

<b>Title: The Ecological Footprint</b>	<b>Grade Level(s): 3-4</b>	<b>Time/Date:</b>
<b>School:</b>	<b>Teacher:</b>	
<b>Directions to school, class:</b>		
<b>Contact Info:</b>		
Vocabulary: Words & Concepts your class may be learning, look these up yourself too!		
<b>Ecological</b> - the relationship/connection between all living things and their environment		
<b>Sustainability</b> - achieving satisfying lives for everyone without hurting nature—now and in the future.		
Materials and Equipment: List these before and while you plan and revise so you're prepared.		
Black board Someone Else's Shoes Activity Sheet (download from website) Worksheet to calculate footprint for the teacher (download from website)		
What is your class accomplishing?: Learning & Activity Goals, Objectives		
<ul style="list-style-type: none"> <li>• <b>Understand what the ecological footprint is and describe the 5 categories that contribute to it.</b></li> <li>• <b>Make the connection between lifestyle and size of the ecological footprint</b></li> <li>• <b>Identify and execute ways to reduce their own ecological footprint</b></li> <li>• <b>Understand that the Earth has its limitations to sustain humans</b></li> </ul>		

**PROCEDURE**

The Spark: Introductions, Demonstrations, Show and Tell, Topic Intro (Break the ice!) ~5-10min

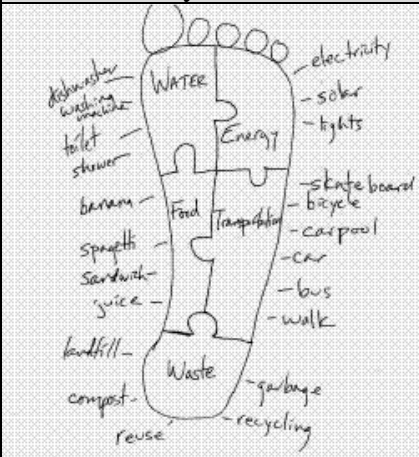
*Hello everyone, Today we're talking about the ecological footprint. Write 'ecological footprint' on the board and draw the outline of a footprint next to it (see picture). As humans we depend on the Earth. Earth provides us with food, air, water, energy. All our actions – eating, drinking driving, switching the light on, and buying clothes- make an impression on the earth; we use a part of nature. The ecological footprint is a way to describe the human impact on the earth; the imprint that we leave when we use nature. Our ecological footprint can be measured. Has anyone measured his/her ecological footprint before?*

The ecological footprint is: (write on the board) **The amount of productive land needed to produce all the things we use (food, clothing, houses, etc.) and to absorb the waste we produce in our every day lives.**

Brainstorming, Getting ideas, Connecting ideas (assess their knowledge!) ~10-20min

Explain that only 16% of the Earth is useable land (70% is water and the rest is too cold, dry, high) and that a lot of our food, clothes and other products are made on land in other countries. *With how many people do we have to share this land? (6 billion and rising). What happens if we use more than our share of land? (then someone else has less) Is this fair?*

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play(Pt. II or Cont...) ~10-30mins



*We can divide the ecological footprint in 5 categories that contribute to our ecological footprint. In what 5 ways do humans leave an impact on the Earth? Write the answers on the board. End up with these 5 categories: **water, food, energy, transportation and waste**. Divide the footprint outline on the board in 5 parts and label each part (use picture as example). *These 5 categories represent the amount of nature that we use. The Earth's resources are limited, and if we don't take care of it carefully they will run out.**

*All the things we do in our every day lives have an impact on the Earth. Some things are positive and other things are negative. All the things we do can be placed in the 5 categories we mentioned before. Point at the categories on the board and repeat them. What are some things you did this morning when you got up? What are some other things we do in our everyday lives? Make notes*

next to the appropriate category in the footprint drawing (use picture as example). Ask the students in what category their answers fit (e.g. I biked to school- transportation). Once the footprint is complete ask the class what things are positive for the ecological footprint (make it smaller) and which things are negative (make it bigger). Explain that without the positive actions the footprint would be even bigger.

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play(Pt. II or Cont...) ~10-30mins

Draw a footprint and write 1.9ha in it. *1.9ha is the amount of land each person in the world can use, without hurting the environment. How many hectares does the average person **actually** use? Do you think it's higher or lower than the 1.9ha we should be using to keep the planet healthy?* Draw a bigger footprint on the board and write 2.3ha in it. *We are using 2.3 ha each, that means that on average everybody uses 0.4 ha too much. How is this possible? We overuse the land. We use more than what is healthy for the Earth. We consume more resources than nature can restore and create more wastes than nature can recycle. At this point humans start to harm nature, reducing the resources on which we depend.*

*How many hectares does the average Canadian use? Accept a few guesses, and then get a volunteer to put the real figure (8.8ha) up on the board, with a big footprint. If the average per person is 2.3 ha, and Canadians use 8.8 ha each, what does that mean? It means that other people in other countries can use less than they would actually need! In India people can only use 0.5ha per person to live from (draw a small footprint). This is a tiny amount of land to get all the things you need from. Many people that live here and in other poor countries don't have enough land to get everything they need to survive. Emphasize the difference between Canadian footprints and Indian footprints. Get some reactions from the class. Is it fair that we use so much more than what is healthy for the Earth?*

*The goal of the ecological footprint is to make you realize that you're probably living a lifestyle that is unfair to others. Who is your current lifestyle being unfair to? Write on the board:*

**1. To Other Plants and Animals**

**2. To the Future generations**

**3. To Other People**  
 Explain: 1. *Humans are not alone on this planet—we share it with at least 10 million other species. Unfortunately, species around the world, such as tigers and frogs are in danger of dying out because of human activities.* 2. *To future generations. If we use all Earth's resources now, then there will be nothing left for our children and other generations.* 3. *Footprints of nations vary a great deal... many countries don't have access to the resources they need, and their footprints are tiny while our footprints are big.*

*Is one of these 3 factors more important than another? Is it more important to be fair to other nations than other species, or should we be fair to people and animals now before we care about what will happen in the future? Why or why not?*

There is no "right" answer to this question, hopefully responses will focus on trying to balance all three types of fairness, or that supporting one type may promote another or saying they all have value and can't be compared.

Activity, Game, Exercise, Debate, Puzzles, Problem Solving, Role Play(Pt. II or Cont...) ~10-30mins

How can we reduce our footprint? Let the students write down solutions for the following activities in each category (write the table on the board to help them focus).

Water	Shower? Yard? Washing machine? Drips? Teeth brushing, Dishwasher?
Energy	Lights? Appliances? Computer?
Food	Meat? Local? Composting? Processed?
Transportation	Car? Public transportation? Carpooling? Fuel efficient?
Garbage	What is thrown out vs. recycled/repurposed? Excess packaging.
Home	Size? In a city? Heated? Duplex? Apartment?

Contingency, Plan B, extra game or activity (Back up plan) ~5-10mins

1. Play the game Someone Else's Shoes Activity (additional material on website)
2. Give the teacher a form for the ecological footprint, to copy and fill out with the class after your lesson (3 day project). If you have time you can explain the exercise already during your lesson, or let the class estimate how big their footprint is, using the last 3 days.

Review, Conclusion and steps towards continued action ~5-10mins

*You have just learned about ecological footprints. So now what are you going to do differently when you go home, or when you are here in your classroom? Do you think what you have learned today is important? Why?* Encourage the class to calculate their footprint, change some things in their lives and then re-calculate it!

References

<http://www.myfootprint.org/>

Great work ecoMentor! After use of Lesson Plan revise, add ideas and repeat!