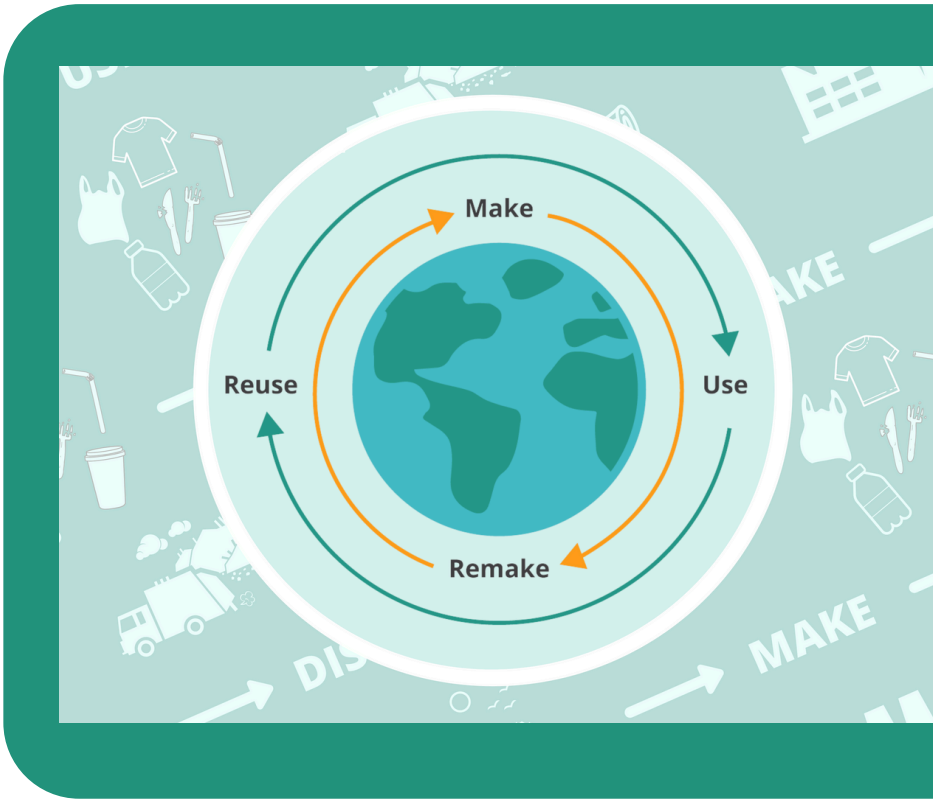
A Guide to

**Eco 360:**

# Activity 8: What Is Your Plastic Consumption Footprint?

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# Table of Contents

# Land Acknowledgement

In the spirit of respect, reciprocity and truth, we acknowledge and honour Moh'kinsstis, and the Treaty 7 region of Southern Alberta where this pilot project was conducted. This land is the traditional Treaty 7 territory of the Blackfoot Confederacy; Siksika, Kainai, Piikani, as well as the Tsuut'ina and the Îyâxe Nakoda Nations. This territory is home to the Métis Nation of Alberta, Region 3 within the historical Northwest Métis homeland.

With gratitude, we acknowledge the land and the Indigenous people that have taken care of it since time immemorial, and continue to honour and celebrate this territory.

# Backgrounder: Our Plastic Consumption Footprint

To move towards a plastic-free world, we all need to do our part in addressing the problem of plastic pollution in our environment. By adopting a reduce, refuse, reuse, recycle and remove approach to plastic consumption, we can start moving towards achieving this goal.

