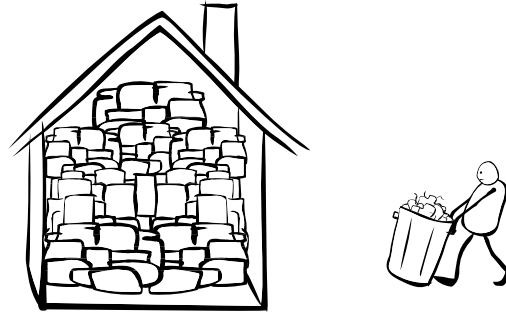


Garbology

Students first analyze typical contents of a North American trash can in order to define “luxury” and “necessity” for themselves. They read a short article about trash typically found in a modern dump in North America. Using information from this reading, students will draw conclusions about how these artifacts reflect the lifestyle of those who used and disposed of the items.





Objectives

Students will:

- Engage in a critical analysis of consumption
- Examine trends of modern disposal of material goods in the United States
- Analyze ways in which consumption choices reflect people's lifestyle and culture

Inquiry/Critical Thinking Questions

- How do material goods reflect our way of life?
- How do our individual consumption habits compare to those of an average American?

Subject Areas

- Social Studies (Global Studies, Contemporary World Problems, Geography, Economics, Sociology)
- Science (Environmental, Biology)

Time Required

45 minutes

Key Concepts

material consumption—the purchase and use of resources and products

waste disposal—the act of getting rid of unwanted materials

culture—the behavior, art, beliefs, and traditions of a group of people

National Standards Addressed

National Council for the Social Studies

I (Culture)

III (People, Places, and Environments)

VII (Production, Distribution, and Consumption)

National Science Education Standards

A (Science as Inquiry)

F (Science in Personal and Social Perspectives)

Additional Vocabulary

luxury—a material good or service that is not essential to a person's life; an extravagance

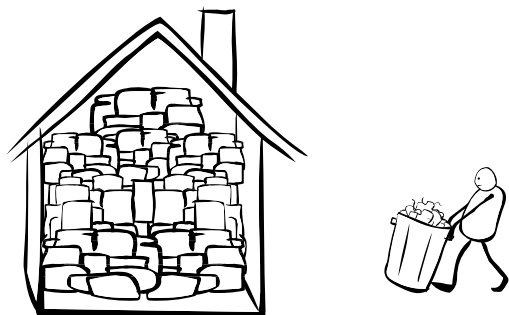
necessity—a material good or service that is essential to a person's life; something that is required

archaeology—the study of past human life and culture by an analysis of artifacts and material evidence

midden—a trash pile

Optional Background Reading

- Jared Diamond, "What's Your Consumption Factor?," *The New York Times*, January 2, 2008, www.nytimes.com/2008/01/02/opinion/02diamond.html—Diamond writes about the stark differences in per capita consumption across nations and the effects of these consumption patterns on the world.



- Kathy Marks and Daniel Howden, “The world’s rubbish dump: a tip that stretches from Hawaii to Japan,” *The Independent*, February 5, 2008, www.independent.co.uk/environment/the-worlds-rubbish-dump-a-garbage-tip-that-stretches-from-hawaii-to-japan-778016.html—Marks and Howden examine the impacts of the Great Pacific Garbage Patch, a mass of plastic waste floating in the Pacific Ocean that is twice the size of the continental United States.

Materials/Preparation

Reused plastic or paper bags, each with a small assortment of “trash” materials, such as an empty beverage container, a magazine, a packaged food container, a household battery, and an intact piece of fruit—1 bag per group of 4 students (Note: All items should be clean. Also, each bag does not need to contain identical items.)

