

CARBON FOOTPRINT

Lesson Plan for Grades 5-12 - 30-45 minutes

Prepared by [Climate Change Connection](#)

LEARNING OUTCOMES

Please see the document titled “Carbon Footprint Learning Outcomes” for grade 5-12 curriculum outcomes.

MATERIALS

Each student should have:

1. A copy of the Carbon Footprint worksheet
2. Two markers or crayons of different colours

BACKGROUND

The carbon footprint was developed to determine how human actions impact the environment, such as driving cars and what we eat for dinner. The goal of the footprint is to minimize the actions we undertake that have a negative impact. As such, the footprint is a useful tool to determine how much of an impact we have on the planet.

Individuals and communities can use the footprint as a tool to determine areas in which they impact the environment. From there, actions can take place that benefit all three pillars of sustainability: environment, society, and economy. Positive actions are those that benefit our world in the present and the future.

The concept of the carbon footprint has different meanings, including:

- A measurement tool to determine impacts on the environment, and the contribution daily actions have to climate change
- An opportunity to evaluate our choices, and pledge to take positive action
- A way to understand that our relationship with the planet is real and fragile

An important part of exploring our carbon footprint is encouraging others to take positive action – not only can we shrink our footprint, but others’ as well. When we join together with many others to multiply our positive actions, our footprints shrink even more.

ACTIVITY

1. *Discuss the concepts of the Carbon Footprint.*
2. *Explain that students will work through the ten areas of action: dwelling, water, recreation, heating and cooling, electricity, transportation, food, waste, air travel, and consumption.*
3. *Going through each action, students will colour in a section of the footprint for what they are currently doing. Other formats could include:*
 1. *Students can use two colours to record their actions: one for actions they are already doing, and a second for actions that they pledge to undertake in the future.*
 2. *Instead of colouring in a section of the footprint for actions they are already doing, colour in sections for what they can commit to doing in the future.*
 3. *Use a blank version of the footprint where students can record actions that are currently doing and/or future pledges that are not reflected in the handout.*
4. *Once students have filled out their footprints, use the action statement information (below) to discuss what negative impacts students have, and what they would like to do in the future to reduce this. Were they surprised by any actions?*
5. *Inquiry Questions:*
 1. *How can we reduce the impact households have on climate change?*
 2. *How does individual behaviour affect the global distribution of resources?*
 3. *How much energy is actually saved by turning off the lights?*
 4. *How much water is actually saved by reducing meat consumption?*
 5. *How can individuals be empowered to take positive action to benefit the environment?*

ACTION STATEMENTS

Below you will find more information related to the contribution sections of the Carbon Footprint.

- **Dwelling:** Larger dwellings require more energy to heat, cool, and light up. Choosing a modest home is a great first step in reducing a carbon footprint.
- **Heating and Cooling:** Using a programmable thermostat is a great way of reducing the amount of energy required to heat and cool our homes, schools, and workplaces. Air conditioning and heaters do not need to run at full capacity if no one is in the space.
- **Water:** We use water to cook, clean, and bathe. Pumping water to homes requires the use of natural gas in most Manitoban homes. Water must also be treated before we use it and after, which creates more demand for pollutants. Conserving water is a great step in

reducing a carbon footprint.

- **Recreation:** Spending time in nature, instead of indoors, is fun and good for our health. While enjoying outdoor places, it is our responsibility to protect the natural spaces we love, by making choices that respect the environment. Choosing recreational activities that require less waste and less fuel is a great way to reduce a carbon footprint!
- **Electricity:** While most of Manitoba's electricity comes from renewable energy sources (hydroelectric dams, solar energy, and wind energy), greenhouse gases are still required to get electricity to homes. Turning off lights, electronics, and kitchen appliances when not in use are simple steps that make a big difference in reducing a carbon footprint!
- **Transportation:** Larger vehicles burn more fuel than smaller or more fuel-efficient ones. Reducing the size and use of vehicles is a great way to reduce a carbon footprint. By carpooling or busing, we remove vehicles from the roads, and reduce the amount of greenhouse gases released. Walking and biking have no carbon footprint, because no pollution is created!
- **Waste:** Most household wastes (like packaging, food scraps, and batteries) don't have to go to a landfill site. Instead, we can compost and recycle many items. Taking the time to properly dispose of waste is an important step in reducing a carbon footprint!
- **Food:** Producing, processing, transporting, and disposing of food creates a lot of greenhouse gases! Animal products, like meat and dairy, are the most resource-intensive food on the table. Meat and dairy take 4-8 times more energy to produce than the food gives us. In contrast, breads, oils, potatoes, nuts and flour, contain more energy than it takes to produce them. If you're a meat eater, try cutting out one meat meal each week. Also, growing your own food reduces the need for transportation pollution.
- **Consumption:** Our everyday consumption contributes to a large amount of our GHG emissions, through manufacturing, packaging, transportation, consumption, recycling and disposal. The best solution is to "keep it simple" – buy less. We need to buy more durable goods, more re-usable products, products with less packaging, and we should borrow or rent items that we use infrequently.
- **Air Travel:** Travelling by air is the most fossil fuel intensive means of getting from place to place. There are lots of places that can be discovered nearby or reached by more fuel-efficient transportation methods like bikes, small vehicles, or trains. Reducing the number of trips taken by planes is also a great way of reducing a carbon footprint.