

Wilton Manors Elementary – P3 Eco-Challenge 2015-16 Overall School Winner

Category 6 Special Project/Innovation

Our innovative project began with two groups of Fifth Grade students who were interested in helping to find a solution to food waste. After learning of global food loss and waste through a Flying Classroom lesson, they decided to take note of the extreme food waste that takes place in our very own cafeteria. The project goal was to find a way to reduce food waste at our school. By involving the entire student body, we hoped the project would result in an extension to families reducing food and not wasting it at home. It's time to do something now to help reduce the amount of food waste and keep the environment clean!

Description

Fifth graders collected and sorted through a sample of garbage from various grade levels which proved that food waste was prevalent throughout the school. On a Monday, during our morning news broadcast, they posed a school-wide essential question, What are the benefits of reducing the amount of food waste at our school? Classes had two days to discuss the question. On Wednesday of the same week, it was decided that we would begin by just focusing on the amount of milk wasted each day during breakfast and lunch.

Using Flying Classroom as a resource, teachers assisted students in taking a poll of how many students take the milk but do not drink the milk during breakfast and lunch. Fifth graders created a graph to represent the poll and wrote an explanation of the graph. The results were shared with the entire school on the morning broadcast. As a follow-up activity, classes saved unwanted milk in coolers with ice. When they returned to class, students participated in a science lesson where they made ice cream in a bag. Toppings were provided and the students enjoyed ice cream sundaes.

As students continued their research through articles and videos, they shared facts with the school including:

*America gets rid of 165 billion dollars of food every year and more than 30% of food purchased in the U.S. gets thrown away.

*Under federal school meal rules, students are required to take at least three items even if they do not want them. Also the federal rules do not allow schools to let the uneaten food to be taken off campus.

*The amount of food wasted daily is enough to fill a 90,000 seat football stadium. The amount of food wasted by children is comparable to the US population, hundreds of pounds of food waste per day in every school. That included whole apples, oranges and bananas, entire cartons of milk, and unopened boxes of cereal.

Culminating Activity

Students took action by making posters and placing them in the cafeteria as reminders to pay attention to the food they were wasting.

The Kiwanis Club of Wilton Manors works with our school to provide for families in need of food. Each Friday, they send home a backpack of food with students. Currently, our fifth graders are proposing that we save food that would be wasted in our cafeteria and send it home on a daily basis with students who need it. We are creating an action plan to present to administration and our cafeteria manager. One of the proposed solutions is to have the Kiwanis Club provide insulated bags instead of book bags for daily food distribution.

Our reflection at this time is on planning and policy change due to conflicting policies between our cafeteria and the district. Students would like to see their plan come to fruition, however, it is difficult to go against policies that prevent them from removing food from the cafeteria and school campus.

Integration

Academic Standards

U.S. Content

Next Generation Science Standards (NGSS)

5-PS1-4. Experiment mixing of two or more substances results in new substances
5-ESS3-1. Individual communities use science ideas to protect the Earth's resources and environment.

U.S. Common Core

ELA/Literacy

RI.3-4.3 Explain events, procedures, ideas, or concepts based on specific information in the text

RI.5.7 Draw on information from multiple print or digital sources

RI.5.9 Integrate information from several texts on the same topic

W.3-5.8 Recall information from print and digital sources

Mathematics

MP.2 Reason abstractly and quantitatively

MP.4 Model with mathematics.

MP.5 Use appropriate tools strategically

MP.6 Attend to precision

21st Century Learning

1.Learners use skills, resources, & tools to inquire, think critically and gain knowledge.

2.Learners use skills, resources, & tools to draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.

