Classroom	Environmental Footprint Tree

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 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.
- 3.6 Identify what living things provide for other living things.

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

Food is an important part of the “environmental footprint” calculation. We need food to stay alive. Canadians are lucky; today we can go to the grocery store and choose from hundreds of different foods, from all over the world. Every time we make a choice, we have an effect on our environmental footprint. So how do we shrink our food footprint? There are some simple N words to remember-near, natural, naked, and now.



NEAR

Depending on where your food is produced, there can be a big price to pay. By choosing *locally* grown food, you can help nature by reducing fossil fuel use and air pollution, including greenhouse gas emissions. As you can imagine, food that comes from farther away requires more transportation to get here, which causes air pollution and uses non-renewable fuel. Therefore, the closer our food comes from, the smaller our environmental footprint will be. **Food-miles** refers to how far food has travelled. An average meal in Canada travels about 2,400 km from the farm to the table. Imagine how much air pollution this journey creates from burning fossil fuels.

Sometimes, **harmful chemicals** are added to the food so it won't go moldy or rotten on its journey. Also, local farms tend to use **less fertilizer or chemicals**, to help with plant growth, than large-scale produce companies.

NATURAL

How your food is produced can also have an effect on the size of your environmental footprint. *Natural* foods look like they do when you dig them up out of the ground, pull them off a tree or pick them off a plant. They haven't been changed. When we add things to food, or change them from the way they are naturally, we are using energy and sometimes creating garbage. And, usually when we change food it makes it less healthy.

NAKED

Air pollution and fossil fuels are not the only concerns when it comes to buying distant food; another problem is the way food is **packaged**. The excessive packaging uses more energy and creates more waste. Because producers don't want food to go bad, they will pack it unripe so it will be ready when it gets to you. That can cause the fruit or veggie to be **less nutritious** than if it was picked in our area.

NOW

Foods that are grown “in season” are fresher, tastier and more nutritious than out-of-season foods that have been force grown, because they have been left to ripen on the plant. Fruit and veggies begin to lose nutritional value the moment they are picked, and often out-of-season products are picked six or more weeks before you buy them in the supermarket. Out of season, force-grown fruit and veggies are produced in artificial conditions that require more fertilizers and can result in flavourless produce that are less resistant to diseases. Finally, out-of-season produce is often flown long distances from around the world, increasing damage to the environment.

Teaching and Learning

Part A. Remembering our Footprints on Nature

Play the provided “Food Footprint” Video for the class and tell them that in this lesson we’ll be talking about the food part of our environmental footprint.

Part B. Focusing on NAKED: A Matching Game

Make sure that the class has a good understanding of what “naked” food is (food without packaging) and why this type is better for the environment (less garbage created.)

Randomly place the “matching items” on the floor and have the class sit in a circle around them. Tell the class that each item in the circle has a match-one item in each pair produces more waste and one produces less. Have students volunteer to choose matching items, and put them in the appropriate pile (more wasteful/less wasteful). Have them explain why they made their choice. If you wish, place the fact cards below certain items so that they are read once they are uncovered.

Wasteful Item	Less Wasteful Match
Chip bag	Potato
Apple Sauce	Apple
Juice Box	Freshly squeezed Orange
Mini Carrots	Large carrots bound by their greens

This activity is not meant to teach kids that eating apple sauce and mini carrots is bad. It is simply meant to make them more aware of the choices they can make to reduce the amount of waste they create. There are alternatives available to wasteful food products.

Part C. Focusing on NEAR: The Travelling Tomato Game

Discuss with the class: *Today we have an unlimited choice of foods! Nowadays, food comes from very far away, at least 1 province over. It gets shipped to us on trucks, ships, and planes. Many foods come from places that are warm enough that food can be grown all year-unlike here which gets too cold to grow food in the winter. For example, if you were to look at a tomato at the No Frills or Sobeys in town, you might find that it comes from Mexico, thousands of kilometers away!*

The class will be learning about all the steps in the life of a tomato that comes from Mexico. Assign a role to six students in the class; Mexican Farmer, Company Owner, Truck Driver, Warehouse Owner, Grocery Store Owner, Consumer in Ontario, and Local Organic Farmer.

Have these students stand where everyone can see them, with the first 3 at the front of the class (or what will be the beginning of the tomato journey) and the last 3 at the back (or what will be the end of the tomato journey). Dress them up with their character props and give them script cards and name tags. All students in the middle will be transporters.



The student with the 'Mexican Farmer' role card is the first person in the tomato journey. This person gets the green tomato cut-out, reads their script, and passes the tomato to the Company Owner, who will read their card and pass the tomato to the Truck Driver.

After the Truck Driver has read his or her card, the tomato should be passed to every student in the class. Each time the tomato is passed into new hands, have the class add another 100 km to the total km travelled by the tomato. Students must say the distance travelled by the tomato when it reaches them.

