

Educator's Guide



Eco 360

Activity 12: Plastic Waste Management in Canada
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Backgrounder: Plastic Waste Management and Diversion in Canada

Plastic waste management and diversion is a critical issue as it ensures that plastic waste does not end up in the environment. Inadequate waste management over the decades has led to the massive problem of plastic waste polluting our oceans, land, and air. While the world comes together to clean up the environment by reclaiming plastic waste, municipalities around the world also need to focus on improving plastic waste management and diversion strategies to ensure plastic does not continue to enter the environment.

There are various ways for collecting plastic waste through a system of waste management. Separating waste into various streams (such as landfill disposal, organics, recyclables, and hazardous waste) is a very important aspect of waste management employed by most cities across the globe. Some cities separate the waste at the source, such as providing each resident in the city with appropriate collection bins at the curb side. These are typically identifiable as the black, blue and green bin programs – where black bin typically collects landfill waste, blue bin collects recyclables and green bin collects organics. Whereas, some municipalities collect all waste in one collection bin from sources (residential and commercial dwellings) and bring it to a waste management facility where they separate it into various streams depending on end use.

An important goal of each municipal waste management program is reducing the amount of plastic waste that comes to their facility. By eliminating unnecessary plastic waste from the economic system, municipalities can work towards reducing the amount of waste that enters the waste facility. An example of this method in implementation is the ban of single-use plastics in various parts of the world, including Canada—i.e., in 2020, the Government of Canada announced the ban of single-use plastic. This means that a list of single-use plastic items that will no longer be part of our economic system (e.g., stores, restaurants and other commercial operations cannot carry and sell them). The table below summarizes all the single-use plastic items that are included and exempted from this ban.

Single Use Plastics Ban in Canada

Included

- Checkout bags
- Stir sticks
- Beverage six-pack rings
- Cutlery
- Straws
- Food packaging made from plastics that are difficult to recycle

Exempted

- Garbage bags
- Milk bags
- Snack food wrappers
- Disposable personal care items and their packaging
- Beverage containers and lids
- Contact lenses and packaging
- Cigarette filters
- Items used in medical facilities
- Personal protective equipment

Source for information: (Flanagan, 2020)

When implemented, this ban will eliminate a large portion of plastic waste from our economy and waste streams. “In Canada, the responsibility for managing and reducing waste is shared among federal, provincial, territorial, and municipal governments. In general terms, municipal governments manage the collection, recycling, composting, and disposal of household waste, while provincial and territorial authorities establish waste reduction policies and programs, approve, and monitor waste management facilities and operations” (Government of Canada, 2018). Typically, the waste management in municipalities across Canada is not uniform as each municipality may choose to employ a different method.

Historically, Canada’s approach to managing plastic waste has not been satisfactory. Canadians throw away almost 3 million tonnes of plastic waste annually. Out of which only 9% of plastic is recycled in Canada—which means 91% of the plastic ends up in landfills and worse, the environment (Government of Canada, 2020). This shows we need to do a lot of work to move to a plastic waste free economy.

The good news is, in 2020 the Canadian government announced its plans to eliminate all plastic waste by 2030—a zero plastic vision aiming to remove all plastic waste from ending in our environments (Canadian Council of Ministers of the Environment, 2018). By employing a robust strategy on managing plastic waste, the government of Canada is working to improve the prevention, collection, and recovery methods of plastic waste.

- **Preventing** plastic waste, for example by designing plastic products for longevity and reparability, or reducing demand for disposable plastic items;
- **Collecting** all plastics, including through clean-up, so they are channelled back into the economy; and
- **Recovering²** value from all plastics using a range of strategies and processes according to a hierarchy of priority (Figure 2).

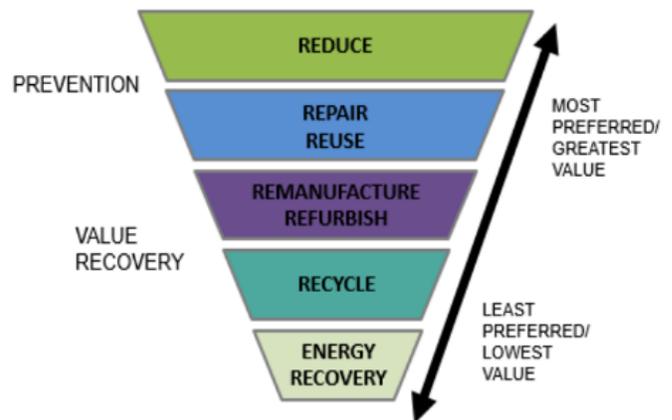


Figure 2. Hierarchy of priority in plastics management

Source: (Canadian Council of Ministers of the Environment, 2018)

