

Growing Fields:

Your Future in Food

A Career-Focused Initiative of Raising Nebraska

WASTED FOOD

This lesson aims at bring the STEM skills of inquiry, critical thinking, problem solving, & resiliency to life through hands-on learning and connecting STEM concepts with career opportunities.

LEARNING OBJECTIVES

- By the end of the lesson, students should be able to:
- Understand how food is wasted in the United States.
 - Demonstrate how to reduce food waste.

GRADE LEVEL
4-6

LESSON LENGTH
30 Minutes

STEM Careers

Life Skills

EDUCATIONAL STANDARDS SUPPORTED

SC.5.8.2.C Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

SC.5.13.4.C Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.

SC.4.13.4.D Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

Related Activities
USDA Food Waste Challenge:
www.usda.gov/oce/foodwaste/webinars/K-12/Webinar.pdf

Materials List

Carrots or other fruits and vegetables
Knife to cut open carrot or other food
Cutting board

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PREPARATION

According to the Environmental Protection Agency in the United States, approximately 40 percent of the available food supply at the retail and consumer levels went uneaten. This may be from food that is not harvested, misshapen fruits and vegetables that are not sold, food not eaten on the plate, or food that spoils at home because it could not be used fast enough.



Wasted Food (continued)

Introduction



Did you know that most baby carrots come from odd-shaped carrots that have been whittled down by a machine? The baby carrot is the core of the carrot. This method both avoids and causes waste. Can you think of how that happens? Using misshapen carrots helps prevent throwing them away but much of the carrot is still wasted in the reshaping.

OPENING QUESTIONS

- Do you usually eat all of your lunch?
- Do you like eating food that has blemishes or is misshapen?
- Just because a piece of produce looks different, doesn't mean it tastes worse. It may actually taste better. Older fruits are often sweeter as they have a higher sugar content.
- Why do you think food is wasted?

Activity 1: Eating Carrots

Vocabulary

Food Waste: food that is discarded or lost because it is uneaten

Find an odd-shaped or even blemished carrot and cut it open to reveal a “normal” looking interior. Have the class do a taste test of blemished or misshapen produce compared to traditional produce. Is there a difference? Ask the class to vote on which tastes better. This activity can be repeated using various fruits including bananas, apples, peaches; and vegetables such as carrots, potatoes or peppers. Show students that blemishes are usually in only part of the fruit or vegetable. They can cut out the blemish and eat the rest. Encourage students to try the taste test at home with their families.

Activity 2: Cut Down Food Waste

Do a taste test comparing peeled and unpeeled carrots. Let students try some broccoli stalks (cooked or uncooked). Have them eat a raw potato. Try other fruits or vegetables that are usually prepared a certain way. Remember to wash produce before the students try the foods.

Activity 3: Date Labeling

Introduction:

The new voluntary initiative streamlines the many date labels on consumer products packaging down to just two standard phrases. “BEST If Used By” describes product quality, where the product may not taste or perform as expected but is safe to use or consume. “USE By” applies to the few products that are highly perishable and/or have a food safety concern over time; these products should be consumed by the date listed on the package – and disposed of after that date.

Some current commonly used food label date phrases:

- A **“Best if Used By/Before”** indicates when a product will be of best flavor or quality. It is not a purchase or safety date.
- A **“Sell-By”** date tells the store how long to display the product for sale for inventory management. It is not a safety date.
- A **“Use-By”** date is the last date recommended for the use of the product while at peak quality. It is not a safety date except for when used on infant formula as described below.

REFERENCES

Food: Too Good to Waste

https://www.epa.gov/sites/production/files/2016-02/documents/implementation_guide_and_toolkit_ftgtw_2_1_2016_pubnumberadded508_alldocuments.pdf

Food Waste: An Educator's Guide

<http://www.msnbc.com/msnbc/teaching-kids-waste-less-food>

USDA Shelf-Stable Food Safety <https://www.fsis.usda.gov/>

Wasted Food (continued)

Safety After Date Passes

With an exception of infant formula, if the date passes during home storage, a product that is not protein based (meat, poultry, fish, etc.) should still be safe and wholesome if handled properly until the time spoilage is evident. Spoiled foods will develop an off odor, flavor or texture due to naturally occurring spoilage bacteria. If a food has developed such spoilage characteristics, it should not be eaten.

Microorganisms such as molds, yeasts, and bacteria can multiply and cause food to spoil. Viruses are not capable of growing in food and do not cause spoilage. There are two types of bacteria that can be found on food: pathogenic bacteria, which cause foodborne illness, and spoilage bacteria, which cause foods to deteriorate and develop unpleasant characteristics such as an undesirable taste or odor making the food not wholesome, but do not usually cause illness. When spoilage bacteria have nutrients (food), moisture, time, and favorable temperatures, these conditions will allow the bacteria to grow rapidly and affect the quality of the food. Food spoilage can occur much faster if food is not stored or handled properly. A change in the color of meat or poultry can be an indicator of spoilage. Date labeling should be followed for protein foods.

Can Food be Donated After the Date Passes?

Yes. The quality of perishable products may deteriorate after the date passes but the products should still be wholesome if not exhibiting signs of spoilage. Food banks, other charitable organizations, and consumers should evaluate the quality of the product prior to its distribution and consumption to determine whether there are noticeable changes in wholesomeness.

Activity:

Set up 2 display tables, Table 1 labeled Use By date and Table 2 labeled Best By date.

In pairs, children locate date marks on the packaging and then place these items on the appropriate table.

Children then draw conclusions about the possible difference in meaning of these terms based on the following questions:

- What do the separate food products have in common?
- How are the food products usually stored?
- What happens to the separate food products with the passing of time?
- How long will the separate food products remain edible?

Children then write their definitions for the meaning of each date mark and paste it on a sheet of paper under the headings Use By date and Best By date.

Wasted Food (continued)

By making small shifts in how we shop, store and prepare food, we can toss less, eat well, simplify our lives and save money. We can also keep the valuable resources used to produce and distribute food from going to waste. Small changes can make a big impact.



- What are some other ways to prevent food loss?
- What can you do in your family to prevent food loss?
- What ideas do you have that can help the community prevent food loss?
- United States Department of Agriculture

Have the students work with an adult to try some of the following activities found on the EPA website.



KEEP NOTES ON WHAT WORKS TO REDUCE FOOD WASTE AND WHAT DOESN'T.

- **Plan & Save**
Plan your weekly menu and make a grocery list. Does the list include food that you already have at home? Buy only what you need and stay within your budget.
- **Be Food Safe**
Shop refrigerated or frozen foods just before checking out. Transport items that spoil easily in a cooler or thermal bag and refrigerate or freeze within two hours of shopping.
- **Check for Quality**
The dates on a food package help the store determine how long to display the product for sale. It can also help you to choose a product at its best quality.
- **Set Storage Reminders**
Track storage times for different foods.
- **Be Organized**
Foods are less likely to go bad when you use the older items first. Keep your pantry and refrigerator clean and organized so you can see what needs to be eaten first.
- **Re-purpose**
Give leftovers a makeover when you reuse them in recipes. Add broccoli stems to a salad or blend overripe fruit into a low-fat smoothie. Freeze extra food.
- **Donate**
Many shelters, food banks, and faith-based organizations will accept food donations to feed others who need a meal.
- **Recycle & Compost**
Instead of throwing out food, create a compost bin. Don't have a yard? Your city may help you find composting or recycling options that are right for you.

Wasted Food *(continued)*

We want to hear from you!

Let us know what you thought of the lesson or send us a picture of youth participating in the lesson.

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