

# Eat Your Compost!

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3rd - 8th Grade

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# Eat Your Compost!

## Teacher Lesson Plan

Grades 3 - 8  
Time: 30min/day + cooking time



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### Overview

According to the U.S. Environmental Protection Agency, Americans waste 80 BILLION pounds of food each year. That's about 219 pounds of food waste per person annually, or a half pound of food waste per person every day! Unfortunately, most of this food waste is sent to landfills. Food is the single largest category of material taking up landfill space.

Even if we compost our food instead of sending it to the landfill, it's still kind of a waste... just think of all the time, labor, energy, and resources that go into growing or making our food! You can get the most out of your groceries by getting creative and using all of your food and food scraps. As long as the food is still safe to eat (mold = toss), use it!

For this activity, students will be Compost Chefs. Students will think about or try preparing a recipe that uses a food in their household that otherwise would have been composted. Students will then research three of the ingredients used in the recipe, and write about their experience cooking and eating their dish. Time to put on an apron and embark on a food adventure!

### History

Albert Howard is known as the father of modern composting for his work in the early 1900s experimenting with organic gardening and farming. However, people have been using organic material to improve their crops since farming began over 12,000 years ago (Carry On Composting). Tablets found from the Akkadians in Mesopotamia from around 2300 B.C. are believed to be the oldest written reference to compost (National Geographic, 2016). In the U.S., there are records as early as 1621 of the pilgrims being taught composting methods by Tisquantum (known commonly as Squanto), the Patuxet man who acted as their interpreter (Columbian College of Arts & Sciences, 2013).

In 1999, the first large-scale curbside composting collection in a U.S. city was started in San Francisco. This program was called "The Fantastic Three" and is still in use today (BioCycle Magazine, 2000). RethinkWaste, which was founded in 1982, uses a 3 bin system as well!

# Eat Your Compost!

## Teacher Lesson Plan

### ★ Purpose & Learning Objectives

Through this lesson, students will explore the topic of food waste and take action within their household to prevent it. Students will research potential recipes based on their available ingredients. Students will practice basic kitchen skills such as measuring, mixing, and baking. They will learn the history of three ingredients used in their dish. Finally, students will express their cooking and dining experiences by participating in a creative writing exercise.

### Driving Question

How does food waste impact the environment and what actions can we take to prevent it at home?

### Standards & Topics Connections

#### **One Planet Living Topic**

Zero Waste,  
Products &  
Materials  
(Consumption)

#### **Standards: NGSS, HSS, Common Core**

NGSS: 3-5-ETS1-1, 3-5-ETS1-2, 5-  
LS2-1, 5-ESS3-1  
HSS: Development of the Local  
Community: Change Over Time,  
Physical and Human Geographic  
Features That Define California,  
Economics of the Local Region:  
Choices, Costs, and Human Capital  
Common Core: 3-5.RI.7, 3-5.RI.8, 3-  
5.W.2, 3-5.W.4, 3-5.W.8, 3-5.L1-3,  
3-5.L5

#### **Environmental Principals & Concepts (EP&Cs)**

This lesson covers  
EP&C Principles 1,  
2, 3, and 5.

### Adaptations & Extensions

Have students share photos and recipes with the class and build a whole-class cookbook!

# Eat Your Compost!

## Student Worksheet



30min/day  
+ cooking time



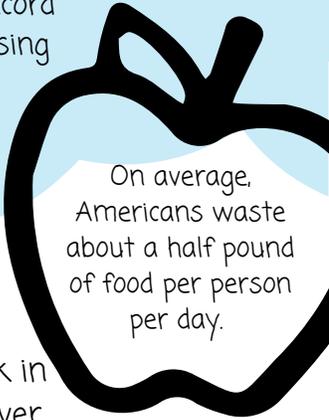
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### Introduction

Did you know that in the United States, almost 40% of all food is wasted!? Think about all of the energy it takes to get food onto your plate: the ingredients must be planted, grown, harvested, sorted, cleaned, processed, packaged, and transported to a distribution center or directly to a store (via ship, airplane, or vehicle), picked up by your family, and finally, cooked! After all of that, doesn't it seem silly to let food get thrown away?

Think about why your family might unintentionally be wasting food - did you buy a pack of strawberries that was too big so they got moldy before you could eat them? Did you have an old can of soup that got lost in the cabinet and no one remembered?

We might not realize it, but another way we waste food is by composting it when we don't need to. Composting is a good option to get rid of inedible food items, but a lot of the "food scraps" we put in the compost are still good to eat and can be used for other recipes. By paying attention to and thinking creatively about our food scraps, we can prevent more food from going to waste. In today's lesson, you'll record the food waste you generate over 3-4 days and write a recipe and food review, using as many food scraps as possible.



On average, Americans waste about a half pound of food per person per day.

### History

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In 1999, the first large-scale curbside composting collection in a U.S. city was started in San Francisco. This program was called "The Fantastic Three" and is still in use today. RethinkWaste, which was founded in 1982, uses a 3 bin system as well!

