



# Calculating and Interpreting Your Ecological Footprint

## MATERIALS NEEDED

- Computers with internet access

## TIME NEEDED:

- 1-3 class periods

## CURRICULUM CONNECTIONS:

Issues in Canadian Geography, Grade 9  
Academic CGC1D

- C1.4 analyse the roles and responsibilities of individuals in promoting the sustainable use of resources

Issues in Canadian Geography, Grade 9  
Applied CGC1P

- A1.4 interpret and analyse data and information relevant to their investigations, using various tools, strategies, and approaches appropriate for geographic inquiry
- C1.3 analyse their personal use of natural resources
- E1.1 use a variety of measurements to compare the impact on the natural environment of people in Canada and people in other countries

## WHAT IS AN ECOLOGICAL FOOTPRINT?

Simply put, an ecological footprint measures an individual's impact on the environment. It takes into consideration our need for food, shelter, mobility, goods, and services and calculates the amount of biologically productive area on Earth required to support these demands. The average person in Ontario would need 3.58 planet Earths to generate the resources needed to support their demands on the environment. This is our ecological footprint – 3.58 Earths.

## WHAT IS BIOCAPACITY?

Biological capacity (or biocapacity) is an estimate of the productivity of an ecosystem in terms of biological materials and functions useful for humans (e.g. food production, carbon absorption, etc.). The Earth's biocapacity is currently 2 hectares for every person on Earth. A typical Canadian, however, requires 8.8 global hectares to support their demands on the environment.

## CALCULATING YOUR ECOLOGICAL FOOTPRINT:

1. Visit the Footprint Calculator, from the Global Footprint Network, at <http://www.footprintcalculator.org/> You will need to sign up (for free) in order to access the calculator and its accompanying resources.
2. Answer the questions about your life as best you can. The calculator takes approximately ten to fifteen minutes to complete.



## INTERPRETING YOUR ECOLOGICAL FOOTPRINT:

### ACTIVITY 1: LOOKING AT THE DATA

- If the average Ontarian needs 3.58 Earths and 8.8 global hectares to meet our demands, how did your results compare to the averages? Can you determine why your data may have been higher or lower than average? Have everyone in the class compare results (number of Earths and global hectares). What factors could explain the variations in the results?
- What steps could you take to reduce your ecological footprint? Brainstorm three-five ideas, and see if they made a difference by recalculating your ecological footprint. Did it have the impact you thought it would? Why or why not? Take it one step further and try these changes for a week. Would you consider making these changes permanent? Why or why not?

- **For discussion:** The results from ecological footprint calculators are almost always negative. For some people, this can lead to a sense of futility and a sense of ‘why even bother?’ How can we use the discouraging results from the ecological footprint to empower people to make positive and lasting change?

### ACTIVITY 2: CHANGING THE METAPHOR

- The ecological footprint uses the metaphor of a footprint to describe our impact on the Earth. Read the article “Is a Footprint the Right Metaphor for Ecological Impact” by Laura Jane Martin, Scientific American April 2, 2014, available at <https://blogs.scientificamerican.com/guest-blog/is-a-footprint-the-right-metaphor-for-ecological-impact/>

- Do you agree with the idea that a handprint is a better metaphor than a footprint? Why or why not?

- Create your own metaphor to describe the impact that our resource use is having on the environment. Does your metaphor rely on positive or negative messaging?

### ACTIVITY 3: HOLD A DEBATE

- Hold a class debate about issues of sustainability. Debate topics might include:

1. In order to lower Ontario’s footprint, the Ontario government needs to impose environmental regulations upon the entire province;
2. Countries with high ecological footprints should look to countries with low ecological footprints as models of how to live sustainably;
3. We will be able to lower our ecological footprint with the use of future technology and do not need to worry about our current resource use

