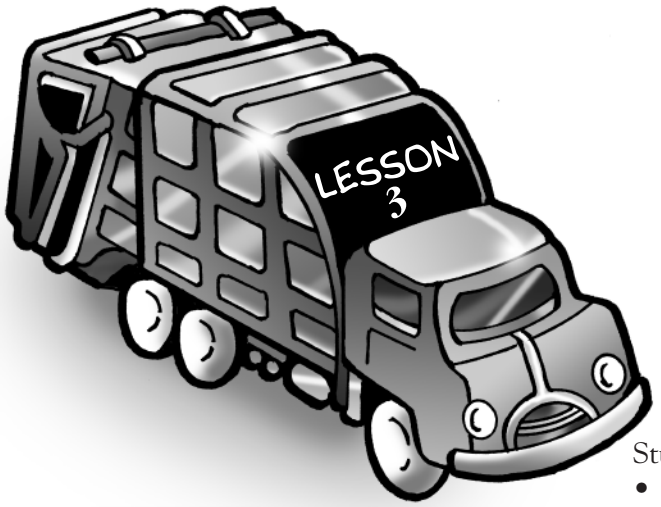


(post-tour)

BUYER BEWARE

CONCEPTS:

Students will learn:

- people buy products for many different reasons
- packaging is a major component of our solid waste
- excessive packaging wastes natural resources and increases the amount of solid waste
- people buy and throw away many disposable products
- people can reduce the amount of solid waste they generate by making thoughtful and informed choices when they buy products

Activity Overview:

Students will:

- determine why they and their friends buy things
- determine the purposes for a variety of packaging
- compare a large package to individual containers of the same product
- develop a criteria for selecting and purchasing products which use fewer resources and create less solid waste

Vocabulary:

- disposable
- durable
- recyclable
- solid waste

Time Requirement:

- Approximately 60-90 minutes

Materials:

- ☐ "Why Do We Buy It?" survey
- ☐ Food or lab scale
- ☐ Samples of different types of food packaging (e.g., paper boxes, metal cans, plastic bottles, plastic bags, plastic containers, glass jars, foil wrappings, polystyrene trays)

For each small group of students:

- ☐ Large bag of potato chips (or cookies, crackers, cereal, or other food product) and small individual packages of the same product equaling approximately the same quantity as the large bag

Preparation:

- ☐ Read the "Background Information" at the end of this lesson.
- ☐ Bring in or have students bring in the food packaging samples listed above.
- ☐ Make a copy for each student of the "Why Do We Buy It" survey

PROCEDURES

I. ANALYZE THE PRODUCTS WE BUY

(approximately 20-30 minutes)

A. Ask students the following questions:

1. What are the main reasons why people buy products?
   (*to **survive** – e.g., food; for **entertainment** – e.g., CDs; for **protection**–e.g., raincoat; to be **"in style"**— e.g., clothes)*

2. What are some non-food products that you purchased recently?

3. Are all the products we buy necessary?

B. Brainstorm with students what products they think they need to live every day. List these items on the chalkboard.

C. Give each student a copy of the "Why Do We Buy It" survey. Divide students into pairs. Ask students to fill in column A by themselves and then to interview their classmate to fill in column B. Tell students to select a different product when they are being interviewed than they use in column A. Tell students that if they have not purchased any products lately, they can simply answer using a product they would like to buy.

Name: _____ Date: _____

WHY DO WE BUY IT?

Complete column A for a product you purchased recently. Complete column B for a product a classmate purchased recently. Put a checkmark in any box that describes why the product was bought.

REASON PRODUCT WAS BOUGHT	A Name of Product You Bought: _____	B Name of Product Classmate Bought: _____
1. I needed it.		
2. I wanted it.		
3. The cost was good.		
4. It was on sale.		
5. I've bought this product before.		
6. I'm familiar with the brand name.		
7. It was recommended by a friend.		
8. I saw it advertised.		
9. I wanted to try something new.		
10. I thought it would last a long time.		
11. The packaging was catchy or visually attractive.		
12. It used less packaging than other brands.		
13. The packaging was reusable or recyclable.		
14. Other	Describe:	Describe:

D. After students have completed their surveys, discuss:

1. What are the most common reasons for buying a product?

2. How frequently was packaging considered when purchasing an item? Why?

3. Do most people appear to be concerned about waste disposal when deciding what to buy? Why?

II. ANALYZE PACKAGING

(approximately 30-45 minutes)

A. Show students a large bag of potato chips (or cookies or cereal) and the several small individual bags. Explain that they are going to compare the packaging to determine which contributes the most solid waste. Ask students how they would do the comparison.

