

E-Waste: The Digital Dark Side

AIM

To increase awareness of the existence of e-waste and its effect on global communities as well as the socioeconomic factors and consumer choices contributing to this phenomenon.

OBJECTIVES

At the end of this session, students will be able to:

- Examine a contemporary issue and its implications.
- Utilize print and electronic media for information.
- Locate additional resources through Web research.
- Conduct surveys / interviews in and outside of class.
- Present / discuss findings in pairs and small groups.
- Write a summary / reaction based on different media.
- Develop a reflection / research paper on a current issue.
- Explore local, national and international organizations.

TARGET GROUP

High-intermediate to advanced ESL students (levels 6 through 8)
(For the purpose of this lesson, the target levels range from 1 through 8, with the following guidelines:
1 = beginning, 5 = intermediate, 8 = advanced)

LENGTH

Four 90-minute lessons

OVERVIEW

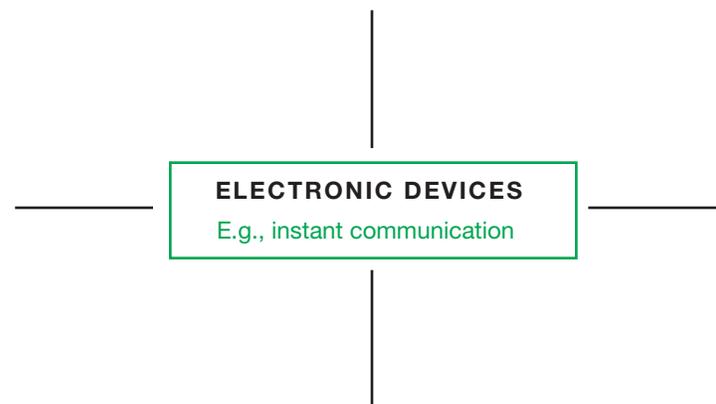
This lesson focuses on the contemporary issue of electronic waste. Students will examine the increasing volume of e-waste in consumer societies and the extensive exportation of obsolete electronic equipment to developing countries. They will consider the socioeconomic forces and consumer behaviors contributing to this phenomenon. Through the analysis of authentic materials, students will gain a broader perspective on the social, health and environmental impact of e-waste on different communities around the globe.

DAY ONE

1. Warm-up Activity

Display a flyer or catalog from an electronics chain and ask the class to name electronic devices that are currently on the market. Elicit a range of devices from students and list them on the board.

Ask students to work individually to develop a concept map, or mind map. In the middle of the map, they should write the phrase Electronic Devices, then complete the map with ideas about electronic devices. Invite them to share their responses with a partner or in small groups.



2. Discussion

Working in pairs or small groups, ask students to answer the following questions:

- What kind of electronic devices do you own?
- What electronic devices do you find essential in your life?
- How long do you usually keep electronic devices?
- How do people dispose of obsolete electronic devices?
- What happens to the discarded electronic devices?
- What are some government policies regarding disposal of electronic devices?

MATERIALS

“Ghana: Digital Dumping Ground,” a video clip from a *Frontline World* (PBS) segment; available at <http://www.pbs.org/frontlineworld/stories/ghana804/>

“Environmentalists Teach Dos and Don’ts of E-Waste,” an interview from NPR; available at <http://www.npr.org/templates/story/story.php?storyId=17988109>

Electronics TakeBack Coalition
– promotes green design and responsible recycling in the electronics industry; <http://www.electronicstakeback.com/>

Various articles on the topic of e-waste, including:

“E-Waste Not”
www.time.com/time/magazine/article/0,9171,1870485,00.html

“Is America Exporting an Environmental Problem?”
www.abcnews.go.com/2020/Technology/story?id=1479506

“U.S. Toxic E-Waste Gets Sent to Africa”
www.abcnews.go.com/GMA/Weekend/story?id=8215714&page=1

3. Conducting a Survey

Distribute copies of the chart below to students. Ask students to interview classmates about their behaviors with regard to purchasing and discarding electronic gadgets. While conducting the survey, students should complete the chart. When they have completed the activity, ask them to report their findings in small groups.

