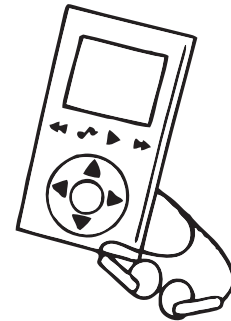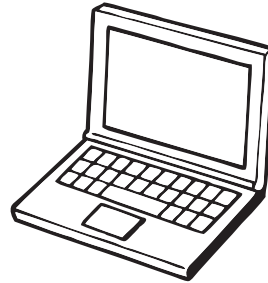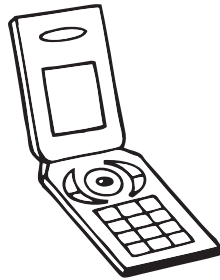# Table of Contents

Electronic Landfill

Objective: Given examples of electronic devices commonly thrown away, the students will research options for reusing or recycling these electronic devices and write a report for peers.

Note: Plan ahead for this unit by collecting old CDs, MP3 players, computers, cell phones, etc.

Vocabulary

- E-waste
- electronic
- device
- upgrade

Materials

- old electronic devices (e.g., computers, cell phones, CDs, MP3 players)
- local community resources for disposal of electronic waste in your area (e.g., brochures, information from local waste management company)
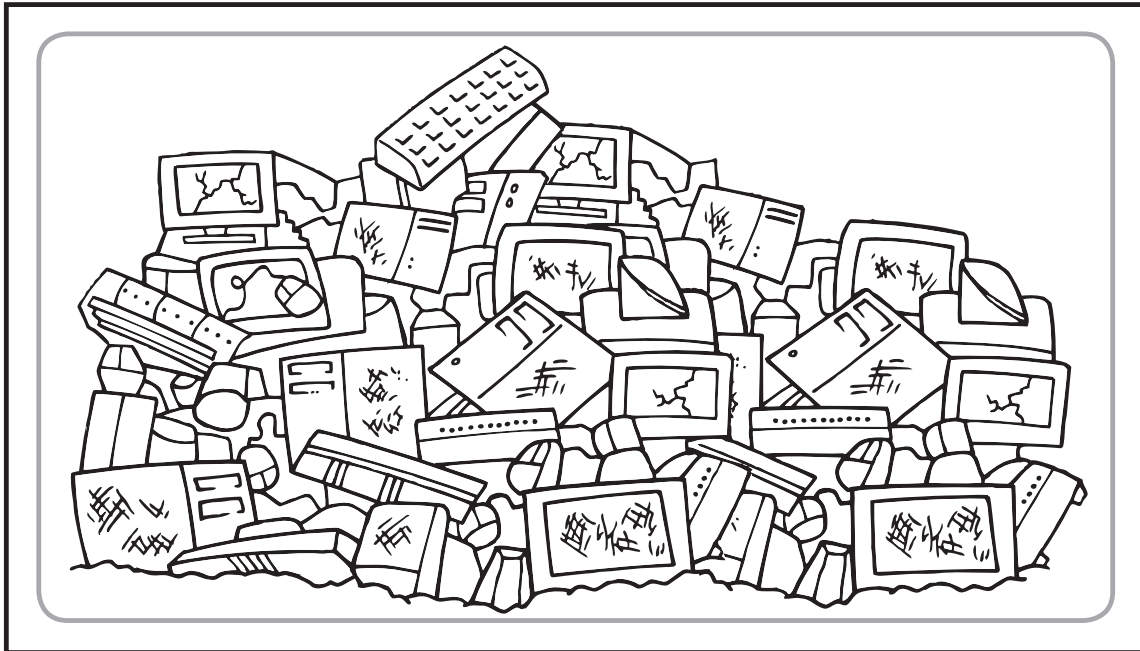- small pieces of scrap paper

Preparation

1. Research available options for safely disposing of electronic waste in your area (e.g., charity organizations, manufacturers) or have the students research the available options.
2. Check with others throughout the school and "rescue" electronic waste, such as a broken electric pencil sharpener, a cracked or "dead" CD that can no longer receive data, an MP3 player that someone replaced with a newer model, or a cell phone from someone who upgraded his or her phone.
3. Send an e-mail home to students, asking them to bring an electronic device they plan to throw away.
4. Have the students check with friends or family members for other old electronic devices.

Opening

1. Have the students discuss what makes something *electronic*. (It is powered by tiny amounts of electricity produced by electrons. Transistors, silicon chips, or valves control the electric current.)
2. Ask what it means to *upgrade* an electronic item. (To upgrade a product is to replace it with a better, more powerful, or recently released version.)
3. Ask why we call something electronic a *device*. (It does a particular job or fulfills a specific purpose.)
4. Explain how the term *E-waste* applies to electronic devices. (E-waste refers to electronic waste or garbage: electronic devices that get thrown away.)

