

Use It and Lose It

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Subjects:	Science, Social Studies
Grades:	4 th – 8 th
Length:	45-60 minutes
Focus:	packaging, source reduction

Purpose:

The purpose of this lesson is to help students become conscious of waste reduction through source reduction, and responsible consumerism. Students will begin to realize that waste reduction, and therefore environmental quality is something they can act upon.

Objectives:

By becoming aware of the unnecessary packaging involved with many of the products we buy, we can use our roles as consumers to reduce excessive packaging waste in our own lives. Products and their packaging continue to be manufactured because the public will buy them. Industries usually respond to consumer demand for recyclable, recycled or otherwise environmentally friendly products.

Students will:

- Explore the many different ways that something can be packaged.
- Be introduced to the concept of "source reduction".
- Understand the purposes and functions of packaging.
- Identify wasteful packaging and consider alternatives.
- Recognize the environmental and financial impacts of packaging.

Background:

The Three R's are reduce, reuse, and recycle. Reducing comes first because it is the most important way that we can prevent waste and conserve natural resources. With diminishing landfill space and controversy over some waste management practices, preventing waste from being generated in the first place is the best solution. Waste prevention helps reduce waste management costs, conserves natural resources and reduces pollution and toxicity.

Waste is generated through many different means. However, it is estimated that 1/3 of all the garbage thrown away consists of packaging. Packaging consists of wrappers, blister packing, paper and paperboard, Styrofoam, aseptic boxes and many other forms. When we buy things at the grocery store, sometimes we have a choice to buy something with less packaging,

and sometimes we do not. In the US, more than 1/2 of the paper and glass produced, and about 1/3 of the plastics are incorporated in items with a lifespan of less than one year. Producing these packaging materials consumes 3% of the national energy budget.

There are many benefits to packaging. Packaging contains things that might otherwise be hard to handle (eggs), it keeps some products safe, clean or fresh, and it protects us from opening things that might otherwise be dangerous (medications). Packages enable companies to transport products and allow retailers to display the products.

However, there are some definite downsides to packaging. Oftentimes, a product that is heavily packaged can cost more than the same product if it is not in a fancy package. On average, packaging costs 1/10 of the price of the product. So, if something costs \$10, then \$1 is going to just the packaging of the product. Packaging uses natural resources such as petroleum for plastic or trees for paper. Packaging also contributes to an ever-growing litter problem and can harm wildlife. And packaging takes up a large amount of space in the landfill.

Fortunately, we have some choices when it comes to packaging. Some simple ways to combat packaging the following:

- Buy things in bulk, rather than buying single or small serving sizes.
- Buy things in containers that you know you will reuse.
- Buy things in containers that you know can be easily recycled.
- Bring your own re-usable grocery bags
- Use your own containers. Natural foods stores allow you to bring in your own containers for things like shampoo, soap, cereal, beans, etc.
- Skip the plastic bags when buying produce or be sure to use them over again.
- Avoid products that are overly packaged if you can. Perhaps there is a less-packaged alternative.

Materials:

-Bag o' trash (optional, if time)

-Examples of packaged food and other products

- Bad packaging examples – Lunchables, juice packs, snack packs, small toys, things with excessive plastic packaging, etc.
- Good packaging – apple or potato, canned tuna, etc.

-Example of an “earth-friendly” lunch (perhaps could be obtained from a student)

- reusable bag
- juice container
- durable silverware
- cloth napkin
- steel water bottle

-An over-packaged lunch – Lunchables or other lunch with lots of packaging (perhaps could be obtained from a student)

-Document to project – Packaging Fun Facts (Attachments)

-Handout – Packaging Profile (Attachments)

-Document to project- Packaging Prices (Attachments)

Procedures:

I. Introduction – 5 – 10 minutes

If time permits -

Pass garbage bag around and have students pull something out and set it on their desk.

How many students pulled out something that they would consider to be a “package”?

Ask students - what is a package?

Review basic recycling, reuse, and composting concepts if needed. Make list of things that can be recycled, reused or composted that students can refer to later on.