B. Divide students into small groups, provide each group with a large bag of chips and small individual bags, and ask students to follow the steps below. For younger students, work through the steps as a class. Tell students to wash their hands before handling the food if they plan to eat the food later.
(***Note:** Each group can have the same product – e.g., potato chips – or each group can work with a different product.)*

Large Bag

1. Record the cost of the chips.

2. Weigh the large bag of chips and record the total weight.

3. Empty the chips from the bag and either:
   - weigh the bag and subtract the weight of the bag from the total weight to obtain the weight of the chips
   - OR weigh all the chips.

   Record the weight of the chips (hopefully, the same as printed on the package).

4. Cut the bag so that the paper can be spread out flat. Calculate the area of the wrapper (length times width) and record.

5. Calculate the amount of chips per unit weight (one ounce) of packaging.

Small Bags

6. Record the cost of all the small bags.

7. Weigh all the small bags of chips. If all the little bags came in a larger bag or in a box, include that packaging as well. Record the total weight.

8. Empty the chips from the bags and either:
   - weigh the bags and subtract the weight of the bags from the total weight to obtain the weight of the chips
   - OR weigh all the chips.

   Record the weight of the chips.

9. Cut all the bags and spread them out flat next to the large bag. Calculate the area of all the packaging for these small bags and record.

10. Calculate the amount of chips per unit weight (one ounce) of packaging.

C. Ask students the following questions:

1. **How does the packaging compare? Which weighs more? Which takes up more space? Which provides the most product for the least packaging?**

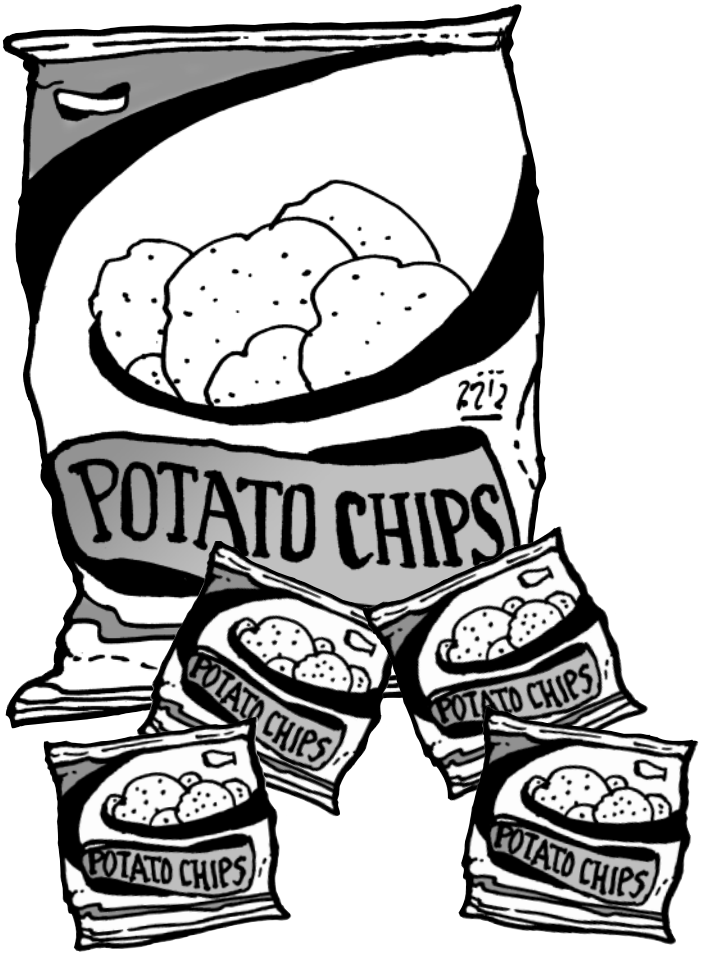
2. **Why is the amount of packaging important?** *(Most packaging is quickly thrown away, and like all trash, it uses up natural resources and takes up space in the landfill. Packaging can account for up to 40% of our household solid waste, and much litter comes from packaging.)*