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SAN DIEGO, CALIFORNIA

FOOD WASTE

DAY 1: ENGAGING STUDENT EXPLORERS

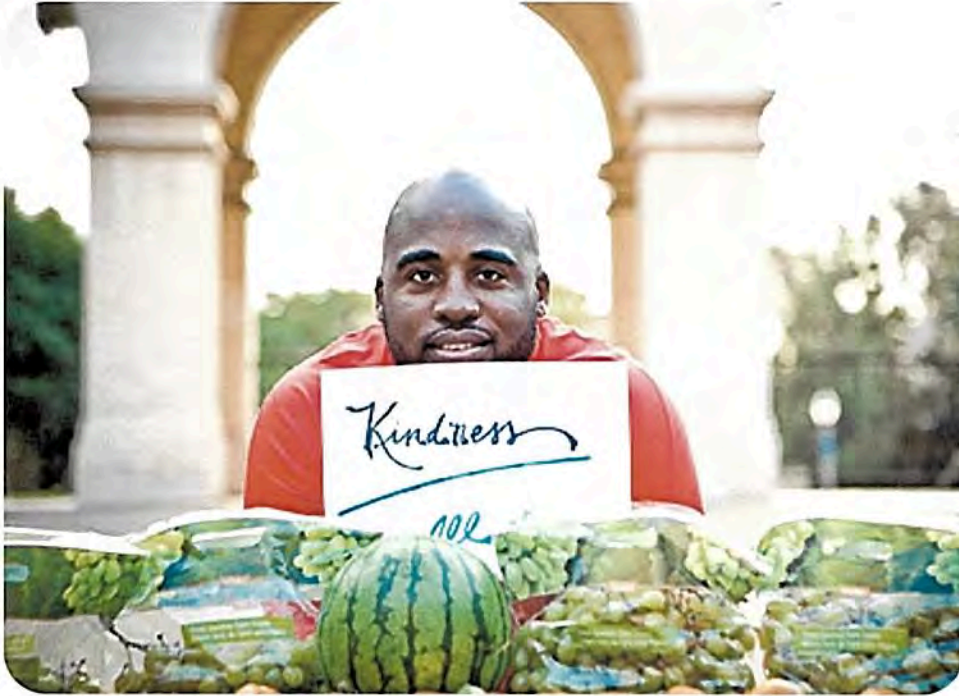
LESSON OVERVIEW

America gets rid of 165 billion dollars of food every year and more than 30% of food purchased in the U.S. gets thrown away. In the U.S. 1 in 6 Americans are hungry and we wasted 35 million tons of food in 2012. Under federal school meal rules students are required to take at least three items even if they do not want them. Also the federal rules do not allow schools to let the uneaten food to be taken off campus.

REAL WORLD PROBLEM



The amount of food wasted daily is enough to fill a 90,000 seat football stadium. The amount of food wasted by children is comparable to the US population, hundreds of pounds of food waste per day in every school. That included whole apples, oranges and bananas, entire cartons of milk, and unopened boxes of cereal. There is a huge number of wasted milk cartons in schools every day. Think about it, when you are required to take the carton of milk with your school breakfast or lunch, do you drink the milk every time? It's time to do something now to help reduce the amount of food waste and keep the environment clean!



CAPTAIN IRVING IN THE FIELD

MULTIMEDIA OVERVIEW

ARTICLE



Tristram Stuart: Waging War
Against Global Food Waste

VIDEO



Dumpster Diving with Rob
Greenfield

VIDEO



Just Eat It - A Food Waste Story
(Official Trailer)

ARTICLE



Reducing Wasted Food Basics

INFOGRAPHIC



Food Waste

INFOGRAPHIC



Global Food Loss and Waste

INFOGRAPHIC



Food Waste in America

INTERESTING FACTS AND RESEARCH

Facebook: Just Eat It.

The Campus Kitchen Project



ESSENTIAL QUESTION

SHOW ANSWER

1. What are the benefits of reducing the amount of food waste?
2. What is considered matter?

PREASSESSMENT

1. Have students complete the Assessment before instruction:

[Preassessment](#)

[Preassessment Answers](#)

DISCUSSION ACTIVITY



Through the use of the collaborative structure Mingle, Pair, Share the students will use the infographics to answer the following questions. Use the [Mingle, Pair, Share Questions](#) for questions.

1. Students mix around the room silently as music plays in the background.
2. When the music stops, each student finds a partner closest to them (no running across the room to find your best friend!) and puts their hand together with their partner's in a high five.
3. When all students have found a partner, teacher poses a question and allows for "think time".
4. On the teacher's go, one partner shares and the other listens.
5. Partners switch roles.
6. After both partners have had a chance to speak (teacher will have to monitor this, based on the depth of the question), music starts again, students mingle, when music stops they find a new partner, teacher poses new question, etc.
7. Repeat for each question.