# Eat Your Compost!

## Student Worksheet

### ★ Key Terms

- Compost: A nutrient-rich fertilizer made from our food and yard scraps. Anything we put in our green compost bin becomes fertilizer.
- Food scraps: Any uneaten or inedible food. Our food scraps can go into the compost bin or be turned into a delicious meal!
- Recipe: A set of instructions for preparing a particular dish. It includes the list of ingredients and can also include measurements of ingredients.

### Instructions & Materials

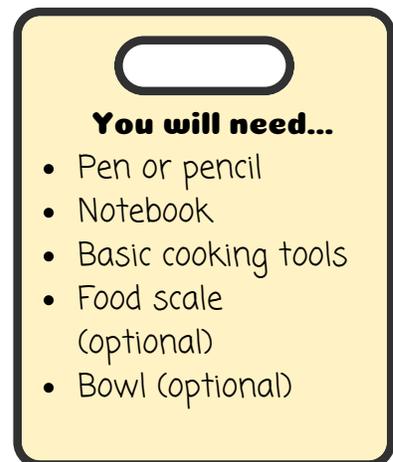
Recommended: If you decide to cook your food scraps recipe, you may need help using sharp kitchen tools and hot appliances. Hire an adult to be your assistant chef!

Observe any food (ex: extra bones, old bananas) that is thrown away and document it.

Option 1: If using a food scale, put waste from each meal in a bowl and weigh.

Option 2: If not using food scale, count the number of food items that are wasted (ex: 3 chicken bones, 2 old bananas).

- Add to this list every time you observe food waste for 3 days. With permission, you can save some food scraps and store in a bag in your freezer for future use. Make sure you collect the food scraps before putting them in the compost bin!
- After 3 days, examine the list of food scraps. Can you think of any meals or desserts that include the ingredients that you threw away?
- Create (or look up) a tasty recipe using as many food scraps as possible! You will use this for a creative writing exercise next.



# Eat Your Compost!

## Student Worksheet



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### Food Scrap Journal

Date:

#### Food Scrap

#### Tally or Weight

# Eat Your Compost!

## Student Worksheet



### Writing Activity

For this activity, we will be practicing using descriptive language as a food writer. Please read the article below for inspiration.

#### **Ulavacharu Tiffins**

At this vegetarian offshoot of Ulavacharu, a southern Indian restaurant in Sunnyvale, multicourse tiffins are the focus. Ulavacharu's style of cooking is distinctly home-style and hearty, from the silky and rich pongal rice (\$6.99) to the thick and buttery mysore pak (\$5), loaded with cardamom flavor and perfect with a cup of tea. When dining in, you eat lentils and rice, steamed rice cakes or roti from metal trays, with the other, varied elements of the meal — chutneys, spicy lentil stews and deeply flavored sauces — presented in small metal bowls. Here, every dish is presented as a consortium of flavors: set meals whose components are meant to complement each other.

The dosas are really some of the best in the Bay Area. The menu features 22 variations, with myriad fillings and batter mix-ins. The lacy onion rava dosas (\$8.99) are made with a thin, unfermented batter of semolina, rice and wheat flours splashed over sliced red onions on a hot griddle. The dosa is then folded three times, much like Chinese jianbing, and served with a spicy and sour tomato and lentil sambar and coconut, tomato, peanut and ginger chutneys. I hear that these accoutrements are refilled generously when you're dining in.

Sadly, takeout is less extravagant, with everything in plastic containers and foil and no refills. I ate my dosa on the trunk of my car, exposed to the same ambient seasoning that heightens every taco truck dinner. A bit janky, but it only got me more excited to come back later and finally have the tiffins the way they're meant to be eaten.

— S.H.

This article was written by two food journalists from the San Francisco Chronicle: Soleil Ho and Carolyn Jung. Food journalists visit restaurants in their communities and write about their experiences. They often include details about what it felt like to dine at the restaurant, including comments about the decor, music, and staff, but they will always write in-depth descriptions of the dishes that they try.



# Eat Your Compost!

## Student Worksheet



### Food History

Pick three ingredients that are important in your dish. Once you have decided the three ingredients you want to focus on, fill out the form below for each ingredient.

Ingredient #1: \_\_\_\_\_ This ingredient comes from the country of \_\_\_\_\_, and was discovered \_\_\_\_\_ years ago by the \_\_\_\_\_ people. It is now grown in the countries of \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. This ingredient is often used in these dishes: \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

\*What country was your ingredient grown in? \_\_\_\_\_

How many miles is that from your city? \_\_\_\_\_

Can this ingredient be grown in California? (circle one)      Yes      No



Ingredient #2: \_\_\_\_\_ This ingredient comes from the country of \_\_\_\_\_, and was discovered \_\_\_\_\_ years ago by the \_\_\_\_\_ people. It is now grown in the countries of \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. This ingredient is often used in these dishes: \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

\*What country did your ingredient come from? \_\_\_\_\_

How many miles is that from your city? \_\_\_\_\_

Can this ingredient be grown in California? (circle one)      Yes      No



Ingredient #3: \_\_\_\_\_ This ingredient comes from the country of \_\_\_\_\_, and was discovered \_\_\_\_\_ years ago by the \_\_\_\_\_ people. It is now grown in the countries of \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_. This ingredient is often used in these dishes: \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_.

