

MEASURING YOUR CARBON FOOTPRINT

Getting Started

BACKGROUND

What is a carbon footprint? Like the footprints you leave behind in sand, your carbon footprint is the carbon dioxide (CO₂) you leave behind after using technology that results in the emission of greenhouse gases. Whether it's from the gasoline in our cars or the electricity that powers our homes and schools, our carbon footprints are stampeding through the atmosphere. We can reduce the size of our footprints by making changes to our lifestyle, consumer choices, and investing in low-carbon technologies such as wind, solar, and geothermal power. The carbon footprint is a way to roughly measure the impact of a person's lifestyle on the environment.

Materials

- Paper for foot templates
- Pencils, pencil crayons, and/or markers
- Optional: chart paper, chalkboard
- Optional: computer and design application

Curriculum Connections

There are many ways to incorporate this activity into classroom lessons for a range of grades and subject matter. Consider integrating the project into one of the following subject areas: Canadian and World Studies, Science, Science and Technology, and the Arts.

LEARNING ACTIVITY

Ignite

Get students thinking about their carbon footprint. Review important concepts listed in the Climate Change 101 section (page 4).

Guiding questions for students:

- What is climate change? *Climate change is long-term changes to weather patterns.*
- What causes climate change? *Climate change occurs when increased levels of greenhouse gases are released into the atmosphere.*
- How do humans contribute to climate change? *Humans contribute to climate change primarily by burning fossil fuels, through activities such as driving cars, using electricity, and disposing of garbage into landfills.*
- How do you think that you contribute to climate change? *Driving to school, generating waste, wasting electricity, etc.*

Write answers on chart paper or a chalkboard.

Explore

- Have students research the carbon footprint and think about all the ways that they generate greenhouse gas emissions.
- Have students create a list of their daily activities that contribute to climate change.
- Have students think about ways that they can reduce their impact on the environment.
- Have each student trace their foot (or provide a footprint template) and then create a design demonstrating their climate impact on the footprint. They may also add solutions, illustrations, and any additional research they would like to share. You may provide pencils, pencil crayons, and markers. This project may also be designed using a computer design program.

Reflect & Discuss

Have students reflect on the activity. What were they surprised by? What changes do they want to make in their lives to reduce their carbon footprint?

Extensions

- Have students calculate their carbon footprint by finding and using an online carbon footprint calculator.
- Have students compare their carbon footprint to someone in another country or to a selected animal.
- Have students create their own carbon footprint quiz to hand out to students across the school.
- Take the message to your schoolmates and family. Teach them about their carbon footprint and challenge them to make changes to their lifestyle.

Resources

- Classroom Energy Diet Challenge (how-big-are-your-carbon-feet): <http://energydiet.canadiangeographic.ca/2016/main/challenge/110/how-big-are-your-carbon-feet>
- Global Footprint Network: www.footprintnetwork.org
- Zero Footprint Youth Calculator: <http://meetthegreens.pbskids.org/features/carbon-calculator.html>
- Inquiry to Student Environmental Action: <http://web.stanford.edu/group/inquiry2insight/cgi-bin/i2sea-r2a/i2s.php?page=fpcalc>

Follow-up activity

Planting trees remains one of the cheapest, most effective means of drawing excess CO₂ from the atmosphere. According to the United Nations Environment Programme (UNEP) an average tree absorbs 12 kg of CO₂ per year.

- As a class, count the number of trees on your school property.
- How much CO₂ do all the trees on your school ground absorb each year?
- Based on your calculations, how do these trees off-set your carbon footprint?
- How many trees as a class would you need to plant to neutralize your class footprint?

**HOW TO REDUCE YOUR CARBON FOOTPRINT**

- **Reduce your transportation footprint:** take public transit, carpool, walk, or bike.
- **Reduce your energy footprint:** turn off lights when they are not required, turn down the heat, rely on natural lighting from the sun, ensure electronics are efficient, support clean energy sources (such as wind, solar, geothermal).
- **Reduce your food footprint:** eat locally produced and organic food, cut down on the amount of beef and dairy you consume, reduce your food waste.
- Other ways to reduce your carbon footprint: reduce water usage, reuse and recycle, plant a tree.

What else can you do?