



CALIFORNIA
ACADEMY OF
SCIENCES

Food Waste Audit

GRADE LEVEL	3rd - 12th Grade
SUBJECTS	Analyze and Interpret Data, Patterns
DURATION	60 minutes
SETTING	Meal time, classroom

OBJECTIVES

In this lesson, students will:

- collect data on their food waste.
- analyze and interpret students-collected data.
- design some solutions for preventing food waste.

MATERIALS

- Food Waste Audit worksheet
- A meal

BACKGROUND FOR EDUCATORS

The global food demand is projected to increase by 60%-100% by 2050 as preferences shift towards richer diets. We can address at least part of the future demand by growing more crops, but meeting the world's needs will require as much attention to our diets, reducing food waste, and improving food security worldwide.

Worldwide, we grow enough food to meet everyone's needs, but food waste dramatically reduces the available food supply. That's a problem for global food security as well as our climate given the huge amounts of greenhouse gases that go into producing the wasted food.

An estimated 25% of the world's food calories and up to 50% of total food weight are lost or wasted before they are consumed. But the food we directly throw away as consumers is simply one layer of the problem. The majority of the environmental impact of food waste is not from the food rotting in the refrigerator or spoiling in a field. Deep impacts stem from the agricultural resources needed to grow the food in the first place. Wasted food means that we waste all of the resources that went into agricultural production, like fertilizer, water, and energy.

EDUCATOR PREP

1. Decide which meal your students will collect data.
2. Print 1 Food Waste Audit worksheet per student
3. Determine how you will collate your class data.

INTRODUCTION

Introduce the concept of food waste. Ask students:

- Raise your hand if you have ever thrown away food after a meal.
- What are some of the reasons you threw away food?
- Raise your hand if you have ever thrown away a whole piece of food. For example a whole apple or a loaf of bread.
- What are some of the reasons you threw away that food?

FOOD WASTE AUDIT

1. Instruct students they will be collecting data to learn about their own food waste after a meal.
2. Assign a meal time students will be looking at their food waste: lunch or dinner are highly recommended.
3. Demonstrate how to use the Food Waste Audit worksheet to document the data.

Each day of the week students will:

1. Check off the type of food wasted after their meal.
If there are other types of food not listed, have students write it in under the "Other" section.
2. Write in the reason why the food was wasted.
Examples of reason include "I don't like it", "I didn't have to time to eat it", "Food was damaged or looked bruised", and "I was full".
3. At the end of the collecting data time frame, have students write down the patterns they notice in the foods they wasted and the reasons why they threw them away.

ANALYZE & INTERPRET DATA

In pairs ask students:

- Compare their data. What do you notice that is the same and different from your partner's data?
- Do you notice any patterns when comparing the food they wasted?
- Do you notice any patterns when comparing the reasons why they threw the food away.?

Food Waste Audit

As a class:

1. Collate your students' data for types of foods and reasons why food was wasted. Below are two examples of how you might collate your class data.
 - You can enter data into a class data table. A class data table can be a powerful tool so that everyone can look at the same data.

Reasons why food was thrown away	Number of times food was wasted
I don't like it	
I don't have time	
Food was damaged	
I was full	

- You can make an open data table at the front of the class. Students will be responsible for filling out parts of the class data table. Students then can put the data they collected in their audit into the larger data table created by you.



2. Ask students:
 - What are the patterns you see with the class data?
 - How does it compare to the data?
3. Write down all the reasons why students' food was wasted. Brainstorms solution to each of the reasons.

Teacher Tip: Check out the Resources section for solutions San Francisco Environment and Spain use to prevent food waste.
4. Challenge your students try one of the solutions for a week. Keep track of their progress through out the week.

WRAP UP

Ask students:

- Are there other data, measurements, or information that would be helpful in assessing food waste?
- What was challenging about doing the Food Waste Audit?
- What might you try differently next time?

EXTENSIONS

Flipside Science: Reducing Food Waste

This video, explores some easy ways you can help reduce food waste.

www.calacademy.org/educators/reducing-food-waste

Reducing San Francisco's Landfill Waste

Learn about how San Francisco is approaching food waste in landfills in this classroom activity.

www.calacademy.org/educators/lesson-plans/reducing-san-franciscos-landfill-waste

RESOURCES

Love Food?

Try these tips from San Francisco Environment to prevent food waste and save money before you shop, at the grocery store, and once you're at home.

sfenvironment.org/love-food

To Cut Food Waste, Spain's Solidarity Fridge Supplies Endless Leftovers

This news story is about a community fridge in Spain, and includes a radio broadcast version.

boisestatepublicradio.org/post/cut-food-waste-spains-solidarity-fridge-supplies-endless-leftovers#stream/0

Foley, Jonathan. "Feeding 9 Billion - National Geographic." Feeding 9 Billion - National Geographic, National Geographic, www.nationalgeographic.com/foodfeatures/feeding-9-billion/.

Foley, Jonathan. "So, What Can I Do?" The MACROSCOPE, 19 Sept. 2016, the-macroscope.org/so-what-can-i-do-bfd03e46974e#.66v3ef5x1.