The government is focusing on the following 10 areas to accomplish this vision:



Source: (Canadian Council of Ministers of the Environment, 2018)

More resources to learn about Canada's plastic waste management:

- Canada's plan for addressing plastic waste, article:
<https://www.canada.ca/en/environment-climate-change/services/managing-reducing-waste/reduce-plastic-waste/single-use-plastic-guidance.html>
- Understanding plastic recycling myths in Canada, CBC news video:
<https://www.youtube.com/watch?v=c8aVYb-a7Uw>
- Canada's plastic markets (Environment and Climate Change Canada), report:
http://publications.gc.ca/collections/collection_2019/eccc/En4-366-1-2019-eng.pdf
- Canada's plastic waste issues and solutions, CBC News video:
<https://www.youtube.com/watch?v=-wFwsDWlrPk&t=303s>

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Curriculum Connections

Activity 12: Plastic Waste Management in Canada

Alberta

- ❖ Biology 30 Unit D: Population & Community Dynamics
 - 30-D2.1 sts explain why Canadian society supports scientific research and technological development to facilitate a sustainable society, economy and environment
- ❖ Social 10-1
 - 3.7 explore multiple perspectives regarding the relationship among people, the land and globalization (spirituality, stewardship, sustainability, resource development)
- ❖ Chemistry 30: Unit C Chemical Changes of Organic Compounds
 - 30-C2.3 STS outcome - explain how science and technology have both intended and unintended consequences for humans and the environment

Ontario

- ❖ Grade 9 Geography
 - C1. The Sustainability of Resources: analyze impacts of resource policy, resource management, and consumer choices on resource sustainability in Canada
 - E1. The Sustainability of Human Systems: analyze issues relating to the sustainability of human systems in Canada
- ❖ Grade 9 Bio (B1.2)
- ❖ Grade 10 Bio (B1.3)
- ❖ Grade 9 Bio (B3.5)

Activity 12: Plastic Waste Management in Canada

Overall Objective

Learners will learn about plastic management and diversion in Canada. Learners will explore what their local municipalities are doing to address plastic pollution.

Materials

- Internet-enabled device
- 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

1.5 hours - 2 hours

Learning Outcomes

By the end of this activity, learners will:

- develop an understanding of plastic waste management in Canada
- understand what their local municipalities are doing to manage plastic waste

Grade Level

Suitable for Grades 9 to 12

Activity Outline

Step One

Using the backgrounder, explain waste management in Canada to your learners. Explain how it is a shared responsibility between all levels of government. Spend time on Canada's performance to date and its plans moving forward to address plastic waste.

Step Two

Introduce learners to best practices observed by cities around the world to manage plastic waste provided by WWF:

- a. First introduce learners to the best practices observed by here:
<https://greenlearning.ca/assets/uploads/pdf/Plastic-Management-Best-Practices.pdf>
- b. Explore each instrument in detail by looking them up on the website here:
<https://plasticsmartcities.org/pages/knowledge-hub>

Step Three

Learners will explore municipal plastic waste management programs in cities across Canada to understand how municipalities are managing plastic waste.

- a. Divide the class into Jigsaw groups of 3-5 learners.
- b. Assign one city from the list below to each learner in a Jigsaw group.
- c. Allow one learner from each Jigsaw group to join other learners that are assigned the same city. In this step, learners will discuss their findings and take notes in their Eco 360 notebooks.
- d. Ask the learners to re-join their original Jigsaw group and have each learner in the group share their findings with their group.
- e. Cities to assign to learners:

City	Link to Waste Management Program
Calgary	https://www.calgary.ca/waste/residential.html

Edmonton	https://www.edmonton.ca/programs_services/garbage_waste/edmonton-waste-management-centre.aspx
Toronto	https://www.toronto.ca/services-payments/recycling-organics-garbage/
Vancouver	https://vancouver.ca/home-property-development/waste-disposal-and-recycling.aspx



Learner Assessment

Consolidation: As a class, consider the following questions for discussion:

- a. How effective are the municipal policies you reviewed in your research?
- b. Did you find any of the best practices shared by WWF in your municipality for managing plastic waste? If yes, which one?
- c. How can your municipality improve its plastic waste management?
- d. Has plastic waste gone down over the years since the policies being implemented in your municipality?
- e. Can Canada achieve the zero plastic waste vision by 2030? Why or why not? Discuss the challenges and opportunities you foresee.