

FOOD AND THE ENVIRONMENT: FOOD WASTE



SUMMARY

Food takes a lot of energy, resources, and money to produce. You may be shocked to learn that more than a 1/3 of all the food we produce in the United States never even gets eaten, and basically ends up in landfills. Food waste globally is about 1 billion tons wasted (the 3rd largest greenhouse gas emitter in the world if it was its own country!). Food waste is a HUGE problem and when we think about the numbers of hungry and food insecure people in the world it becomes infuriating. Drive into this lesson to find out ways each of us can combat food waste at home and in our communities.

Duration: 90 mins, 2 Sessions | Grade Level: 4th - 7th



Module 1: Food and the Environment

Food Waste

LESSON CONTENTS

- At A Glance 2
- Lesson Breakdown 3
- Detailed Lesson Script
 - PART I 4
 - PART II 7

LESSON RESOURCES

greenbeetz.org

our website hosts lesson slides, google forms, lesson videos, and teacher training videos, glossary, standards alignment and more

Worksheets

- Regrown Foods

FOOD WASTE: AT A GLANCE



ESSENTIAL QUESTION

Why is food waste a problem for the environment and society?



STUDENT LEARNING GOALS AND OBJECTIVES

- Understand what food waste is and where it occurs
- Explain why food waste is a problem.
- Identify ways to reduce food waste ourselves.



VOCABULARY

- **Food Waste** – Food that is or was perfectly edible but is discarded into the trash
- **Food Recovery** – Taking edible food that would otherwise go to waste and redistributing it in some way
- **Food Waste Prevention** – Stopping waste from occurring in the first place
- **Food Recycling** – Repurposing waste as energy, agricultural, or other products



KEY POINTS

- Americans waste 30-40% of our food supply — this means about 365 million pounds of food per day, every day!
- If **Food Waste** were a country it would be the 3rd largest greenhouse gas producer in the world (behind the US and China)
- Food waste is a problem for three main reasons:
 1. Precious resources are used up to produce food that's never eaten.
 2. Decomposing food releases greenhouse gasses that cause climate change.
 3. There are about 37 million people in the USA who struggle with hunger and about 828 million people worldwide (according to the World Food Programme)
- Most (80%) of food waste happens at grocery stores, restaurants, and in people's homes.
- Solutions to food waste fall into three main categories: prevention, recovery, and recycling.

LESSON BREAKDOWN

TIME	ACTIVITY	MATERIALS/RESOURCES
PART 1		
5 min	Introduction: Food Waste	Lesson Slides
3-8 min	Lesson Video: Food Waste	Vimeo or YouTube
7-12 min	Discussion & Vocab Review	Lesson Slides
15 min	Activity: Regrown Foods	Regrown Food Worksheet
3 min	Food Detective Assessment	Exit Question(s)
PART 2		
5 min	Recall	Lesson Slides
3 min	Regrown Foods Observations	Regrown Food Worksheet
20 min	Activity: PSA for Foods that might get dumped	Background Information
10 min	Snackz & Factz	Smoothie from overripe fruit OR Taste testing “misfits/ugly” fruits and vegetables
5 min	Test Your Noodle	Slides
Extension Option		Food Waste Audit

DETAILED LESSON SCRIPT: PART I

Introduction: Food Waste

5 minutes

LESSON SLIDES



Every day, we're teaching kids that food is trash. We ensure that they throw it away by providing sub-par grub in a rushed lunch period often at times of the day when they won't be hungry.

Ask students to reflect on the last couple days and recall any time they threw out food. *What was the food? Ballpark how much was thrown out? Why did they throw it out?*

Lesson Video: Food Waste

3-8 minutes

DIFFERENTIATION

You should decide which structure will help your students access the information:

- Have students watch the video and ask questions
- Watch the video more than once, pausing at key moments, etc
- Or, you can allow their responses to be more open-ended and ask: *What surprised you? What was most interesting? What was most important? Why?*



Class Discussion & Vocab Review

7-12 minutes

Lead a discussion after the video. Display or refer to the Key Points and Vocab as you discuss:

KEY POINTS



Americans waste 30-40% of our food supply yearly

This means about 365 million pounds of food per day, every day!