Keep passing the green tomato up and down the rows until it reaches the Warehouse Owner. This student takes the tomato, stands up, and puts the tomato on a desk at the front of the classroom and follows the directions on their card. This is when the teacher exchanges the green tomato with a red one. Warehouse Owner passes red tomato to Grocery Store Owner.

The journey ends when the Consumer reads their card to the class.

Discuss...How far did this tomato travel, according to our game? Introduce the term food miles. Every time we drive we are releasing pollution into the air that adds to global warming. As well, every time we drive we are using gas in our cars. Gas comes from the ground...we have to dig for it. When we use it we can never get it back. (Fossil fuels are limited resources). Therefore, the further our food is transported to get to us, the larger our environmental footprint will be!

Other reasons to buy locally: For fruit and veggies, the longer food has to travel the less nutritious it becomes, and the less tasty! Buying locally supports our local farmers.

The Local Organic Farmer begins the exercise with a red tomato and passes it to the Consumer. Part two is short because the Farmer lives very close and sells directly to the consumer. The farmer also only picks his tomatoes when they are ripe for harvest.

Discuss: Does this make it easier to understand why local food is better for the environment? Has anyone in the class been to a local farmers market or eaten local food?

Making a Cultural Connection

Traditionally, the Anishinaabe (Ojibwe) grew their own food. They planted corn, squash, and potatoes. They collected strawberries, blueberries, raspberries, and blackberries and harvested *manoomin* (wild rice).

The photo to the right shows an Anishinabek method of transporting our harvest out of the bush. It is a basswood rope, woven and braided to tie around the load, in this case rolled birch (with ferns inside to help keep from drying out), then the strap is placed around the front of the forehead of the person carrying the *wiigwaas*. This method lessens the stress on your back, as the materials sit comfortably in your lower back. This also makes it easier to carry materials for a longer distance!



Information from: <https://ojibwenativeamericans.weebly.com/food.html>

Photo Credit: Kyla Judge

Part D. Focusing on NOW: The Seasonal Foods Guessing Game

Play the Seasonal Foods slideshow. Use this slideshow to discuss what types of foods grow in our community. Each time you move to a new slide, have the students guess what season the food is harvested in.

After the video, have the class move to a larger area. Use pictures to represent each season, and mark out 4 areas to represent spring, winter, summer and fall.

Have students walk around the perimeter of the 4 areas (as in the game musical chairs). Call out the name of a fruit or vegetable. The students jump into the area representing the season in which it is harvested. Students who go to the wrong season are eliminated from the game.

This could also be played at their desks by making an action to represent each season and having students do that action when a fruit is called.

Part E. Count Yourself In! Shrink your Food Footprint

List 3 things that students can do to shrink their food footprint:

- choose to buy a food with less wrapping (naked!)
- choose to buy a fruit or veggie that is in season (now!)
- choose to buy a food that was grown or made locally (near!)

Each time students do one of the listed things, encourage them to write it down on a leaf and put it on the environmental footprint tree.



Extension Activities

Field Trip Ideas

Gord Cole, owner and operator of Aqua-Cage Fisheries Ltd. (a sustainable fish farm off Parry Island) has offered to give talks in classrooms or give a tour of the farm to students. Email: aquacage@vianet.ca

The Ward family has done educational tours of Middle River Farm using the Ontario Curriculum. They would be happy to help you if you were interested in this tour! Email: middleriverfarm@hotmail.com

In the spring (early May is best) contact Little Gardens in Parry Sound to organize a field trip to their greenhouse. You'll find fruit trees, berries, veggies, etc. beginning to grow! 705-746-5311.

Head to the local grocery store and make note of where certain items came from in the world (each student could be assigned one food item). Back in the classroom, look at a world map to find that location.

Outdoor Opportunity

Go for a walk around your school or neighbourhood in the spring to look for all signs of food growth (apple trees, gardens, etc.) Also, look for places where food could be grown.

Follow-Up Activities

Ask students to help you create a list on the board of food that is grown within their province. Have the students create a menu for a restaurant using only local ingredients.

Make a list of produce and where it is from, and put it on the blackboard. Have students cut out magazine pictures of fruit and vegetables, and glue them onto a world map.

Have students calculate how many kilometers the food for a fruit salad or for a garden salad had to travel before it got to their grocery store.

Show the class examples of local food vendors/farmers around Parry Sound. Visit gbbr.ca/food to see a list of local producers. Ask students to write a journal article about what type of farm they would like to own, or food they would like to produce.

Additional Resources

Visit www.usc-canada.org/resources/for-educators for educational resources where you'll find interactive educational activities, a list of food films, movie discussion sheets, short films, an interactive online seed map, and more!

Personal Action

What can you, students, and families do to help?

