Science 9

Carbon Footprint

Name:
Date:
Block:

Background

A carbon footprint is the carbon dioxide gas (CO_2) that is left behind after using technology and resources. This results in the emission of greenhouse gases. Excess greenhouse gases can result in climate change and global warming. Climate change occurs when there is a long term change to the weather patterns on our planet. This can be caused when excess greenhouse gasses are released into the atmosphere through the burning of fossil fuels, deforestation, using up our natural resources, etc.

Some common ways we increase our carbon footprint is through gasoline in our cars, using electricity in our homes, etc. Through making small changes in our lifestyle, we can reduce the size of our carbon footprint.

Introduction

How do you think you contribute to climate change?

Is climate change something that will happen far in the future or are we seeing it now? Explain your reasoning.

Data

1. Go onto the website: http://www.footprintcalculator.org/
2. Follow the prompts given in order to calculate your own personal overshoot period, ecological footprint, and carbon footprint. Try to be as accurate and honest as possible.

Personal Earth Overshoot Day: _____

If everyone lived like you, we would need: _____ Earths

Your ecological footprint: _____

Your carbon footprint (in tonnes per year): _____

Questions
1. What is an Earth Overshoot Day?

2. What is the Earth Overshoot Day for the year 2020?

3. What happens once we pass Earth's Overshoot Day for the year?

4. What is an ecological footprint?

5. Click on the 'Explore your Data' tab. How does your result compare with the rest of Canada?

6. What is biocapacity?

7. Compare the biocapacity trend for different countries
    a. What do you notice about the biocapacity per person number as the years go on?

    b. What impact does this have on the Earth and on us?

8. What do the red and green colours represent for each country?

Reflection
1. What were you surprised by in this activity?

2. What changes do you want to make in your life to reduce your carbon and ecological footprint? Brainstorm and describe **two** ways that you can try to reduce your carbon footprint.

Extension

1. Planting trees remains one of the cheapest, most effective means of drawing excess CO_2 from the atmosphere. On average, a tree can absorb 12 kg of CO_2 per year. How many trees would you need to plant to neutralize your own carbon footprint? (Hint: change the amount of tonnes into kilograms by multiplying your number by 1000; 1 tonne = 1000 kg)

2. If everyone continued their use of Earth's resources without making changes, what impact do you think that would make on the Earth?

3. How can we look at climate change as First Peoples do – with an understanding that everything in the universe is connected (what impact do you think climate change may have on Earth's 4 spheres)?

4. What can you do to help your community make positive changes in order to reduce the amount of carbon emissions into our atmosphere?