DAY 2: BECOMING EXPLORERS

THE CHALLENGE

The challenge is for students to realize there is a huge amount of milk in schools that is thrown in the garbage daily. Then the students will understand the basics of matter and make ice cream from milk.

KEY CONCEPTS

Today's lesson ties to recycling and matter

STUDENT OBJECTIVES

Students will be able to:

1. Understand the worldwide issue with food waste.
2. Understand the basics of matter and create ice cream that will be made using household items.



VIDEO



Rob Greenfield Dumpster Diving

VIDEO



Why Do We Eat Bacteria

INFOGRAPHIC



Reducing Food Waste

ARTICLE



INFOGRAPHIC



Talk Trash: Focus on Food Waste

Food don't waste it

LESSON: MILK POLL AND CREATING ICE CREAM IN A BAG

1. **Step 1:** Teachers assist your students in taking a poll of how many students take the milk but do not drink the milk (this poll can also be done school wide) during breakfast and lunch. Students will create a graph to represent the poll and write an explanation of the graph using [Milk Poll](#).
2. **Step 2:** This do-it-yourself treat also serves as a simple chemistry lesson. Investigate changing states of matter, chemical reactions, and the properties of ice and salt while working for your dessert.
3. **Teacher Note:** If you have students allergic to milk or lactose intolerant then a substitute can be soy milk, almond milk, and lactose free milk. This is an instruction video for teacher background [The Sci Guys](#). We do not recommend using the unused cartons of milk from the cafeteria due to temperature regulations.

Materials List:

1. 1 cup half & half or milk
2. 1/2 teaspoon vanilla
3. 2 tablespoons sugar
4. 4 cups crushed ice

5. 1/2 cup rock salt
6. 2 quart size zip-top plastic bags
7. 1 gallon size zip-top freezer bag
8. Crushed cookies, candies, nuts or berries (optional for add-ins)
9. Spoons

You may also use [Ice Cream In A Bag Lesson Plan](#) to assist students in exploring and defining matter.

Duration: About 30-45 minutes

POSTASSESSMENT

Have students complete the Assessment after instruction.

[Assessment](#)

[Assessment Answers](#)

EXTENSION ACTIVITIES

Option 1

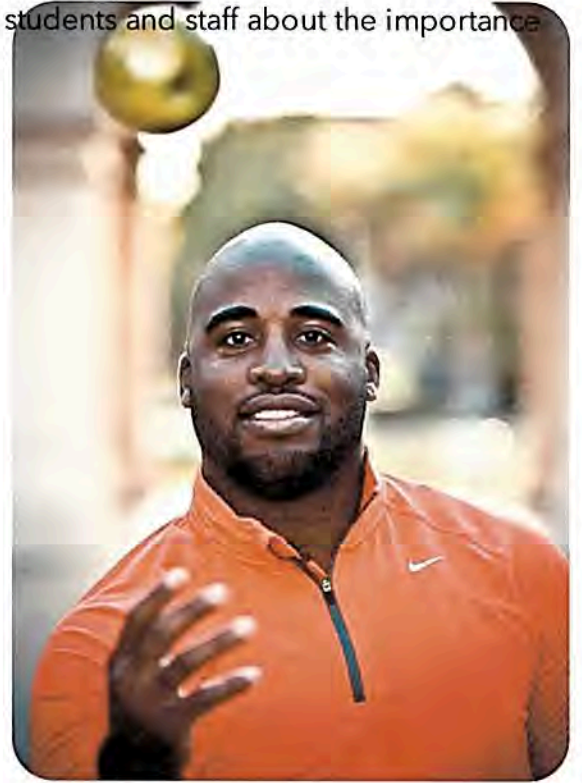
Join the U.S. Food Waste Challenge, complete the appropriate form in the website with information about the activities/objectives your organization will undertake in the next year to reduce, recover, and recycle food waste in the United States.

<http://www.usda.gov/oce/foodwaste/join.htm>

Option 2

Research information about food waste and feeding livestock in the local area and starting a program at your school. [Cafeteria Food Waste Recycling: How to Turn Elephants into Pigs](#). This video explains the

process of a school districts resource recovery project to educate students and staff about the importance of recycling their food waste and feeding livestock. The school district are able to save money and help the environment.



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