Electronic Gadgets

Name	What new gadgets do you want to own?	Why do you buy new gadgets?	What do you do with obsolete gadgets?

4. Contact Assignment

Suggest that students conduct the same survey in the community and prepare a short written or oral report on their findings in and outside class.

DAY TWO

1. Warm-up Activity

Introduce the term “electronic waste” to the class. Ask them to write in a two-column chart what they know about this issue and what they would like to know.

2. Listening Activity

Explain to the class that they will listen to an interview on National National Public Radio (NPR) entitled “**Environmentalists Teach Dos and Don’ts of E-Waste**” (<http://www.npr.org/templates/story/story.php?storyId=17988109>) and while listening to the interview, they will read and answer the comprehension questions.

- What happens to the electronic waste produced by the United States?
- What happens to e-waste after it arrives in developing countries?
- Why does so much e-waste get shipped to Asia?
- What are the negative effects of dumping e-waste?
- How do the toxins in e-waste return to the United States?
- What can concerned citizens do about e-waste?

Discuss the questions and share students’ reactions together as a class.

3. Analysis

For a deeper analysis of the interview content, ask students to discuss specific quotations on the issue of e-waste. Consider the following statements from the interview, made by Barbara Kyle of the Electronics TakeBack Coalition (<http://www.electronicstakeback.com/>).

“Nationally, there’s a figure that the recyclers put out of about 400 million units of e-waste scrap each year. So 400 million things—TVs, DVD players, all those—each year get scrapped.”

“Sadly, an awful lot of it isn’t really recycled. And what happens with an awful lot of it is it gets very minimally processed here where the recycler might take out some of the most profitable parts to the computers in particular. And then the rest of it gets shipped overseas, usually to developing countries, a lot of it going to Asia, China in particular. And there, it’s really almost virtually dumped.”

“The people that are handling it basically have no kind of protective equipment [like] you’d think. They have literally no gloves, no respirators. They’re breathing in these chemicals. Then when they burn it, whole communities are breathing in these toxic chemicals. It’s getting into their water systems in an area of China call Guayu [ph]. Contaminant levels are so high, they have to truck in all of their water.”

“And so people can go on our website and find recyclers in their area. They can click on the map on their state. But the other thing that consumers can do is start to really ask the companies that they’re buying their products from to offer take-back programs, because consumers have some power in their purchasing dollars to say, ‘I want to buy products from companies who will take them back from me when I’m done with them and recycle them responsibly.’”

(Interview transcript is available at <http://www.npr.org/templates/story/story.php?storyId=17988109>)

DAY THREE

1. Video Activity

Screen the Frontline World segment “**Ghana: Digital Dumping Ground**” (<http://www.pbs.org/frontlineworld/stories/ghana804>). Prior to their viewing, ask students to skim through a transcript of the introduction in order to gain a general idea of the issue and to predict the content in the episode.

2. Vocabulary Development

Distribute copies of the vocabulary chart below to students and ask them to work in pairs to complete it.

Word	Meaning	Usage
dumping ground		
outskirts		
smoldering		
wasteland		
slum		
shadowy		
shanty		
dwelling		
notorious		

3. Comprehension

Ask students to scan the program introduction (below) and answer the comprehension questions that follow. Next, divide them into six groups, with each group responsible for discussing an assigned question. Invite each group to present their response to the class.

INTRODUCTION TRANSCRIPT

“Ghana: Digital Dumping Ground”

(http://www.pbs.org/frontlineworld/stories/ghana804/video/video_index.html)

On the outskirts of Ghana’s biggest city sits a smoldering wasteland, a slum carved into the banks of the Korle Lagoon, one of the most polluted bodies of water on Earth. The locals call it Sodom and Gomorrah.

