

1.4

Systems Evolve

All systems change or evolve over time. What drives these changes? Changes to living conditions, changing social conditions, and new technologies all contribute to the ways systems evolve. The following systems have changed a lot in the last few decades.

Waste Management Systems

People produce mountains of waste. Canadians produce about 31 million tonnes of waste each year. In the past, we just piled it up or buried it. Today, about 67 % of our garbage is buried in landfill sites (Figure 1). As populations grow, and concern for the environment increases, we recognize the need for better waste management systems. In many countries, including Canada, landfill is only one part of waste management. Other parts include recycling programs, hazardous waste drop-off depots, composting, incineration, and public education to reduce the amount of garbage generated.



Figure 1 Waste management is a major social concern.

TRY THIS: A School Litter Management System



SKILLS MENU: observing, communicating

We are often asked to “think globally and act locally.” Taking action to improve your local environment is one way to begin, and carefully examining the problem is a good place to start.

Equipment and Materials: map of school and school grounds divided into sections; lined paper or notebook

1. Walk around your assigned section of the school. On the school map, record each location where you find litter.



Do not pick up any litter unless given instructions by your teacher on how to do so.

2. Record the amount and type of litter found at each location.
 3. Use your data to help build a class report.
- A.** What type of litter was most common? Was this litter generated from the school or the community? State your evidence.
- B.** Develop plans for an in-school litter management system. The system should include a communication plan (for example, a poster campaign) and an action plan (for example, a way to eliminate the litter problem).
- C.** How did the class work together as a social system?

Telephone Systems

Telephone systems have been around since the late 1800s, but have undergone many changes over the past 50 years. Early telephones (Figure 2(a)) relied on a number of physical mechanisms. These phones had a spring-loaded “hook” that moved up when the handset was lifted off the base to answer a call and moved down when the handset was replaced. Early phones also had a circular disk called a “rotary dial.”