**The 5 Rs of Mindful Plastic Consumption**

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|---|---|
| Refuse | Refuse to consume plastic by opting for environmentally friendly alternatives |
| Reduce | If you can't avoid certain plastic products, then reduce your consumption of them |
| Reuse | Reuse plastic products that you own as much as possible |
| Repurpose | Instead of discarding plastics, repurpose them to make other useful products |
| Recycle | Once you have exhausted all ways to use and reuse the plastic, recycle them |

## Resources

By being mindful plastic consumers, we can all play our part in reversing the effects of plastic pollution on our planet. The plastic consumption footprint calculator is an excellent start to understanding just how much plastic we consume. Once we learn about our plastic consumption lifestyles, we can apply the 5 Rs principle to improve our plastic footprint. It is also encouraged to share our initiatives with our friends and families so that we can inspire others to take action and live sustainably. You can always research more to learn how you can limit your plastic consumption but below are some curated resources:

- The 5 r's: refuse, reduce, reuse, repurpose, recycle: https://www.roadrunnerwm.com/blog/the-5-rs-of-waste-recycling
- Plastic Pollution Primer and Action Toolkit: https://www.earthday.org/wp-content/uploads/Plastic-Pollution-Primer-and-Action-Toolkit.pdf (pages 24 - 52)
- 100 Steps to a Plastic-Free Life: https://myplasticfreelife.com/plasticfreeguide/
- Plastic Footprint Calculator: Individual https://www.thehappyturtle.in/plastic-footprint-calculator-individual/

# Curriculum Connections

**Activity 8: What Is Your Plastic Consumption Footprint?**

**Alberta**

- Chemistry 20, 30 and Biology 20, 30
  - STS outcome (science, technology and society): explain how science and technology have both intended and unintended consequences for humans and the environment

**Ontario**

- Grade 9 Biology (B1.2)
- Grade 9 Geography
  - C1. The Sustainability of Resources: analyse impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada
- Grade 10 Biology (B1.3)
- Grade 10 Chemistry (C1.2)

# Activity 8: What Is Your Plastic Consumption Footprint?

## Overall Objective

Learners will monitor their plastic waste on a weekly basis for a semester and then take actions to reduce their plastic footprint.

## Materials

- Internet-enabled device
- My Waste Footprint Monitoring Worksheet
- Topic backgrounder
- Eco 360 notebook (we recommend asking learners to maintain a notebook for this program to write down reflections as they go through the program)

## Time Required

- 45 - 60 minutes of class instruction
- 15 - 20 minutes of a weekly student assignment over the course of semester

## Learning Outcomes

By the end of this activity, learners will:

- Identify different types of plastics, their chemical compositions and recyclability
- Develop an awareness of their plastic consumption lifestyle and how much plastic waste can be attributed to their current lifestyle
- Understand how behaviour change can create a positive impact on reducing plastic waste in our communities and around the world

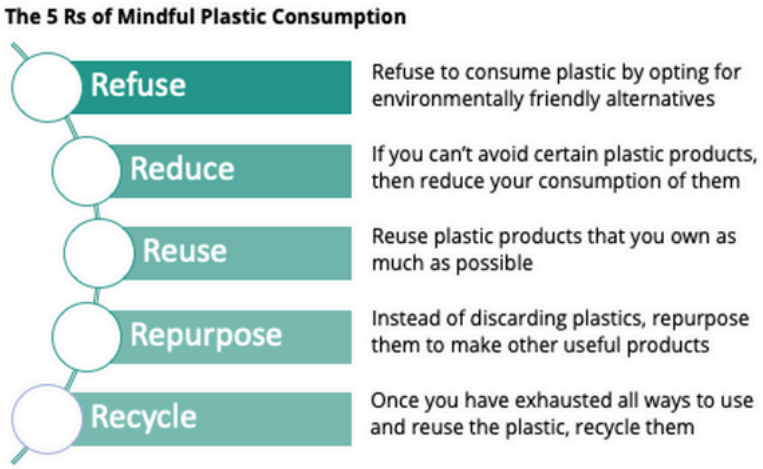
## Grade Level

Suitable for Grades 9 to 12

# Activities Outline

## Step One

Begin by exploring the problem of plastic waste in the world using the backgrounder. Introduce the concept of "5 Rs of Mindful Plastic Consumption" to educate and empower learners for making positive lifestyle changes to reduce their plastic footprint:




## Step Two

Continue on by asking learners to download the "My Plastic Footprint Monitoring Worksheet" from the activity webpage.