Electronic Landfill *(cont.)*

Part 1

1. Ask the students to recall the last (personal) electronic device they replaced, either because it broke or they upgraded and got a new one.
2. Have the students write on a piece of scrap paper three things about their experience:
   - name of the electronic item
   - why they replaced it
   - what they did with the old electronic item
3. Instruct the students to turn and share their responses with a partner.

Part 2

1. Have the class create a pile with all the electronic trash collected.

   > **Safety Note:** Check to make certain there are no leaking batteries or other chemical hazards.

2. Ask for the students' observations:
   - size of pile
   - number of electronic items
   - how many items, if any, would break down in a landfill
   - how much space this would take up in a landfill
   - estimate how many devices students in the community throw away each day
3. Have each student select one item from the pile. If necessary, a pair of students may work together with one item.
4. Invite the students to think of ways their item could be "rescued" to not become E-waste. Remind them to consider how the item could be reused (i.e., old computers for job training; scrap metal).
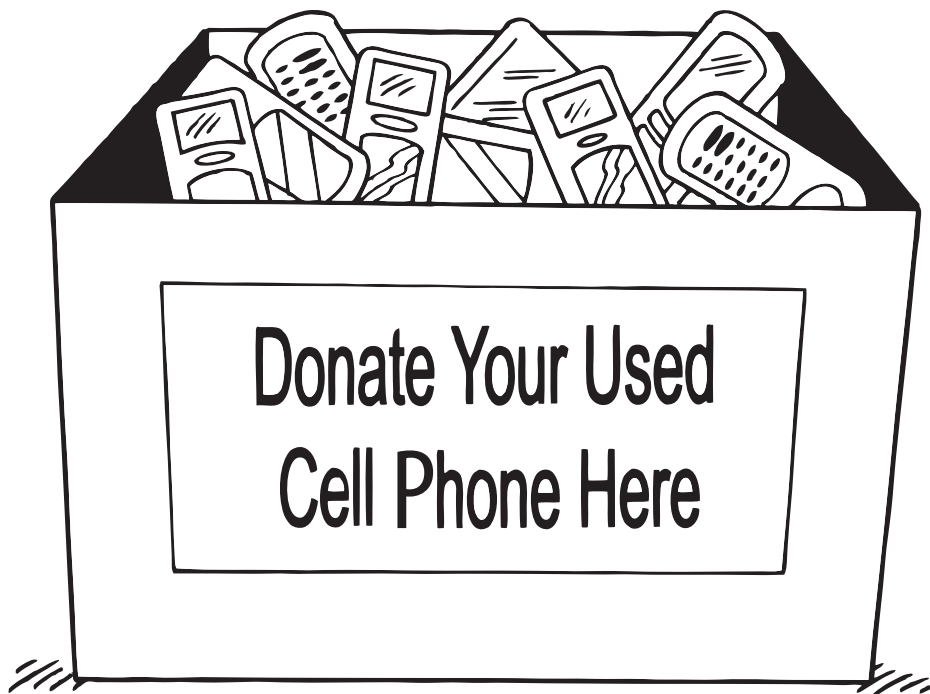
Electronic Landfill *(cont.)*

Closing

1. Direct the students to research and learn more about reusing and recycling E-waste.
2. The students may select one device and write a one-page report advising peers what to do with this type of used device instead of throwing it away.
3. Encourage the students to use the lesson vocabulary words correctly in their report.
4. Assist the students with documenting their research sources as necessary.

Extension

Challenge the students to conduct an E-waste drive to collect electronics that classmates, friends, parents, or other adults plan to throw away. Schedule a pickup with a reputable organization or organize a field trip to deliver the objects to a recovery facility in your area.

Donate Your Used Cell Phone Here

ELL Tip

Scaffold the students' discussion in Part 2 by giving specific examples of how electronic items can be reused or recycled:

- Many organizations take cell phones for recycling.
- MP3 players may be donated to charitable organizations or to a repair facility and then used by others.
- Many stores selling printer ink cartridges take them back for recycling or to refill with ink.
- Some manufacturers have computer "take-back" programs to recycle computers.

Glossary (cont.)

compost	mixture of rotted leaves, manure, etc., added to soil to improve it
conserve	to save something from loss, decay, or waste; to preserve
consumer	someone who buys and uses products and services
container	a receptacle for holding goods
contaminate	to make unfit for use
data	information or facts
debate	a discussion between sides with different views; to consider or discuss something
decompose	to break up into parts by a chemical process
degrade	to lower or corrupt in quality
device	a piece of equipment that does a particular job
drainage	the act or process of draining
E-waste	electronic waste
efficient	works very well and does not waste time or energy
electronic	containing transistors, silicon chips, or valves that control an electric current
emission	substance discharged in the air
environmentally friendly	products made of substances that do not damage the natural environment and are reusable or can be recycled easily
erosion	the gradual wearing away of a substance by water or wind
ferrous	describes metal that contains or comes from iron, such as steel