

It's a Wrap!

Grades K-5

Lesson Summary

Students analyze packaging of everyday items and learn how to conserve natural resources and reduce litter and waste.

Overview

In this lesson, students will:

- Discuss the purpose of packaging.
- Compare amount of packaging used for different cookies.
- Identify the waste created by packaging.
- Determine which packaging is easier to recycle.

Time

45-60 minutes to prepare lesson; 60 minutes for lesson

Background

Packaging has many uses and benefits. It protects the contents from spoiling or getting damaged, and helps keep the contents clean. Package labels identify contents and provide directions for use. Packaging may also help retailers advertise their goods, keep sales records straight and prevent theft. Packaging also provides consumer convenience. It may reduce waste by dividing food and beverages into individualized portions, which reduces leftovers.

Unfortunately, packaging makes up a large volume of trash since most packaging is meant to be thrown away after one use. Packaging depletes natural resources, adds litter and pollution to the environment, and increases the cost of a product. For every dollar spent on a product, 10 cents is for packaging)Some packaging materials don't biodegrade and contain contaminating toxic materials. Common packaging that often ends up as litter includes cans, bottles, paper wrappers, and plastic and paper bags.

Generally, packaging is considered excessive when it is purely for the convenience of the retailer or consumer, used only for advertisement, or is not related to protecting contents from being spoiled or damaged. One way to reduce excessive packaging is to encourage manufacturers and to voluntarily reduce packaging and do research into new packaging that is less harmful or wasteful. Another way to reduce packaging is for federal and state governments to create regulations that promote the use of reusable, recyclable, and compostable packaging that is not harmful to the environment. These regulations can take the form of container deposits, financial incentives, and bans on specific packages.

When we buy something, we also buy the packaging. We can all be wise consumers and avoid purchasing over-packaged items. We can also make sure that packaging does not become litter, and that packaging is reused or recycled. If it is waste, we need to learn how and where to dispose of it properly.



Vocabulary

- Packaging
- Natural resources

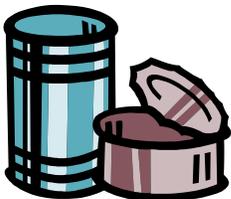
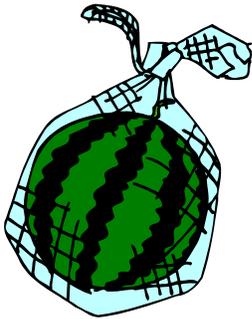
Materials

Select any type of cookie that is similar in type, like chocolate chip. The purpose is to compare similar types of cookies with different packaging.

- Five packages of cookies that include:
 - (1) packaged bulk cookies (e.g. those baked by store);
 - (2) bulk prepackaged cookies;
 - (3) cookies in a tray;
 - (4) cookies divided into small groups by paper cups;
 - (5) other cookies packaged differently (e.g. individually packaged)
- Samples of packaging that students are familiar with (e.g. prepackaged lunches)
- Four copies and one transparency of *It's a Wrap!* Chart
- Clean cloth towels or reusable plates
- Rubber gloves or sandwich bags

Preparation

- Read the background information on front page
- Ask students to bring to class a variety of packaging materials like cans, boxes, and plastic bags. Have extras on hand
- Make four copies and one transparency of *It's a Wrap!* chart or make one large chart for younger students.



Pre-Activity Questions

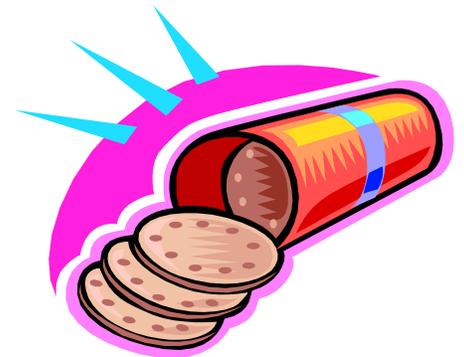
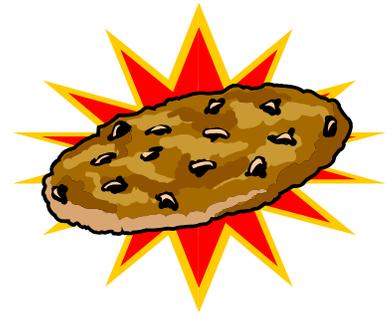
1. Ask students if most of the litter they see at school is packaging material? (*Yes*) Why?
2. Ask students to discuss the packaging they brought from home.
3. Have students separate packaging into categories. Allow them to select whatever categories they choose, but note how they decide to do this. Did they classify by type of material or by whether it can be reused or recycled, or by some other method?
4. Ask students why things need to be packaged. You might show students something they are familiar with, such as a “pre-packaged lunch.” Have students examine the packaging.
5. Have students discuss the purposes for packaging (*protecting the product, marketing, safety*) List ideas on the chalkboard.
6. Have students help you list disadvantages to overpackaging. (*wastes natural resources, could become litter*)
Note: the interpretation of “overpackaging” can vary from person to person.

Procedure

1. Ask Students:
 - Do you ever eat cookies as snacks at home?
 - What type of packaging do the cookies usually come in?
2. Show students the five packages of cookies. Have students guess which cookies they think will produce the least amount of packaging wasted and which ones will produce the most. Write their guesses on the chalkboard and compare this to their findings at the end of their activity.
Note: With younger students, consider doing the following activity as a class, analyzing one package of cookies each day.
3. Divide the class into four teams.
4. Provide a copy of *It's a Wrap!* chart to each group.
 - Analyze one package of cookies as a class and complete the first row on the *It's a Wrap!* chart.
 - Assign each team a number from two through five (to correspond to the numbers on the *It's a Wrap!* chart).
 - Give each team a different package of cookies to analyze.
 - Provide rubber gloves or sandwich bags with which students should handle the cookies.
5. Ask students to complete columns “A” through “D” on the chart for the number they were assigned.
 - They should estimate the number of pieces of packaging and the number of cookies in the package.
 - They should then look at the outer packaging and open the package to see whether there is additional packaging inside.
 - They should count the pieces of packaging and then count the cookies and record their findings on their charts.