\*What country did your ingredient come from? \_\_\_\_\_

How many miles is that from your city? \_\_\_\_\_

Can this ingredient be grown in California? (circle one)      Yes      No



\*Hint: If your ingredient is packaged, look on the package to see where it's from.

# Eat Your Compost!

## Student Worksheet



## Reflection Questions

In this lesson, we learned about how to creatively use our food waste to make new food.

Why is it important that we reduce food waste as much as possible? Besides the food itself, what else is wasted when we throw away uneaten food?

What is one benefit of trying to buy items that are grown or made closer to where we live?

What was the most surprising fact you learned about your ingredients?

In addition to being a Compost Chef and thinking about how to use food scraps before composting them, what is one more way your family can reduce food waste?

# Eat Your Compost!

## Student Worksheet



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### Sample Recipes

#### Food Scraps:

- 5 pieces of wilted kale
- 2 onion tops and bottoms
- 10 carrot peels
- 1 parmesan rind without wax, cheesecloth, or paper
- 6 chicken bones
- 1 sweet potato that is half squishy
- 2 orange peels

#### Possible Recipes:

Here are three examples of recipes Compost Chefs could make using some of the food scraps listed above. Remember your recipe doesn't have to include all of your food scraps, but should include at least 2 different food scraps.

#### Compost Casserole

Inspired by: <https://www.thekitchn.com/pasta-casserole-how-to-make-110912>

#### Food Scraps:

- 5 pieces of wilted kale
- 10 carrot peels
- 1 parmesan rind
- 1 sweet potato that is half squishy. Cut off the squishy part.

#### Additional Ingredients:

- 1 lb of pasta
- Fresh cut parsley
- 1 cup of shredded cheese

#### Steps:

1. Preheat the oven to 350°F
2. Cook the pasta according to the instructions (boil the pasta for 10 minutes)
3. Grease a 9x13-inch dish with butter
4. Cut up the vegetables and herbs: the kale, carrot peels, half of the sweet potato, and the parsley
5. Grate the parmesan rind
6. Add the cheese, vegetables, and herbs to the pasta
7. Put the mixture into the greased 9x13-inch dish
8. Bake the casserole in a 350°F oven

# Eat Your Compost!

## Student Worksheet



### Food Scrap Stock:

Inspired by: <https://www.allrecipes.com/recipe/12982/basic-vegetable-stock/>

### Food Scraps:

- 5 pieces of wilted kale
- 2 onion tops and bottoms
- 10 carrot peels
- 1 parmesan rind
- 6 chicken bones
- 1 sweet potato that is half squishy. Cut off the squishy part.
- 2 orange peels

### Additional Ingredients:

- 1 tablespoon of olive oil
- ¼ cup of fresh thyme
- 8 clove of garlic
- 1 teaspoon of salt
- 2 quarts of water

### Steps:

1. Chop vegetables (kale, onion, carrots, sweet potato, garlic) into 1-inch chunks
2. Heat olive in a big pot then add kale, onion, carrots, sweet potato, garlic, thyme
3. Add parmesan rind, chicken bones, orange peels, salt and water to the pot, and bring it to a boil.
4. After reaching a boil, lower the heat to simmer (make sure the pot is not covered) for 30 minutes.
5. Strain the mixtures, so you separate the chunks of vegetables, fruit, cheese, and bones from the liquid.
6. Discard the leftover vegetables, fruit, cheese, and bones in the compost
7. Use the liquid stock to make more dishes like soups!

# Eat Your Compost!

## Student Worksheet



### Candied Orange Peels

Inspired By: <https://altonbrown.com/candied-orange-peel-recipe/>

#### Food Scraps:

- Orange peels of 4 oranges
- 2 Cup of sugar
- 4 Cups of water

#### Steps:

1. Scrape the pith (or white stuff) of the orange peels off as much as possible. The more you remove, the less bitter the candies will be!
2. Add the peels and 2 cups of water to a deep saucepan and bring to a boil.
3. Reduce the heat down to let the peels simmer for 15 minutes.
4. Drain the pan and add the sugar and the remaining cup of water to the peels.
5. Bring to a boil over medium heat, continuing to stir the peels until the sugar dissolves.
6. Once the syrup boils, drop the heat down and let the peels simmer for about an hour. During this time, the sugar is being absorbed by the peels, so it's important to take your time on this step!
7. Remove the peels from the heat and place on a cooling rack overnight. Save the remaining syrup in the pan and use it as a sweetener in tea or juice!