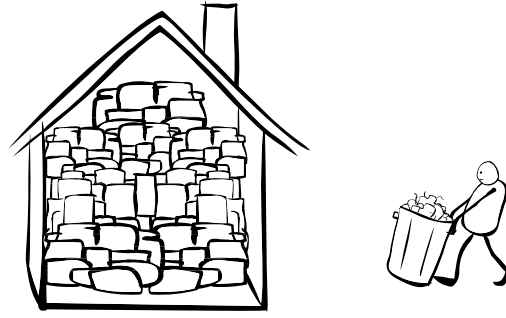
Handout: *Buried Treasure*, 1 per student or pair

(Optional) Computer access for showing *Story of Stuff* segment

Activity

Introduction

1. Divide students into groups of 4.
Distribute one bag with assorted trash items to each group.
 - **Alternative 1:** Ask students to list all trash items they have discarded in the past 1-2 days.
 - **Alternative 2:** Save the contents of your classroom trashcan for a 24-hour period, and allow the class to view all trash contents spread across a large table covered in newspaper or plastic.
2. Ask students to consider as a group what all the items in the bag have in common. (Possible answers: *They are all material items we use. They are all things we throw away. They are all things that could be reused. They are all nonliving objects.*)
3. Now ask students to consider which, if any, of the materials in the bag are luxury items and which are essential items. Provide time for students to determine the difference between luxuries and necessities.
4. Ask each group to display to the class the contents of their bag, explaining which items are essential and which are luxuries. Have each group provide an explanation for how they determined which items are luxuries and which are essential. Allow no more than 1-2 minutes for each group to present.



5. After all groups have presented their findings, ask for volunteers to articulate working definitions of the words “luxury” and “necessity.” Write these definitions in a place where all students can see.
6. Reveal to students that all of these items are found in our garbage. Ask students what information can be determined by looking at a person’s garbage. Allow them 1-2 minutes to discuss their answers within their groups.

Steps

1. Pass out the handout, *Buried Treasure*, to each student or pair.
2. Have students read through the handout and answer the questions on the bottom of the handout based on the information in the reading. (Note: This is a fictional account. The trash contents are derived from published accounts of U.S. trash.¹)
3. Discuss student answers to the questions on the handout. Ask students to explain their answers. Encourage differences of opinion; there are no right or wrong answers to these questions.
4. Ask students where they think this mysterious midden might be located. (While this story is fictional, the numbers reflect waste disposal in the United States.)
5. Ask students to consider all the items that they throw out over a 6-month

period of time. In a think-pair-share exercise, ask students: What might an archaeologist conclude about you from analyzing your trash?

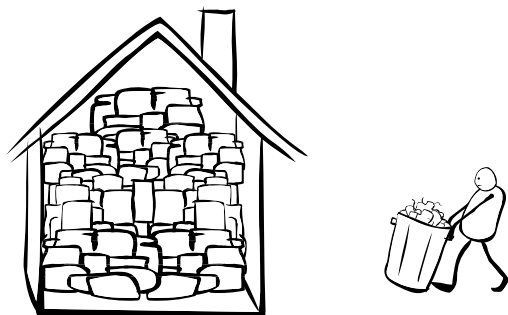
6. (Optional) **Story of Stuff link:** Show the introductory segment of *The Story of Stuff* (2:30), or introduce the unit of study by showing the entire video (20:40). This is only the beginning of a lively unit of study about consumption!

Discussion Questions

1. How does the following cliché apply to the contents of the midden presented in the activity: “One man’s trash is another man’s treasure.”
2. In the United States in 2006, 83% of people viewed a clothes dryer as a necessity, 50% viewed a cell phone as essential, and 33% believed a high-speed Internet connection was a necessity.² Do you agree that these items are essential? Do you think that people from other countries would agree?
3. What factors do you think drive consumption?

¹ U.S. Environmental Protection Agency, “Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2006,” www.epa.gov/waste/nonhaz/municipal/msw99.htm

² The Worldwatch Institute, “2010 State of the World: Transforming Cultures: From Consumerism to Sustainability,” www.worldwatch.org/files/pdf/Chapter%201.pdf, 9.



Geography Extension

Use the book *Material World: A Global Family Portrait* (Peter Menzel, 1995) to examine the material goods owned by representative families all over the world. Students could use some of the questions from the *Buried Treasure* handout to assess similarities and differences among the material goods associated with families in different countries. Short narratives from each country give clues to the culture and everyday life of each family. Each family's material wishes for the future are also reported.