Note: When counting the number of cookies, students may have to spread the cookies out on a towel.

6. Have students identify the different types of packaging (paper bag, plastic coated bag, plastic tray, paper cups). Help them to complete column “E” in *It’s a Wrap!* chart.
7. Ask groups to present their findings to the class. Record these.
8. Discuss with students why they think the manufacturer chose each type of packaging. (*To keep the product safe, to advertise, to keep contents from breaking.*)
9. Ask students:
 - What were the differences between your estimates and the actual number of packaging and cookies?
 - Were you surprised at the actual number of pieces of packaging and cookies? Why or why not?
 - Do you think that all the packaging is necessary? Why?
10. Ask students to determine whether there is unnecessary packaging in the package of cookies that they were assigned and to circle “yes” or “no” in column “F” in the chart. Ask groups to show the class which pieces of packaging are not necessary and to explain why.
11. Ask students whether any of the packaging can be reused or recycled. Have students record their answers in column “G” of the chart. Does any of the packaging contain recycled material? (This information would be printed outside package.)
12. Discuss the pros and cons of packaging for cookies and ask students to draw or write two sentences or a paragraph on what they learned about packaging.



Discussion/Questions

1. What did you learn about packaging today?
2. What surprised you about the ways cookies are packaged?
3. Which cookie packaging produced the most waste? How do your results compare with your earlier predictions?
4. What can you do to conserve natural resources and lower your production of waste in regard to cookie buying and packaging?
Buy cookies with the least amount of packaging; buy cookies in reusable or recyclable packaging.

Extensions

- Have students create art projects using packaging materials.
- Have students weigh the package with cookies, then just the package. How much of the weight is packaging material?
- Have students design a package for cookies that will protect the cookies but will not have “excessive” packaging. Students could send their ideas to a cookie manufacturer.

Ask students to make a connection between the natural resources used for a piece of packaging and the animals that might live in the area where the resource was extracted. (e.g. aluminum comes from bauxite which is mined in part from the rainforest.)



It's a Wrap!

CA Standards K-5



Kindergarten

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| Mathematics ♦ A1.1 | Students identify, sort and classify objects by attribute and identify objects that do not belong in a particular group. |
| Science ♦ 1a | Properties of materials can be observed, measured, and predicted. As a basis for understanding this concept, students know objects can be described in terms of the materials they are made of and their physical properties. |
| ♦ 3c | The Earth is composed of land, air, and water. As a basis of understanding this concept, student knows how to identify resources from the Earth that are used in everyday life, and that many resources can be conserved. |
| ♦ 4 | Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept...students will: |
| ♦ 4b | Describe the properties of common objects. |
| ♦ 4d | Compare and sort common objects based on one physical attribute. |
| ♦ 4e | Communicate observations orally and through drawings. |

Abbreviations

Language Arts: R=Reading; W=Writing; LC= Language Conventions; LS=Listening/Speaking

Math: N=Number Sense; A=Algebra; MG=Measurement/Geometry; S=Statistics/Data Analysis; MR=Mathematical Reasoning



Grade 1

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| | Sort objects and data by common attributes and describe the categories. |
| | Represent and compare data by using pictures, bar graphs, tally charts, and picture graphs. |
| Science: ♦ 4b | Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept...students will record observations and data with pictures, numbers, and/or written statements. |

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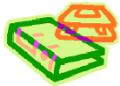
Grade 2

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| History/Social Science ◆ 2.4.3 | Students understand basic economic concepts and their individual roles in the economy, and demonstrate basic economic reasoning skills, in terms of how limits on resources affect production and consumption. |
| Science ◆ 3e | Earth is made of materials that have distinct properties and provide resources for human activities. As the basis for understanding this concept, students know rock, water, plants, and soil provide many resources including food, fuel, and building materials that humans use. |
| ◆ 4 | Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept...students will: |
| ◆ 4a | Make predictions based on patterns of observation rather than random guessing. |
| ◆ 4c | Compare and sort common objects based on two or more physical attributes |
| ◆ 4g | Follow oral instructions for a scientific investigation. |

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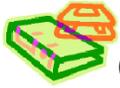
Grade 3

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| History/Social Science ◆ 3.5.3 | Students demonstrate basic economic reasoning skills and an understanding of the economy of the local region, in terms of how individual economic choices involve trade-offs and the evaluation of benefits and costs. |
| Science ◆ 5 | Scientific progress in made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept...students will: |
| ◆ 5c | Use numerical data in describing and comparing objects, events, and measurements. |
| ◆ 5d | Predict the outcome of a simple investigation, and compare the result to the prediction. |

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Grade 3 (continued)

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| Language Arts ◆ W1.1 | Create a single paragraph: a. Develop a topic sentence. b. Include simple supporting facts and details. |
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Grade 4

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| Language Arts ◆ LS1.1 | Ask thoughtful questions and respond to relevant questions with appropriate elaboration in oral settings. |
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Grade 5

| | |
|------------------------|---|
| Science ◆ 6g | Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept...students will record data by using appropriate graphic representations (including charts, graphs and labeled diagrams) and make inferences based on those data. |
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