II. What is a Package? Benefits and Drawbacks – 10 - 15 minutes

Show students various packaged products sitting on display. What do all of these things have in common? They are all in some type of package.

Ask students the following and create two lists on the board.

What are some benefits to packaging?

- Packaging preserves and protects contents from damage during shipping and storage.
- Reduces spoilage.
- Keeps contents safe and sanitary.
- Identifies product, provides directions and ingredient information.
- Advertises and attracts sales.
- Convenient—it keeps the product together.
- Discourages theft.

What are the drawbacks?

- Packaging contributes up to 30% of the weight and 50% of the volume of household waste.
- Packaging wastes energy and natural resources.
- A lot of packaging is not biodegradable.
- Packaging contributes significantly to litter and pollution.
- Packaging costs more. About 10% of every dollar of a product goes towards packaging. See Packaging Costs page
- 90% of all packaging ends up in the trash.

The fact is, packaging is a significant part of our waste stream and wastes large amounts of natural resources. **Use Projectable Page – Packaging Fun Facts** to discuss the impact that packaging has on our environment.

III. Packaging Profiles – 20 minutes

- Have students break into groups so there are 5 to 6 groups per class. Pass out handout titled "Packaging Profile".
- Explain to the students that they are going to examine some items and really look at the packaging that goes with them. Explain to the students the difference between the “product” and the “package”. Give each group an item.
- Have students complete the worksheet, then present a brief summary to the rest of the class.

IV. Conclusion/Assessment – 5 – 10 minutes

An easy thing for students to relate to is their lunch. Show the difference in garbage between and “earthy-friendly” lunch and a Lunchable or not so earth-friendly lunch by using the examples. Ask students to imagine how much trash would be generated if every student brought a Lunchable for lunch everyday.

Conclude by relating to students that they have choices and that they can choose to buy things with different amounts of packaging. What they choose to buy has a big impact.

Attachments

Packaging Fun Facts

Packaging Profile Handout

Enrichment Options for EarthSmart Kids

Additional Resources

Packaging Costs



Packaging Fun Facts



- Americans generate about 4.5 pounds of garbage per person per day. (Source: <http://www.epa.gov/epawaste/nonhaz/municipal/index.htm>)
- The biggest single component of our waste stream is packaging. Every year, Americans toss out 72.4 million tons of packaging.
- About one-third of an average dump is made up of packaging material!
- Out of every \$10 spent buying things; \$1 (10%) goes towards packaging that is thrown away.
- Packaging represents about 65% of household trash.
- More than 20,000,000 Hershey's Kisses are wrapped each day, using 133 square miles of tinfoil. All that foil is recyclable, but not many people realize it.
- Americans throw away 25,000,000,000 styrofoam coffee cups every year!
- If you had a 15-year-old tree and made it into paper grocery bags, you'd get about 700 of them. A supermarket could use all of them in under an hour! This means in one year, one supermarket goes through 60,500,000 paper bags! Imagine how many supermarkets there are in the U.S.!!!

Some tips on buying recyclable packaging

- When you go grocery shopping, bring your own reusable shopping bag and avoid having to choose between paper and plastic!
- Paper bags, cardboard boxes, aluminum and tin cans, and glass bottles are all recyclable packaging materials. Choose them when you shop.
- Avoid packaging made with two or more different materials such as juice containers made of paper laminated with plastic or foil. These mixed material packages are not recyclable.



Packaging Profile

Product Name _____

Type of Product _____

Remember there is a difference between the “product” and the “package”. On this worksheet, your team will be answering questions that relate to the “package”.

1. What is your package made of?
2. Describe what natural resources were used to create the package. For example, if your package is made from paper, then the package came from trees.
3. Can any part of the package be RE-USED? Give an example of how it could be reused.
4. Can any parts of the package be RECYCLED where you live? Explain.
5. Do you think the PACKAGE is the right size for the PRODUCT that it contains? Explain.
6. Does your group feel that they could design a different package that would create LESS garbage? If so, what would it look like? Draw a picture below.