3. **Is the packaging recyclable? Does it matter?** *(It does matter. The amount of packaging is probably less important if it can be recycled because it* ***may*** *not end up in the trash; however, producing the packaging still uses resources and contributes to the cost of the product.)*

4. **What is the cost per serving of the chips in the large bag and of the chips the small bags? Which do you think sells better? Why?**

5. **What are some products that can be bought in large containers or in bulk?** *(cereal, chips, cookies, rice, beans, fruits, vegetables)*

6. **What are the advantages of buying items in large quantities (or in bulk)?** *(Less packaging waste is created and the food is less expensive per serving.)*



7. **What are some disadvantages of buying items in large quantities?** *(You may not need that much; the product may not stay as fresh; it may not be as convenient to pack in lunches.)*

8. **Which package would you buy? Why?**

D. Display the various types of other packaging that you have gathered. Ask students to identify some of the reasons that these packages are used. For example:
   - Preservation – to keep food fresh
   - Protection – to keep the contents from being damaged
   - Sanitation – to keep the item clean and uncontaminated
   - Safety – to prevent tampering (e.g., having someone add something harmful to the product)
   - Regulations – to comply with standards set by the government
   - Identification – to identify and explain the product

- Theft protection – to prevent the item from getting stolen
- Convenience – to make it easier to carry or to keep small items together
- Marketing – to make you want to buy it

E. Discuss with students:

1. **From what materials are various packaging made?**
   (plastic, paper, aluminum, glass)

2. **Which packaging seems most important?**
   (Answers will vary but should include packaging for the preservation and protection of the product.)

3. **Does any packaging appear unnecessary or excessive? Why is it used?**
   (Some packaging is used to make the item seem bigger and more eye-catching.)

4. **Do you think the amount and type of packaging affect the cost of the product?**
   (Yes. Packaging can often add about 10% to the cost of the product.)

5. **Can any of this packaging be recycled?**
   (The answer will depend on what samples you have available and what is currently accepted for recycling in your community – usually aluminum cans, glass jars, plastic bottles.)

6. **Is any of this packaging made from recycled products?**
   (Most cardboard is made from recycled material, but look specifically for cardboard packages that are gray instead of white inside. Also look for the standard recycling logo with the three arrows printed on the package.)

7. **Why is being recyclable or being made from recycled material important?**
   (It will help conserve natural resources and generate less waste.)

III. DISCUSS BUYING DECISIONS

(approximately 10-15 minutes)

A. Brainstorm with students a list of disposable items – items meant to be thrown away after being used, usually only once. Record the items on the chalkboard.

Sample responses include:

- *paper plates*
- *napkins*
- *diapers*
- *tissue*
- *paper/plastic cups*
- *plastic water bottles*
- *paper lunch bags*
- *plastic wrap*
- *disposable shavers*
- *plastic utensils*
- *batteries*

B. Discuss with students:

1. **Why are disposable items used?**
   (often for convenience)

2. **When do we tend to use the most disposable products?**
   (on picnics, for parties)

3. **What disposable items could be replaced with durable ones – ones that can be used over and over?**
   (e.g., paper/plastic plates, cups, utensils; diapers; paper lunch bags; plastic wrap)

4. **Why should using nondisposable items be encouraged?**
   (Disposable items create more solid waste, which uses up natural resources and takes up space in the landfill.)

5. **When are disposable items essential?**
   (Some disposable items must be used for health and safety reasons; for example, gloves in hospital, tissue in a bathroom.)

