

Food Packaging

THEME: EXPLORING THE ECOLOGY OF FOOD

4TH
GRADE

45
MIN.

SPRING

ESSENTIAL QUESTION

How does the packaging of our food affect our environment?

LEARNING OBJECTIVES

- ✓ Students will be able to evaluate the pros and cons of certain materials used for food packaging.
- ✓ Students will be able to identify various materials and determine whether they are recyclable or compostable.

CONCEPTS

biodegradable landfill
packaging recyclable

ENGAGING THE CLASSROOM TEACHER

During Action Steps 2, 3, and 4, suggest that the teacher circulate through the room, supporting students and helping them remain on task.

LESSON DESCRIPTION

In this lesson, students consider how an orange comes with its own perfect packaging, and they sort other food packaging to determine the materials used and whether they are recyclable or compostable.

MATERIALS

- Clementine for each student
- Assortment of food packaging, from minimally packaged to highly packaged and some packaging made with postconsumer materials, such as beverage bottles or deli containers made from recycled plastic
- Small, soft ball (to toss among students)
- Food Packaging Source Materials Poster (p. 469)
- Local municipal recycling chart
- Several small bins for each group
- Vinyl tablecloth

PREPARATION

- › You may want to start collecting cleaned food packaging several weeks before implementing this lesson to have a sufficient amount for sorting stations. One way to get a lot of items quickly is to set up a box in a shared space, such as a teachers' lounge, and email school staff asking them to bring in empty, rinsed food packages.
- › On an overhead, project a local recycling chart, or photocopy one for each group.
- › Prepare a set of four or more food packages for each group of 4–6 students. Make sure each set includes a variety of materials (e.g., cardboard, metal, glass, plastic, or natural) and ranges from minimally to highly packaged foods.
- › Photocopy Food Packaging Source Material Posters for each group of students.

ACTION STEPS

1. Perfectly Engineered Packaging: Gather students in a circle, and pass around a small orange or clementine to each student. Ask students to think about the function of the orange's peel. Ask, *Why do oranges have a peel?* Field answers, and get to the idea that the peel protects the fruit and keeps it clean. Say, *The orange comes with its own packaging. How are other foods that we eat packaged?* Hear responses from students and then explain, *Today, we're going consider the different ways our food is packaged.* Divide students into groups of four to six, and provide each group with an assortment of food packaging. **(5 min.)**

2. Sorting the Spectrum of Packaging: Have groups of students sort their objects into a spectrum from those with the least amount of packaging to those with the most. As a class, discuss, students' observations and choices while sorting. **(5 min.)**

3. Sorting by Where It Came From: Next, hand out the Food Packaging Source Materials Poster, and go over each material. Have each group sort their objects by the materials used. **(5 min.)**

4. Sorting by Where It's Going: Next, project or hand out the recycling chart for your community to each group. Provide each group several small sorting bins or baskets. Or create one central waste-and-recycling center in the classroom. Have students sort materials again, this time by which are recyclable in your community, which can be composted, and which are destined for the landfill. **(5 min.)**

5. Reducing Your Waste: Once each group has their packaging sorted by where it's going, ask them to bring their landfill items to the vinyl tablecloth you've laid on the ground, making a big class pile. Have students make observations about the pile. Ask, *Are there any items you see here that we could avoid having in the landfill?* Discuss alternative approaches to reducing waste, such as using reusable bags and bulk bins. Ask, *What about objects that we recycled? Are there ways we can reduce sending objects to recycling facilities?* Hold up a plastic water bottle and ask, *What are other ways to get the water without the waste?* As you're discussing single-use plastics, you might introduce the story of the youth activist Milo Cress who started the Be Straw Free campaign when he was nine. **(10 min.)**

6. Compost Hot Potato: Explain how composting is another way to divert waste from landfills. Say, *Compost creates a free, organic "fertilizer" for our plants; it reduces waste that would otherwise go to the landfill; and it takes carbon from decomposing plants that would otherwise go up into the atmosphere and instead holds it in the soil!* Make a list of all the things that are biodegradable that they can think of and things you could add to a compost pile. Say, *We're going to play a game called compost hot potato. I'll toss the ball to someone and name something we could add to a compost pile. The person who is "it" will stand in the middle and try to tag someone before that person thinks of something new and tosses the ball to another person. If you get tagged before you think of something to add to the compost pile, you're it!* Play the game for several rounds. **(10 min.)**

Have students discuss the following questions in small groups, then share with the class: **(5 min.)**

Social and emotional learning

- *Ask yourself: Was I safe and responsible while we played the game?*

Check for understanding

- *What are ways we can reduce our use of packaging?*
- *What did you learn today that you'd like to share with others?*
- *What types of packaging do you think are best?*
- *How does the use of food packaging affect our environment?*

ADAPTATIONS

Classroom Extension: Have students choose a food for which to design their own food packaging. Ask them to consider protecting and marketing the food as well as creating packaging that has the least environmental impact.

Cafeteria Extension: Explore the possibility of conducting a school-wide waste audit with students. Consult the USDA resource Guide to Conducting Student Food Waste Audits.

Mentor Extension: Use the lesson Becoming Cafeteria Mentors as a model for how fourth graders can teach younger students about food packaging and reducing waste.

Food Packaging Source Materials Poster

PLASTICS are typically made of crude oil and coal or natural gas.



**FOOD
PACKAGING
SOURCE
MATERIALS**

GLASS is made by heating sand until it melts and turns into liquid.



METAL CANS are made of steel or aluminum.



NATURAL/BIODEGRADABLE objects are anything that was once alive!



CARDBOARD is made of fiber from trees.

