

Waste Management or Mismanagement?

Garbage disposal is one of the most visually striking examples of the impact of humans on the natural environment. As you have learned, nothing is wasted in natural ecosystems. The products of one organism are resources for another. Materials are decomposed and reused by living things or undergo processes and cycling through abiotic pathways.

If this is the case for natural ecosystems, what is it about human activities that cause us to produce so much waste? Could we produce and consume products in a way that mimics the biogeochemical cycles of nature?

The amount of waste we produce reflects our consumer-based lifestyles. Waste is produced when we make and use products. More waste is produced when the product is no longer valued and cannot be reused or recycled. Although waste may be produced it is produced in greater amounts when we *mismanage* our use of natural resources.

For thousands of years, humans have disposed of garbage by burning or burying it. Today, we still bury and burn waste, but modern facilities are equipped with technology to reclaim pollutants or produce energy (Figure 1). These modern advances are needed because we produce more garbage than ever before in our history. In addition, our garbage contains toxic substances that we do not want to release into the environment.



Figure 1 Modern energy-from-waste facilities use garbage to generate thermal and electrical energy.

SKILLS MENU

- Defining the Issue
- Researching
- Identifying the Alternatives
- Analyzing the Issue
- Defending a Decision
- Communicating
- Evaluating

The Issue

Why do we produce so much waste or “garbage”? How is it disposed of? Are there ways that we can reduce our impact on the environment by producing significantly less waste?

In this exercise, you will examine the sources of our waste and how we can reuse, recycle, and dispose of it. As part of a class “town hall” meeting, you will formulate and present ways to reduce the amount of waste produced. You will also recommend ways to deal with the waste we do produce. You should consider the following factors:

- Many consumer products come in excess packaging (Figure 2).



Figure 2 Many consumer products come wrapped in unnecessary packaging.

- Many products have a short life expectancy and are designed so that they cannot be repaired.
- “Cradle to cradle” is a zero-waste approach to sustainable manufacturing that models natural processes to reduce waste production.
- Almost all plastic, glass, metal, wood, and paper products can be recycled or reused, but very little of it is (Figure 3).



Figure 3 These deck chairs are made of recycled plastics.

- Virtually all food scraps and yard wastes could be composted, but few communities have large-scale composting programs.
- We package and market products, such as bottled water, that are almost completely unnecessary.
- Waste incinerators can generate energy but they are very costly and depend on a long-term supply of combustible waste.
- Landfill sites negatively affect adjacent ecosystems, attracting pests, leaching toxic chemicals, and producing greenhouse gases (Figure 4).

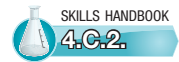


Figure 4 The Hagersville tire dump contained 14 million tires when it caught on fire in 1990. It burned for almost two weeks, polluting the air, water, and soil.

Goals

- To understand the negative impacts that resource consumption and waste production have on the sustainability of ecosystems.
- To identify alternatives and strategies to reduce negative impacts.

Gather Information



For this activity, you will represent a particular interest group, such as a consumer, a manufacturer, or a retail store owner. Do research to learn about the major sources of waste generated by your interest group and options for their disposal. Consider the following questions as you gather information:

- Where can you find more information?
- Will you make a visit to a local shopping mall to see what sorts of waste are associated with consumer goods?
- Will you contact your municipality to learn how your waste is disposed of and what sorts of composting and recycling programs are available?
- If you are doing an Internet search, what key words can you use?



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Identify Solutions

You may wish to consider the following factors to help identify options for waste reduction:

- How effective would recycling and composting programs be in reducing waste?
- What actions should local, provincial, and federal governments take to reduce the amount of waste going to landfills and incinerators?
- How can I reduce the amount of garbage I produce?

Make a Decision

Make a final list of waste reduction options that you feel will minimize waste produced by your interest group. **T/I A**

Communicate



Present your findings at a model Town Hall meeting held to gather information and recommendations from community members. At the meeting, you will present your ideas and concerns regarding waste reduction. **T/I A C**