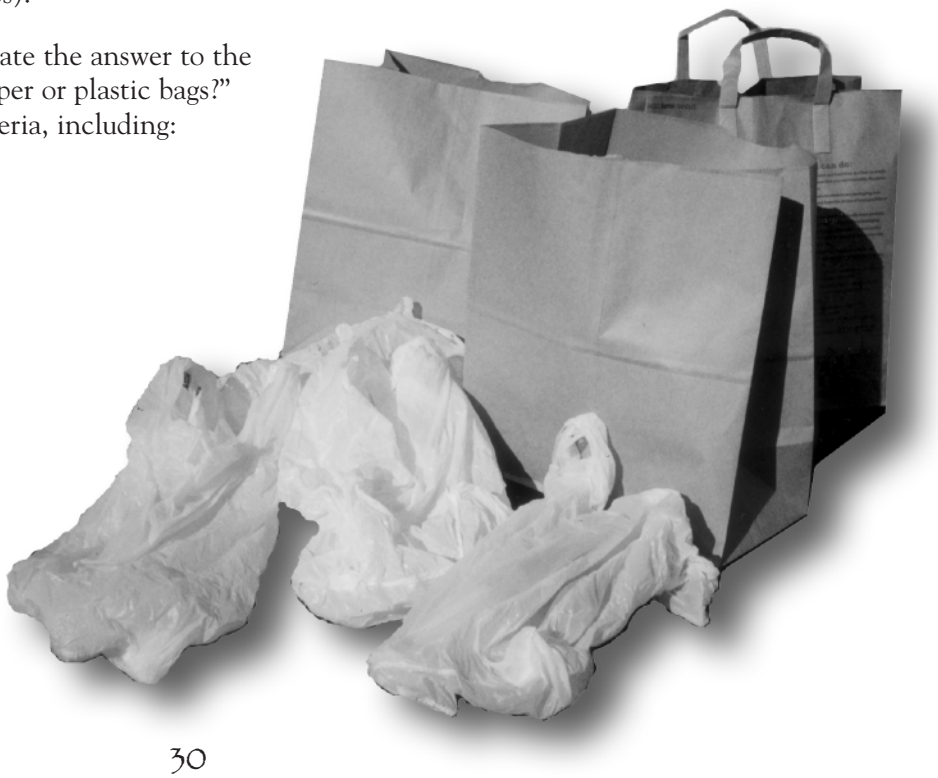
C. Either in groups or with the class as a whole, have students develop a list of criteria that consumers could follow when making a decision about what to buy based on what they've learned in this lesson. For example:

- Choose products that will last a long time.
- Look for products that can be repaired.
- Avoid one-time-use disposables (unless necessary).
- Avoid single-serving packages.
- Buy in bulk and in larger sizes when possible.
- Avoid products with excess packaging.
- Choose products in recyclable, returnable, or refillable containers.
- Support companies that use minimal packaging and packages made from recycled products.

D. Discuss the ease or difficulty of each criteria and try to list from the easiest to the most difficult.

EXTENSIONS

- **Make graphs** showing the results of the "Why Do We Buy It" survey.
- **Conduct interviews.** Have students interview their families to determine the criteria for purchasing various products.
- **Create a packaging display.** Ask students to bring in sample of:
  - nature's packaging (e.g., banana, orange, nut in shell)
  - reusable packaging (e.g., cottage cheese container, plastic bag)
  - recyclable packaging (e.g., aluminum can, plastic soda bottle)
  - packaging from recycled material (e.g., cereal box)
  - excessive packaging (e.g., fancy cookies, cosmetics)
  - packaging difficult to recycle (e.g., boxed juices, cellophane over CD box)
- **Design packages.** Have groups of students work together to design a package for a particular product (e.g., a compact disk or shoelaces or a candy bar). Ask groups to share their packages and to explain the purpose and function of what they designed. Have them design and carry out tests for their packages.
- **Analyze packaging.** Have students identify the purpose and function of several packages to determine what products are overpackaged. Then compare several similar products (e.g., fast food hamburgers).
- **Communicate concerns.** Brainstorm with students ways that they can convey their concerns about overpackaging to companies. Be sure that they consider the concerns of the company.
- **Compare disposable and nondisposable items.** Have students gather and compare costs and the life span of comparable disposable and nondisposable items. Analyze in various ways, such as cost per use, cost per day.
- **Compare products.** Have students analyze the cost and packaging of a product by looking at a fresh food and then several processed forms of that food (e.g., fresh corn, frozen corn, canned corn, canned creamed corn, corn chips).
- **Conduct a debate.** Have students debate the answer to the question heard at grocery stores – "Paper or plastic bags?" Be sure that they consider several criteria, including:
  - strength
  - volume
  - weight
  - ease of use
  - resource base
  - production
  - ways to reuse
  - ease of recycling
  - contribution to landfills