Food Waste is a huge contributor to Greenhouse gasses

If Food Waste were a country it would be the 3rd largest greenhouse gas producer in the world (behind the US and China)

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Class Discussion & Vocab Review (CONTINUED)

KEY POINTS



Food waste is a problem for 3 main reasons

1. Precious resources are used up to produce food that's never eaten.
2. Decomposing food releases greenhouse gasses that cause climate change.
3. There are about 37 million people in the USA who struggle with hunger and about 828 million people worldwide (according to the World Food Programme)

Most food waste happens at the consumer level

Most (80%) of food waste happens at grocery stores, restaurants, and in people's homes.

Solutions to food waste fall into 3 main categories

Prevention, recovery, and recycling.

VOCABULARY



Food Waste

Food that is or was perfectly edible but gets discarded into the trash

Food Waste Prevention

Stopping waste from occurring in the first place

Food Recovery

Taking edible food that would otherwise go to waste and redistributing it in some way.

Food Recycling

Repurposing waste as energy, agricultural, or other products



Activity: Regrown Foods

15 minutes

Growing new food from scraps is a lot of fun and easy to do! All you need is some food scraps, water, and a bit of time. There are also a dearth of videos and other resources online showing what kinds of vegetables you can grow from scraps and what to expect. Make sure to use food scraps from this activity, so plan ahead in collecting scraps from your school kitchen, bring from your home or students from their homes. Have your students observe and record the changes/growth over a week or two as it suits your class and record their findings on the **Regrown Food Worksheet**.



Name: _____

OBSERVATIONS

Name of vegetable(s) you are regrowing:	
Initial date of "planting"	
First sign of regrowth (how many days after initial preparation did growth begin?)	
Briefly describe your observations in the new growth over time?	

Food Detective Assessment

3 minutes

Have students answer the following on an Exit Card in their own words

- *Why is food waste a problem?*

DETAILED LESSON SCRIPT: PART II

Recall

5 minutes

Remind your students that you are continuing on Food Waste and ask them to share anything they remember about the previous lesson.

Guiding questions:

- *Where does most food waste occur?*
- *What are some of the consequences of food waste?*
- *What are the 3 main solutions to food waste?*

Regrown Foods Observations

5 minutes

If you haven't done so already, take a moment as a class to observe your "regrown" vegetables from the previous session and mark your observations on their Regrown Food Worksheets.



Activity: PSA for Foods that might get dumped

20 minutes

This is a fun activity to have your students investigate and understand ways that they can contribute to the solutions to Food Waste by prevention, recovery, and recycling. You can expand on this as a full-on research project and presentation or keep it simple for one class period. Divide your class into small working groups and assign them

one of the following food waste topics to make a Public Service Announcement for the class. You can provide your students with the resources from our **Background Information** or have them research themselves - all depends on the depth and time you have for this project.

Classroom PSA Topics to assign to groups:



Plead a case for misshapen fruits and vegetables



Overripe Fruits or Smoothie Fruits?



Fight for the peels



Expiration Dates — fact or fiction?



Stale Bread - trash it or...

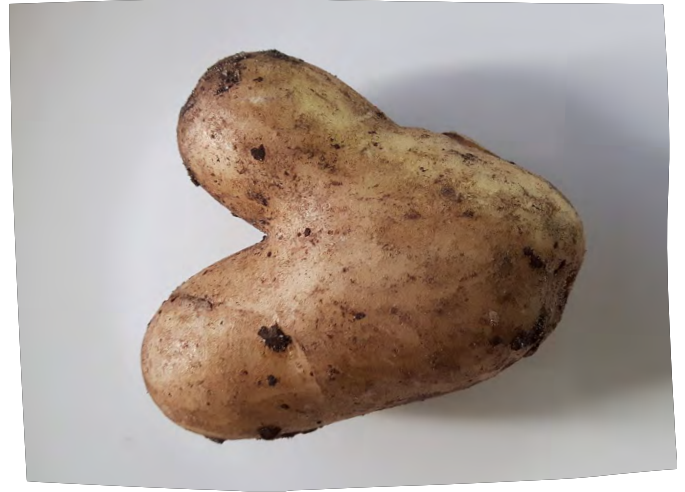


Make a stock!

