Eco-Footprint Lesson Plan

Resources:
- Large footprints hung on wall
- Inflatable earth
- Country names cards (i.e. Canada) and footprint size cards (i.e. 7.7 ha)
- Magnets
- Transparency of footprint calculator

1. Ask Students:
"Have you ever heard of the ecological footprint?" "What is it?"

2. Tell Students (if you need to):
    An eco-footprint is a measure of our population's demand on nature. It looks at the land and water needed to make all the products and resources used by our population, and to process all of our wastes. It measures our energy consumption, transportation, food usage and housing.

3. Go into as much or little detail about the following calculation of ecological footprint. It helps to have an inflatable earth for students to visualize how the footprint is calculated:

Two scientists in British Columbia thought it would be interesting to find out how many resources (land, water, air) are available to each person. So, they calculated the usable area of water and earth:

Area of earth and water = 13.8 B Ha of usable land, water, air

And divided that by the earth's population (you can ask students what the current population is)

Population on Earth = 6.7 Billion people

They divided the available resources by the population, and found out that there are:

2.8 Ha of usable resources available per person.

BUT! This doesn't account for space set aside for parks and wildlife (12%). If we factor in space for other species,

There is 2.0 Ha of resources per person. This is about the size of 2.5 football fields

With 1 earth, each person should use about 2 Ha of resources per person.

Unfortunately, it's not easy for all of earth's citizens to use minimal resources. Some countries use mostly cars, when others use mostly bicycles. Some countries use very little water; others may use water wastefully.

The scientists then calculated the resources that people around the world use and found that on average, **we are using 2.8 Ha per person, which would mean we'd need 1.5 earths.**

4. Use the big footprints for the next part of the exercise. Place the global average card and the 2.8ha card on the second-smallest foot. Before you place the countries on the footprints, ask students to guess which footprint would represent each country (i.e. USA – Big footprint; India little). Ask students why they think that is so. Save the Calgary cards for the last placement, as students generally think we would have a small footprint, and they are shocked to learn that Calgary's footprint is larger than the Canadian or US average. You may need to explain that the Canadian footprint is an average of all the provinces and cities – some will be larger than average, some will be smaller. You can also ask them why they think some footprints are larger than others (i.e. Canada vs. UK)

India has one the second-largest population in the world: over 1 Billion people. However, their eco-footprint is one of the smallest in the world. They use 0.8 Ha per person. <1 earth

France: 60 Million people. Use 5.26 Ha per person. 2.5 earths

United Kingdom: 60 Million people. 6 Ha per person. 3 earths

Canada: 32 Million people. Use 7.7 Ha per person. 4 earths

United States: 295 Million people. Use 9.5 Ha per person. 5 earths

Calgary: 922 000 people. Use 9.86 Ha per person. 5 earths. This is the largest footprint in Canada.

5. Ask students if they have had a chance to calculate their ecological footprints, and would they like to (so far, the answer has always been yes). Using the transparency, go through the calculator, marking a checkmark in the column that receives the most common response; read each question aloud, and have students raise their hand for the answer that represents them. Once each question has been asked, add up the checkmarks for each column, and then add the sum of the columns to arrive at a small, medium or large footprint. Students are generally shocked to see how large their footprints are. Ask students to brainstorm ways they could shrink their footprints.