Attachment

Directions: Study your package. Fill in the answers below. If you can't answer a question, leave it blank. Decide how to make your package more sustainable.

Name of product: _____

Type of product: _____

Type of package: _____

Material(s) used for package: _____

Where do you think the package comes from? Is that far away?

How does the package help the product? _____

What will happen to the package now? _____

Is this a sustainable package? _____

If it is not, how can you change it to make it sustainable? If it is, what can you do to make it more sustainable? _____

Enrichment Options for EarthSmart Kids

Enrichment #1 – Buyer’s Choice, Part 1

Students can see all types of packaging when they go to the grocery store with their parents. Have them fill out the Buyer’s Economics worksheet to help them understand the different types of packaging available. The Buyer’s Economics worksheet can be found in DEQ’s **Rethinking Recycling** lesson **Packaging – The Good, the Bad, and the Ugly**. Access it here: <http://www.deq.state.or.us/lq/pubs/docs/sw/curriculum/RRPart0310.pdf>

Enrichment #2 – Buyer’s Choice, Part 2

Have students choose one or a few items that they have seen or bought at a store that they feel is over-packaged. Have students do a small amount of research on the manufacturer. Students can then send a postcard to the manufacturer asking them to consider alternative packaging. Postcards can be used from DEQ’s **Rethinking Recycling** lesson **Buyer’s Choice**. Access it here: <http://www.deq.state.or.us/lq/pubs/docs/sw/curriculum/RRPart0309.pdf>

Enrichment #3 – Waste-Free Lunch

Lunches are often the biggest trash-makers in a school. By encouraging students to bring a waste free lunch, schools can save a significant amount of trash from going into the landfill. That saves money, too! Have students organize a Waste-Free Lunch day either in their classroom or in the entire school. They can create posters and announcements to promote the program. They can also give away awards and incentives to individuals or classrooms that bring waste-free lunches.

Enrichment #4 – Use It and Lose It

Have student collect and save all of the packaging from one dinner in their household. Make sure all of the packaging is washed thoroughly. Students can then bring in their “dinner” to show the rest of the class. Students can also calculate the weight or volume of the trash.

Enrichment #5- Letter Writing for Change

Have students write a real or imagined letter to a store owner or manager persuading him or her to reduce the number of products with poor packaging on the shelves and carry more products designed to be environmentally friendly.

Have students write a real or imagined letter to the manufacturer of one of their favorite products asking them to switch to recyclable materials or to suggest an alternate packaging design that is more environmentally friendly.

Additional Resources

Waste-Free Lunches

- <http://www.resourcefulschools.org/teachers/school-activities/waste-free-lunch>
- <http://www.wastefreelunches.org/success.html>
- <http://www.ecomall.com/greenshopping/wastefree.htm>
- As always, kids say it best! Here is a great waste-free lunch website created by students for students: <http://library.thinkquest.org/06aug/00442/wastefreelunch.htm>

Packaging

- Zero Waste Alliance – <http://www.zerowaste.org>
- Use Less Stuff - <http://www.use-less-stuff.com/>
- Rethink Waste, Deschutes County- <http://rethinkwasteproject.org/rethink-waste-blog/where-in-the-world-is-my-recycling/>

Packaging Costs!

DID YOU KNOW???

Many times things that have more packaging are also most expensive! Here are some good examples found at the grocery store:

Potatoes:

- 1 large fresh potato - 59¢ per pound
- Safeway Canned potatoes - 84¢ per pound
- Betty Crocker Dehydrated Mashed Potatoes - \$4.40 per pound

Applesauce:

- Jar of applesauce - 96¢ per pound
- Single serving cups of applesauce - \$1.53 per pound

Cheez-Its:

- 1 box of Cheez-Its – \$4.29 per pound
- Individual bags of Cheez-Its - \$6.65 per pound

Trail Mix:

- Bulk trail mix - \$4.99 per pound
- Individual bags of trail mix - \$8.53 per pound.

Tuna Fish:

- Canned tuna - \$3.17 per pound
- Tuna lunch to go - \$6.72 per pound
- Tuna in a pouch - \$7.95 per pound