Correspondent Peter Klein and a group of graduate journalism students from the University of British Columbia have come here as part of a global investigation to track a shadowy industry that’s causing big problems here and around the world.

Their guide is a 13-year-old boy named Alex. He shows them his home, a small room in a mass of shanty dwellings, and offers to take them across a dead river to a notorious area called Agbogbloshie.

Agbogbloshie has become one of the world’s digital dumping grounds, where the West’s electronic waste, or e-waste, piles up—hundreds of millions of tons of it each year.

- How is the slum outside Ghana’s biggest city described?
- Why did the news correspondent and graduate students go to Ghana?
- What is the “shadowy industry” that is causing global problems?
- What does the introduction reveal about Alex and his life in the slum?
- What happens to the tons of e-waste produced by the West?
- What is the human and environmental impact of e-waste?

4. Video Viewing

Project the main image from the program onto a screen in the classroom (image available at <http://www.pbs.org/frontlineworld/stories/ghana804/>). Alternatively, click on <http://www.pbs.org/frontlineworld/stories/ghana804/interview/puckett.html> and launch one of the video segments.

- a. Ask the students to free-write about the main image from the program or about one of the video segments. Suggest they pair up and read each other’s paper.
- b. Ask students to write down while viewing the episode any facts, comments, or scenes that they find particularly interesting or that make an impression on them.
- c. After viewing the episode, have them share their reactions in small groups. A reporter from each group should then present the group’s ideas to the whole class.

5. Web Research

Encourage students to go to the “Ghana: Digital Dumping Ground” link at <http://www.pbs.org/frontlineworld/stories/ghana804/> and explore additional resources, including The Good Recycling Guide, an FAQ sheet on e-recycling, and “The Dark Side of the Information Age,” an interview with Jim Puckett of the Basel Action Network. Both links are located on this main page.

Ask students to summarize the key points in the guide or the interview.

ASSIGNMENT

Have the students share their discoveries about the issue of e-waste with the class in written or oral form.

DAY FOUR

1. Reading Activity

Ask students to find an article on e-waste, read the headlines and skim the article, underlining the main idea, key points and new vocabulary words.

2. Discussion Questions

Have students break into small groups or pairs and encourage them to respond to questions on the reading activity.

- Why did you select this particular article to read?
- What is the main idea presented in the article?
- What are five facts you have learned about e-waste?
- What questions / concerns does the article raise for you?
- How has your understanding of the issue changed?
- What actions are you inspired to take regarding e-waste?

ASSIGNMENT

Ask the students to write a summary and reaction based on the article they have read.

3. Web Research

Distribute copies of the chart below. Invite students to explore different websites in the following list to obtain information on e-waste, including its characteristics, causes and consequences. They can visit government, waste control / management and environmental sites to locate information and complete the chart. Ask students to report their findings and reactions in class the next day.

- **Environmental Protection Agency:** www.epa.gov
- **Greenpeace:** www.greenpeace.org
- **Basil Alliance:** www.baselactionanetwork.org
- **Earth911:** www.Earth911.org
- **Greener Computing:** www.greenercomputing.org
- **eRecycle:** www.ecycle.org
- **Green Citizen:** www.greencitizen.com

ELECTRONIC WASTE

Characteristics	Causes	Consequences

Optional Assignments

Invite students to:

- a. Write a reflection paper on the issue of e-waste, based on the different listening, viewing and reading activities in the lesson.
- b. Select an aspect of e-waste to investigate, then write a research paper on their findings.
- c. Conduct an interview with a local or campus official on the issue of e-waste and write a summary / reaction.

Civic Engagement

In order to promote global awareness along with civic engagement, encourage students to do the following:

- Research the college policy on e-waste and interview campus officials responsible for this area.
- Join campus organizations / clubs promoting environmental awareness.
- Visit e-waste control / management organizations and conduct informational interviews.
- Perform community service with environmental organizations and participate in different events.
- Design a class or personal action plan to address the issue of e-waste in today's world.

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