## Step Three

Using the "My Plastic Footprint Monitor Worksheet", ask learners to record the amount of plastic they consume in their household every week for a semester.

## Step Four

After the first recording, ask learners to take consistent action to reduce their plastic footprint by taking action for the semester. Some suggested activities are listed below. As learners take action, have them record their actions on the handout and record how much plastic consumption they were able to reduce over the semester!
Come up with action items to reduce plastic footprint, below some ideas:

https://www.globalcitizen.org/en/content/top-10-ways-reduce-plastic-footprint/

https://www.wwf.org.uk/updates/ten-tips-reduce-your-plastic-footprint

https://plasticactioncentre.ca/directory/5-ways-to-reduce-your-plastic-footprint/

https://www.greenpeace.org/usa/10-genius-tips-reducing-plastic-footprint/

## Learner Assessment

Consolidation: At the end of the semester, learners are encouraged to compare the progress they have accomplished over the weeks from where they started. They can share the overall reduction in plastic waste (in weight) that they accomplished and share photos of all the plastic waste that they no longer generate! Here is an example from the University of Toronto Trash Team wearing their diverted plastic waste to show the impact they made:

https://uofttrashteam.ca

## Optional Extension Activity

Please feel encouraged to run this activity school wide as a plastic reduction challenge to reduce the school's plastic waste!

# Associated Worksheets


**Eco 360**

# My Plastic Footprint Monitoring Worksheet

#Eco360

Name:_____ Date of Recording:_____

Recording Number:_____

***Note:*** This activity should be completed after completing Activities 3 and 4 of the Eco 360 program. Complete this chart every week for a number of weeks to measure impact.

| Plastic Product - (bottles, straws, bags, wrappers, etc) | Plastic Label - (See Activity 3 and 4 for reference) | Observable Physical Properties of the Plastic - (See Activity 4 for reference) | Chemical Formula of the Plastic - (See Activity 4 for reference) | Recyclability - (See Plastic by Numbers Worksheet for reference to see whether you can recycle the product) | Amount Consumed per Week - (try to measure in a quantifiable unit e.g., kg) | Action Taken to Reduce Consumption - (Record what action you took to reduce the consumption of the particular plastic item) |
|---|---|---|---|---|---|---|
| Sample entry: Single-Use Plastic Bottle | #1 Polyethylene Terephthalate (PET) | Transparent Malleable | $(C_{10}H_8O_4)_n$ | Yes, PET plastic is recyclable. My municipality has a recycling program (e.g., a blue cart) where I was able to discard it | 5 bottles x 10 g = 50 g - I buy one water bottle every day from the cafeteria | Bought a reusable water bottle |
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Date of Recording:_____
Recording Number:_____

Complete this chart as your last reading after taking action consistently for a number of weeks (we recommend at least 4 weeks for measurable impact), and calculate the impact of your actions in reducing plastic consumption.

| **Plastic Product - (bottles, straws, bags, wrappers, etc)** | **Plastic Label - (See Activity 3 and 4 for reference)** | **Observable Physical Properties of the Plastic - (See Activity 4 for reference)** | **Chemical Formula of the Plastic - (See Activity 4 for reference)** | **Recyclability - (See Plastic by Numbers Worksheet for reference to see whether you can recycle the product)** | **Amount Consumed per Week - (try to measure in a quantifiable unit e.g., kg)** | **Plastic Amount Reduced - (Calculate the difference between your plastic consumption reading at the beginning of the semester vs. now)** |
|---|---|---|---|---|---|---|
| Sample entry: Single-Use Plastic Bottle | #1 Polyethylene Terephthalate (PET) | Transparent Malleable | (C10H8O4)n | Yes, PET plastic is recyclable. My municipality has a recycling program (e.g., a blue cart) where I was able to discard it | 0 bottles | 50 grams |
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| **Total Plastic Reduced:** | | | | | | |