

FOOD WASTE

Summary: In this lesson, students explore the common causes and environmental and community impacts of food waste. They brainstorm potential solutions to reducing food waste, in their own lives and more broadly.

Learning Goals and Objectives: Students will be able to describe the common causes, and environmental and community impacts of food waste, and propose potential solutions to reducing food waste.

Materials:

- Food Waste Presentation (Included below)
- Food Waste Worksheet (Included below)
- Projector
- 2-3 very misshapen fruits or vegetables
- 2-3 empty restaurant take-out containers
- 2-3 packaged food items with 'expired' sell-by dates but that are not spoiled.

Vocabulary:

- Food waste
- Landfill
- Greenhouse gas
- Expiration date



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Before You Begin

- Set up projector
- Print out student copies of Food Waste Worksheet (included below)
- Set up a few Food Waste Stations around your classroom. Each should include examples of: misshapen fruits/vegetables, empty take-out containers, and packaged food items with expired sell-by dates

Warm Up, 10 min

- Project slide #1 in Food Waste Presentation (included below) illustrating the average monthly food waste per American household. Have students respond to the following prompts:
 - This image shows the average monthly food waste per American household. What do you notice? What are your reactions? Does this surprise you? Why or why not? What questions do you have?
- Debrief the warm-up as a class. Make sure everyone understands the term “waste” - in this context it means this food is edible, but ends up being thrown out or spoiling before can be eaten.

The Impact of Waste, 5 min

- Ask: Where does this waste go? Some might be composted, but most of it goes to landfills.
- Show students slides #2 and #3 in Food Waste Presentation showing images of landfills.
- Pair Share:
 - What are the impacts of throwing food into landfills for the environment?
 - What are the impacts of throwing food into landfills for communities?
- Discuss as a full class. Environmental impacts of food waste include:
 - Large amounts of methane gas, a greenhouse gas, are produced as food rots in landfills. This contributes to climate change.
 - Landfills destroy habitats and ecosystems and lead to loss of biodiversity. Aside from pollution, one reason for this is that as rat populations and other vermin that feed on trash move into landfill sites, they out-compete the local species.
 - When it rains, the water that runs off from landfills often contains toxic waste and chemicals, which leads to pollution and ecosystem destruction in the areas surrounding landfills, especially water and soil.
 - All the resources that went into producing the food in the first place (water, fuel, nutrients etc.) are wasted.



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- Community impacts of landfills include:
 - Health risks from chemical runoff and pollution in the air, water and soil surrounding the site, including respiratory illnesses and birth defects.
 - Often landfills smell bad and look ugly. This can lead to major loss in property value.
 - Bacteria, rats and other vermin that feed on trash can carry diseases that pose risks to local communities.
 - The food wasted is unable to be eaten by those who might really need it.

Main Activity: Food Waste Stations, 20 min

- Introduce the activity. Students will explore the items at the Food Waste Stations set up around the room and fill out the Food Waste Worksheets. Have students work alone or in pairs.
- Debrief the Food Waste Stations activity. What proposals did students develop to prevent the food in the activity from going to waste?

Reflection: Personal Food Waste, 5 min

- Think-Pair-Share
 - How much food would you say you waste in an average week? What kind of foods do you most frequently waste? What are the main reasons that cause you to waste food?
 - Can you think of any solutions to help cut down on the food that you waste in a week? Are any of these potential solutions easy to implement?

Exit Ticket

- What is one potential action you could take to reduce the amount of food you waste. Would you like to try it? Why or why not?

Lesson References

1. World Resources Institute, 2013
(http://www.wri.org/sites/default/files/reducing_food_loss_and_waste.pdf).
2. California Academy of Sciences' " *The Environmental Impact of Feeding the World Journal*" (<https://www.calacademy.org/educators/lesson-plans/exploring-the-impacts-of-feeding-the-world>)

Food Waste Student Worksheet

Food waste is food that is thrown away because it is either undesirable or inedible. At this station, you will learn more about some of the reasons why food is thrown away. At your station, you have a variety of food items. ALL of these items are very often thrown away and contribute to the **20 lbs of food waste** that the average American produces every day!

1. Next to each food item below, write a hypothesis for why you think it is often thrown away, and one reason why you think it should or should not be thrown away.

A. Misshapen produce (fruits and vegetables)

B. Leftover take-out food

C. Food with an 'expired' sell-by date

Food Waste Student Worksheet

2. Describe the different food items at your station. Do any of them look inedible or spoiled? Do they smell bad? How do you think a packaged food item's 'sell by' date is determined, and what exactly does it mean?

3. Can you think of a few ways you could keep these food items from going to waste? List them below:

Example: we could donate leftover food to a food bank.

Into the Trash It Goes

A federal study found that 96.4 billion pounds of edible food was wasted by U.S. retailers, food service businesses and consumers in 1995 — about **1 pound of waste per day** for every adult and child in the nation at that time. That doesn't count food lost on farms and by processors and wholesalers.

For a family of four people, that amounted to about **122 pounds of food thrown out each month** in grocery stores, restaurants, cafeterias and homes. Here is a depiction of that family's monthly share, the sum of waste in eight different food groups as detailed in the study.



WARM UP

This image shows the average monthly food waste per American household.

- What do you notice?
- What are your reactions? Does this surprise you? Why or why not?
- What questions do you have?





PAIR-SHARE

- What are the impacts of throwing food into landfills?
 - For the environment?
 - For communities?

PAIR-SHARE

- How much food would you say you waste in an average week? What kind of foods do you most frequently waste? What are the main reasons that cause you to waste food?
- Can you think of any solutions to help cut down on the food that you waste in a week? Are any of these potential solutions easy to implement?

EXIT CARD

What is one potential action you could take to reduce the amount of food you waste. Would you like to try it? Why or why not?