- 1) Start **growing food** in your backyard. If you don't have a garden, you can join the Parry Sound **community garden**. For information about community gardens in Parry Sound, contact Rick Harrington at rharrington@clps.ca OR go to the Facebook page, "Parry Sound Community Garden". Or, try the **Good Food Box** from the Salvation Army Food Bank, which provides local residents with a monthly supply of fruit and veggies, often from local suppliers. To join, stop by their office at 61 Gibson Street, or call 705-746-5391 ext. 222.
- 2) When possible, try to buy food that is organic, or grown more naturally.
- 3) Buy your food from a local organic farmer. Your family can go to farmers markets or can ask your grocer to bring in more local and organic produce.
- 4) Every time you buy fresh fruits or veggies, take a moment to consider how and where it was grown. Many grocers now post where the individual produce they sell comes from. When your family buys food, try to choose food that has travelled the shortest distance.
- 5) Eat at restaurants that buy as much of their ingredients as possible from local, organic producers. Don't be afraid to ask where your food comes from.
- 6) Eat foods that are in season in the area where you live. For a list of seasonal foods in Ontario, see next page.

Source: "Connecting with Nature", David Suzuki Foundation

Foodland Ontario Availability Guide (Seasonal veggies and fruit in Ontario)

Spring: asparagus, beets, cabbage, carrots, mushrooms, onions, parsnips, radishes, rutabaga, spinach, sprouts, squash and sweet potatoes, apples, rhubarb, and strawberries.

Summer: artichoke, Asian vegetables, beans (green or wax), beets, bok choy, broccoli, cabbage, carrots, cauliflower, celery, corn, cucumber, eggplant, garlics, leeks, lettuce, mushrooms, onions, parsnips, peas (green or snow), peppers, potatoes, radishes, spinach, sprouts, squash, sweet potato, tomatoes, zucchini, apples, apricots, blueberries, cherries, currants, gooseberries, grapes, muskmelon, nectarines, peaches, pears, plums, raspberries, strawberries, and watermelon.

Fall: artichoke, Asian veggies, beans, beets, bok choy, broccoli, Brussel sprouts, cabbage, carrots, cauliflower, celery, corn, cucumber, eggplant, garlic, leeks, lettuce, mushrooms, onions, parsnips, peas (snow), peppers, potatoes, radishes, rutabaga, spinach, sprouts, squash, sweet potatoes, tomatoes, zucchini, apples, blueberries, crabapples, cranberries, grapes, muskmelon, nectarines, peaches, pears, plums, raspberries, strawberries, watermelon.

Winter: beets, cabbage, carrots, garlic, leeks, mushrooms, onion, parsnips, potatoes, rutabaga, sprouts, squash, apples, pears

Source: Foodland Ontario Availability Guide

Part B. Matching Game Food Item Pictures



Part B. Matching Game Food Fact Cards

More than half of the garbage that we throw away is from packaging! (65%)

Each person in North America creates, on average, 4.6 pounds of waste each day. That equals 230 million tonnes of garbage every year!

The juice box became popular around 1980. Today, more than 25% of all the juice we drink comes in a box (and most cannot be recycled).

Plastic bags and other plastic garbage end up in the ocean where they kill as many as 1 million sea creatures a year!

Sarah: Grocery Store
Owner



Sam: Consumer



Sarah: Grocery Store Owner



Sam: Consumer



Juan: The boss of Carlos.



Carlos: a farmer from
Mexico



Steve: Local Farmer



Part C. The Travelling Tomato Script Cards

#1: Mexican Farmer (Carlos)

“Look at all these green tomatoes. I have to pick them today! They are not ripe yet, but I have to pick them anyway. But first I need to spray them with pesticides to keep the bugs away.” (Pass to student with card #2)

#2: Boss (Juan)

“Thank you for your tomatoes, Carlos. Keep working hard, we have lots of deliveries to make. These tomatoes have to be in Canada by next week.”

(Pass to student with card #3)

#3: Truck Driver (Annie)

“It is a long drive to Canada! These tomatoes have thousands of kilometers to travel.”

(Pass to student with card #4)

#4: Warehouse Owner (Jesse)

“These tomatoes are still green. Before I can deliver them I need to gas them for 24 hours to help them ripen.”

(Pass to student with card #5)

#5: Grocery Store Owner (Sarah)

“Wow, these tomatoes have traveled more than I have! It seems strange to buy a product from far away that we could have grown here in Canada.”

(Pass to student with card #6)

#6: Consumer (Sam)

"Here I am at the grocery store. I need to find some tomatoes to make spaghetti sauce. Here is one... it is kind of hard and from far away. But it is the only tomato that is available."

#1: Local Organic Farmer (Steve)

PART 2

"I've been taking care of this tomato since I planted it in the spring. I didn't use any pesticides because my farm is organic. Now it is red and ripe to pick. Tomorrow I'll take it to the local market and sell it to someone from the community." (Pass to student with card #2)

#2: Consumer (Sam)

PART 2

"I love coming to the farmer's market. Look at all this beautiful produce! Hi Steve, your tomatoes look great. I think I'll buy some for lunch. Thank you!"