Science Extension

Have students do a “trash carry” in which they collect all their trash for an entire day in a trash bag. Students can compare the contents of their trash to that of a typical American, who produces an average of 4.6 pounds of garbage each day. Have each student report on which type(s) of items in his/her trash bag could be reduced, reused, and/or recycled in your community. Research the savings of natural resources and energy associated with recycling different types of items. This will reveal the relative impacts that recycling different types of items would have. Then use that research to inform the development of a plan for reducing, reusing, and recycling materials, either at home or at school. Execute the plan, and encourage others to join the new recycling movement.

Information can be researched at:

- www.recycling-revolution.com/recycling-facts.html
- www.aluminum.org
- www.napcor.com/plastic/bottles/funfacts.html

Action Project

Instead of reading the fictional *Buried Treasure*, have students analyze trash contents at their school by using questions from the handout. For example, they could use these questions to analyze the contents of the classroom trashcan, or they might analyze the contents of a cafeteria trashcan after lunch. Visit <http://greenschools.net> for related ideas and resources.

Additional Resources

- **Photography:** www.chrisjordan.com
Chris Jordan is an artist whose work focuses on mass consumption and waste. His website features photographs from his book, *Running the Numbers* (Prestel Publishing, 2009).
- **Videos:** “Throw away Britain” video series
Four short video clips from BBC News show how people from four different countries (Italy, South Korea, the United States, and Belgium) dispose of household waste. <http://news.bbc.co.uk/2/hi/7746001.stm>

Buried Treasure, page 1

Last May a modern archaeologist, known in some circles as a “garbologist,” came across a midden in an extremely remote location. A midden is a collection of household waste. Most people these days would use the term “dump” to describe a midden. This midden is located 20 yards from an abandoned two-story house.

The location has not been publicly revealed for fear that other interested parties would loot or otherwise destroy the archeological site. Thanks to the geography of this remote location, which is quite dry and cold, the materials are mostly intact. According to newspapers found in the midden, the trash was produced and buried during a 6-month period in 1999.

Dr. Julia Johnston is the archaeologist in charge of cataloguing the discarded items and inferring information about the people who produced them. Johnston has deduced from the contents of the garbage that three or four individuals at most contributed to the midden. In all, an estimated 3400 pounds of garbage were found in the midden.

Dr. Johnston recently released a summary of the items found at the site. Here is the breakdown of the trash items she found:

- 34% paper, a mix of newspapers, glossy magazines, and office paper (more than half the paper appears to have been used for packaging materials such as boxes)
- 13% organic materials from the landscape, including dried leaves and grass clippings
- 12% food, including many items still inside plastic bags and other packaging
- 12% plastic, including food containers and containers that once held liquid cleaning substances
- 8% metal, including aluminum and tin cans
- 7% textiles, rubber, and leather, including discarded clothing, a used tire, and a small rug
- 6% wood (2 broken chairs)
- 5% glass, including beverage and food containers, as well as fragments of other glass items
- 2% personal items, including diapers, cosmetics, and pharmaceuticals/medicines
- 1% electronics (a cell phone and a TV remote)



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Buried Treasure, page 2

Now Johnston and her team are trying to learn more about the people who inhabited this remote location. They are looking to the midden contents for clues. Questions they hope to answer include the following:

- Why were the items discarded?
- Did these people have ample resources to survive, or did they struggle?
- What appeared to be important to them?
- How might they have spent their time?
- Did they have a relatively high or low standard of living compared to people in other places around the world?

Instructions

Answer the following questions to begin your own analysis of the midden and the people who created it.

1. Divide the contents into the following two categories:

Luxuries	Necessities

2. Are the contents of the midden mostly essential items, or are they mostly luxuries?

3. Why do you think these items were discarded in the midden instead of being reused inside the house?

4. Based on the contents of the midden, how might you characterize the lifestyle of the people who created it?

5. What other conclusions could be drawn about these people? (For example: What was important to them, or how did they spend their time?)

6. How does the waste from the midden compare to the waste produced by your own household?