BACKGROUND INFORMATION

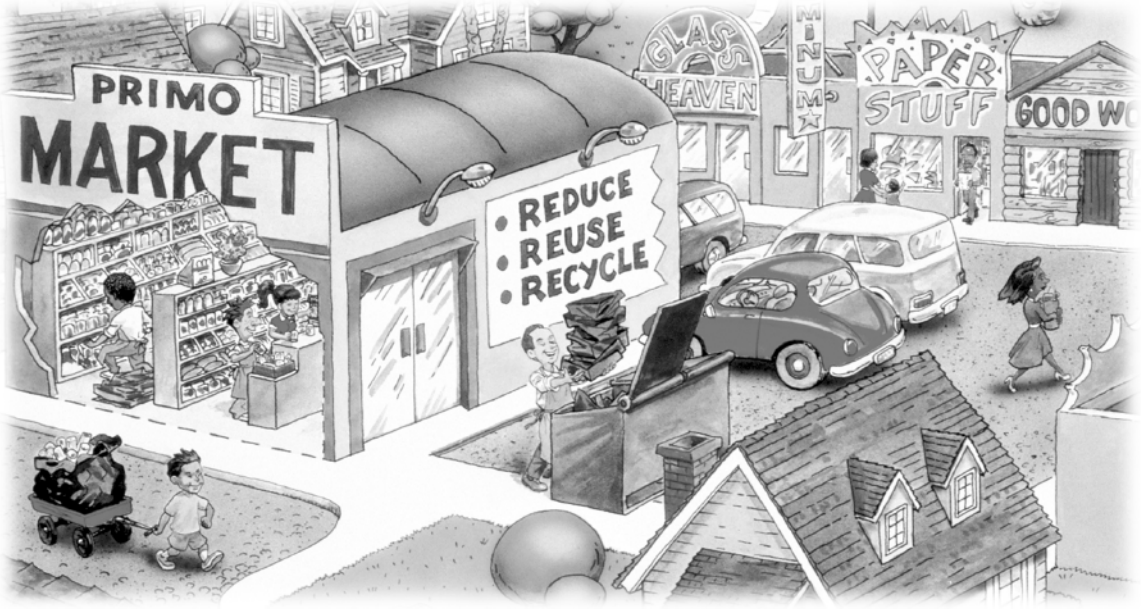
Currently, Americans live in a disposable society – one in which many manufactured products are designed for a single use and are then discarded. According to the U.S. Environmental Protection Agency, each American throws away about four to seven pounds of waste per day.

Minimizing packaging material can make a big difference in the amount of solid waste that is produced. Packaging makes up about 50 percent by volume and 30 percent by weight of our m unicipal solid waste. In the United States, packaging accounts for 50 percent of all paper produced, 90 percent of all glass, 11 percent of all aluminum, and 3 percent of all energy used.

Packaging not only contributes substantially to the volume of solid waste needing disposal, it also depletes natural resources, adds to litter and pollution, and increases the cost of a product. Without reusing or recycling packaging materials, which is usually meant to be disposed of after one use, we lose the energy and natural resources that go into making them. Furthermore, some packaging materials contribute nonbiodegradable or toxic materials to the environment. And litter, which degrades the environment and can often harm or kill wildlife, is mostly packaging, including cans, bottles, paper wrappers, and bags.

As landfill capacity diminishes and environmental concerns and public perceptions restrict or delay the construction of new facilities, new strategies are needed to address reducing solid waste. Preventing waste from being created in the first place – waste prevention (reducing and reusing) – is the preferred method. After all, waste that does not get produced does not have to be managed. Furthermore, waste prevention eliminates the need for handling and transporting materials, eliminates the energy-intensive remanufacturing step which is required in recycling, conserves natural resources and energy, reduces waste management costs, and reduces pollution.

By learning that their purchasing choices have consequences, young people can become wise consumers, who help to reduce solid waste and conserve natural resources. Waste prevention is something everyone can practice. People can help eliminate waste by buying durable products, repairing instead of rebuying products, and looking for minimal packaging. They also can reuse whatever they can, and, when possible, purchase items made from recycled materials.



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