

Make Every Day Green

LESSON THREE The Package Problem

Grade Levels: 3-5

Sunshine State Standards

- **Body of Knowledge: The Nature of Science**
 - Big Idea 1: The Practice of Science
- **Body of Knowledge: Life Science**
 - Big Idea 17: Interdependence
- **Body of Knowledge: Earth & Space Science**
 - Big Idea 6: Earth Structures

Key Concepts

- Discuss the purpose of packaging.
- Compare the different natural resources used in packaging.
- Judge if packaging is necessary and appropriate.
- Be aware of wasteful packaging, and think of ways that it can be reduced, reused, or recycled.

Vocabulary

- **green product:** A product that is nontoxic and requires little energy and few natural resources for its manufacture.
- **disposable:** Designed to be thrown away after one use or after a limited period of time.
- **product:** Something manufactured by hand or by industry for use by a consumer.
- **durable:** Capable of withstanding long use, wear, and decay.
- **packaging:** A container or wrapping used for storing, transporting, or displaying a product.
- **source reduction:** Refers to any change in the design, manufacture, purchase, or use of material to reduce the potential waste and toxicity.

Background

We are used to a comfortable life provided by modern means. Food, clothing, shelter, and warmth are readily available, and consumers have easy access to many different types of products. People in the past had to produce their own means of survival: growing gardens to provide food, spinning wool to make clothing, and harvesting wood to burn for warmth, protection, and cooking. People saved reusable items, such as thick glass bottles and cotton flour sacks, because it took a lot of time and energy to produce them. Also, they found new ways to reuse old items.

Today, in our society, almost 90% of manufactured packaging becomes solid waste, and it takes up about 22% of the materials in the landfill. Americans on average throw away enough discarded paper products to construct a 12-foot-high wall that can stretch from the Pacific Coastline to the Eastern Seaboard of the mainland of the United States. About 2.5 million plastic packaging materials from consumer products are thrown away every hour, and Americans waste 9% of the edible food that they purchase. American families trash 18 billion disposable diapers each year.

While packaging is important to the longevity of some food products, as well as safe transportation, much packaging is excessive and does not show sensitivity to environmental issues. By understanding different types of packaging that major companies use, students will become educated consumers who are able to make wise choices.



Time

45 minutes

Materials

- Dry & cleaned containers, boxes, and packaging from consumer products
- Examples of similar products where one is

“over packaged” and the other is more “environmentally friendly”.

- “Buyer Beware” worksheet
- Pencils



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Introduction

This introduction will help your students start thinking about the concepts of packaging, and how modern lifestyles have led to increased production of waste.

- Take out a regular ball-point pen and a pencil. Ask students what they will do when the pen runs out of ink, or the pencil can no longer be sharpened?
- Most common responses are that they would throw it away or just buy a new one. However, look for responses that would suggest that some pens and pencils can be reused (like purchasing a new ink cartridge or mechanical pencils into which new lead can be inserted).

Procedures

1. Create a graphic organizer chart for the class, and compare two vocabulary words: Disposable and Durable. Briefly review the definitions of the words, and ask students to name some attributes that describe something as *durable* or *disposable*. Then ask students to list items that they use daily, and have them sort it in the graphic organizer as a *Disposable* product or a *Durable* product. An example of the chart is listed below:

Characteristic:	Durable: Capable of withstanding long use, water, and decay.	Characteristic:	Disposable: Designed to be thrown away after one use or limited period of time.
Strong	<ul style="list-style-type: none">• Plastic Tupperware container	Flimsy	<ul style="list-style-type: none">• Ziploc storage bag
Sturdy	Dishes	Throwaway	Paper plates

2. Observe the items that students list as examples. Then ask the students to investigate why people would want items that are designed to be thrown away.

- Cost efficient
- Easy to replace
- Convenience

3. Now ask the class to reflect on the activity from “What goes in a garbage can?”. Use their prior knowledge of the amount of waste people generate.

- What if I asked you to pack a lunch for school tomorrow, and the rule was that you can’t throw anything in a garbage can? What are ways that you can achieve that goal?
- Use reusable containers to bring back home to wash
- Drink water or juice from a thermos container
- Bring food that doesn’t have to be wrapped, like apples
- Put your food in a bag or lunchbox that can be used again
- Eat foods that don’t require lots of packing

4. Bring out some examples of packaging that students can easily recognize. Inform students they are going to investigate these products:

- What motivates the consumer when choosing a product to buy?
- How something is packaged (how it looks, disposable elements, brand names, deceptive advertising) can influence a person’s choice.
- How much of a product is disposable (including the packaging), and how much of it becomes waste.

5. Break the class into groups or teams, and supply each investigative unit two different types of packaging of the same product. A good example is to use a name brand and then a store brand item.



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Reflection/Response

Choose some student responses from the activity, and have them share their views on the packaging example. Use these prompts to help a class discussion.

- What type of material is the package made from?
- Can it biodegrade?
 - A good example of biodegradable packing is packing-peanuts made from potato starch.
 - Remember, styrofoam can't decompose naturally.
- When students identify the country of origin of the product, ask them to reflect on how much energy it took for the product to be shipped to the US. Would it be more beneficial to purchase products that cost less energy to transport?
- What natural resource does it come from?
- What purpose does it serve? Remember, some packaging can give a false impression that the product is bigger, better, or more fun than it really is.
- Is the package made from two types of materials combined? These types of packaging are not recyclable because the materials cannot be easily separated.

Ask students to submit a list of *Smart Consumer Questions* to their parents or guardians the next time they go shopping and compare packaging to Broward County's recycling guidelines.

Extension

- Students can create a scrapbook of popular advertisements for products directed towards their age group.
- Students can analyze how advertising can influence kid's decisions in making a purchase.
- Students can reflect on how the product and its packaging can influence the waste stream.
- Write letters to the companies whose packaging seemed excessive. Use this guide to start the communication process:

Company Name:

Address:

Dear sir or madam,

I want to inform you that I enjoy using your product; however the packaging is wasteful. Can you repackage your product using:

- Recycled materials

- Less materials

or

- More eco-friendly and biodegradable packing?

Sincerely yours,



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1. Pick one type of product and compare the various brands and choices of packaging available.
2. Answer the questions in the graphic organizer for each product packaging type.
3. Put a check next to the product that appeals to you the most.

Name of Product						
What materials is the package made of?						
Is it recyclable?						
Is it reusable?						
Cost & Weight						
What country makes product?						
Does it have excess packaging?						
Is packaging environmentally friendly?						