Snackz & Factz: Misshapen Fruits/Veggies

10 minutes

- Bring in misshapen fruits and vegetables to taste as a class (carrots that are twins with the peel on and washed is a great suggestion!)
- Bring in fruit/vegetables that have blemishes on them



FACTZ

Show and discuss the foods you brought in today for taste testing. Explain that grocery stores often refuse to buy misshapen fruits and vegetables so they are often not harvested and left to rot in the fields. But these foods don't taste any different than their counterparts that look pristine. Fruits and vegetables also can arrive with blemishes, marks on them, but again these spots don't mean that they are bad and if you have some in your fridge at home with spots you can often cut out the marks and keep eating!

Test Your Noodle

5 minutes | (Optional: Google Form)

1. Define food waste. **(Something like this: Food that was edible, that is sent to landfills or thrown away)**
2. Why is food waste a problem for our environment and society?
 - a. Precious resources are used up to produce food that's never eaten.
 - b. Decomposing food releases greenhouse gasses that cause climate change.
 - c. There are about 37 million people in the USA who struggle with hunger.
 - d. All of the above**
3. Circle the 3 top places that food waste occurs?
 - a. At home**
 - b. Grocery Stores**
 - c. Farms
 - d. Restaurants**
 - e. Factories
4. What are we *also* wasting when we throw away edible food?
 - a. Water
 - b. Energy
 - c. Soil
 - d. Money
 - e. All of the above**
5. Name the 3 solutions to Food Waste? **(prevention, recovery, recycling)**

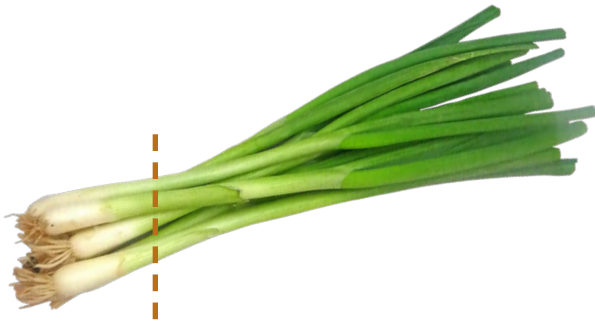
Extension Option: Food Waste Audit

The World Wildlife Fund has an entirely free resource library and curriculum about food waste called **Food Waste Warriors** that aims to teach about food waste and how to combat it on campus. Check out their website for more extension lessons as well as the how-to for conducting your own classroom food audit or cafeteria food audit.



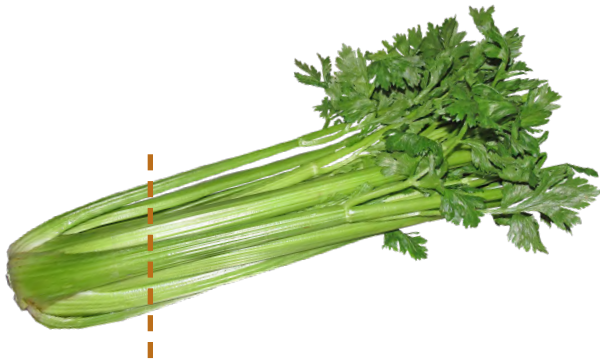
Activity: Regrown Foods

Reuse Food Scaps to Grow Scallions and Celery in your Kitchen



Green Onions

- Cut green onions near the white root; leave some of the pale green portion.
- Place, roots down, in a small water-filled glass set in a sunny spot.
- Replace the water every 2-3 days; harvest after 7 days.



Celery

- Cut the celery base from its stalk, leaving about 1-2 inches of celery.
- Place the cut celery base into a bowl of water.
- Change the water every other day to keep the roots fresh.
- Transplant the roots into soil after eight days in water.



Activity: Regrown Foods Worksheet

Name: _____

OBSERVATIONS

<p>Name of vegetable(s) you are regrowing:</p>	
<p>Initial date of "planting"</p>	
<p>First sign of regrowth (how many days after initial preparation did growth begin?)</p>	
<p>Briefly describe your observations in the new growth over time?</p>	