

Packaging

Grade: 4-5

State Standards:

Grade: 4; Science, Earth Science 5.a Students know some changes in the earth are due to slow processes 6. a. Students will differentiate observation from inference (interpretation) and know scientists explanations come partly from what they observe and partly from how they interpret their observations. Grade: 5 Investigation and Experimentation 6.a classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria.

Groups of 4

Preparation Time: 1 hour

Activity Time: 2 hours

Key Words: Packaging, reduce

OBJECTIVE

In this lesson, students will learn how to reduce packaging waste by comparing products that have minimal or excessive packaging. Students will bring in examples of packaging from home and work in groups to create a poster depicting ways to reduce packaging waste.

MATERIALS

Student: “Pack It Up Homework” sheet (one per student), One or two packages from home “Pack It Up” worksheet (one per group of four students), Poster paper and markers or crayons.

Teacher: Contrasting packaged items (i.e., single-serve juice containers and a large juice jug and an over packaged item toy).

BACKGROUND

Packaging serves a number of purposes. It is used to hold or contain a product such as bottles, bags, and molded plastic or paper packaging. Packaging also protects products from damage, prevents theft and makes it easier to display or transport products. Making packaging consumes a great deal of resources. Paper, steel, glass, aluminum, and plastic are all used to package products. Californians produce 66 million tons of solid waste per year and approximately one third of it is packaging. Ten cents of every dollar spent on a product goes towards the cost of packaging. (<http://planetgreen.discovery.com/>)

Reducing the need for packaging can greatly reduce the amount of paper and plastic waste in Tehama County. We can reduce waste from packaging by purchasing products that have the least amount of packaging (e.g., not purchasing single-serve packages)

Vocabulary:

Packaging: a container or wrapping such as paper, plastic, metal, etc., used to protect, transport, display or store a product.

Reduce: to use less “stuff” and produce less waste.

PROCEDURE

Be prepared to divide the class into groups of four for the in class activity. Assign students to bring in packaging from home as homework the day before the lesson.

Discussion

1. Tell the students that they will be learning about the top of the 4Rs hierarchy. Ask students whether they can define “reduce.” Put a definition on the board, e.g., “to decrease the amount of waste generated.”
2. Ask the students what they know about packaging. Ask them to share examples of something they buy that comes in packaging.
3. Describe how packaging protects products, conveys important information about the product and prevents theft. For example, a CD case protects the CD from being broken and provides a place to display information and to insert anti-theft devices.
4. Show the students contrasting packaged items, e.g., a single-serve juice container and a large juice jug. Ask the students what is left over from the single-serve juice pack after the juice has been consumed (the juice packaging and the plastic straw and plastic wrapper on the straw).
5. Ask the students what would be left over if they used reusable cups for everyone to get juice from a large juice jug. Recycling of one large juice jug requires fewer resources than discarding dozens of small juice packages and straws. The juice jug can also be recycled. Show other examples of excessive packaging that you brought to class.

For Homework:

1. Ask students to list examples of packaged items they might find at home. For example, in the kitchen they might find cereal, snack food, chips, and ice cream. Other items may include gum wrappers, shoe boxes, containers for toys, etc.
2. Have a few students estimate how many of these items come in bulky or unnecessary packaging.
3. Assign students to bring two items to class from home that they think have minimal or excessive packaging for the next day’s in-class work.
4. Distribute the “Pack It Up Homework” sheet, and model how to complete it using an overhead. From question number one, have the students pick five items to complete their homework assignment.

In-Class:

1. As a whole class, discuss some of the findings from their homework sheet.
2. Ask students how their estimates of minimal or bulky packaging they might find at home compare to their findings on the homework sheet.

3. Place students in groups of four, and give each group a copy of the “Pack It Up” worksheet.
4. Show the overhead of the group worksheet and model how to complete it. Ask the students to place their packaging items from home in one pile. Redistribute packaging as necessary.
5. In groups, have students share the packages they brought in and have them identify ways to reduce the packaging, if it’s possible. For example, toys are usually sold in unnecessary packaging. Cereal can often be bought in bulk or large boxes. Soup can be made at home from fresh vegetables, water and seasoning. Lunch food can be placed in reusable plastic containers. Bananas and apples don’t need to be put into plastic bags before they are purchased.
6. Have each group share with the entire class one item they chose with ways to reduce its packaging.
7. Have each student make a drawing that says and depicts one way of reducing packaging. On the back of the poster, have the students list two more ways of reducing the need for packaging.

Write the word “reduce” on the board. Ask the students to help write a definition for “reduce.” Ask the students why “reduce” is at the top of the hierarchy. (By generating less waste in the first place, we are conserving natural resources, e.g., trees used for paper packages, petroleum used for plastic, etc.). Then discuss the importance of reuse and recycling, if you can not reduce.

Final Assessment Idea

Provide students with three types of packaging choices for a product, e.g., orange juice in a 58oz. plastic jug, gallon paper carton and six packs of individual containers. Have students write an essay explaining which packaging has the least amount of waste and which choice they would buy, justifying why they would choose to buy it.

Extensions

1. Have students choose a product they like that they think comes in excessive packaging. Have them describe, in writing, how they would redesign the packaging to reduce waste. They must design packaging that protects the product and makes it easy to store and transport the product.
2. Have students write a letter to the product manufacturer suggesting the manufacturer reduce the product packaging.
3. Review the temperature-controlled packaging on the following websites <http://www.labelmaster.com/Shop/shipping/packaging/temperature-controlled-packaging> <http://spcdesignlibrary.org/items/view/42>. Compare and contrast the two packaging options and compose your opinion on which design has less of an environmental impact

and why. Consider resources used to make the packaging, the durability of the packaging for reuse and the packaging design for product distribution.

Teachers note: Students should think through resource conservation and product durability. The final point has to do with the fact that the Greenbox retains product temperature that allows for ground shipping of temperature sensitive products. Traditional styrofoam and cardboard packaging requires air distribution if sending a greater distance, since it doesn't retain temperature as efficiently.

ASSESSMENT

Students should have a clear understanding of landfill waste in Tehama County and the importance of reducing, reusing, recycling, and/or composting natural resources. Please refer to the Tehama County Landfill website:

http://www.co.tehama.ca.us/index.php?option=com_content&task=view&id=120&Itemid=245 as a reference.

Pack it Up Homework

Describe 5 different Items from home

Name the Item	Describe the packaging	Is this packaging needed?	Why is this packaging used?
1			
2			
3			
4			
5			

Write a definition of reduce and how it can be applied to your five items.

Pack It Up Worksheet

Directions: Select five of the items that the group members brought from home, and answer the questions below for each item.

Name the Item	Describe the packaging	Is this packaging unnecessary?	Is the packaging reusable or recyclable?	Is there a way to reduce the packaging and still retain the quality of the item?
1				
2				
3				
4				
5				

