Zero Food Waste Challenge

Key Questions
Why is food wasted? What happens to uneaten food in our communities? How can individuals and businesses work to solve the problem of food waste?

Overview
Students will develop profitable solutions to common food waste problems. Working in small groups, students will imagine a hypothetical business that turns unused food into valuable resources and profits, and create a marketing brochure describing the services their company provides.

Objectives
Students will be able to:
• Identify sources of food waste
• Explain how discarding uneaten food wastes valuable resources and contributes to environmental problems
• Propose realistic strategies for dealing with food waste

Materials
Per working group
• Printer paper, pens, markers
• Food Waste Source Cards

Technology
• Projector, screen, and computer
• “The Big Waste” video on YouTube

Teacher Preparation
Students should be familiar with basic concepts in sustainability science, such as the Three Pillars of Sustainability. It may also be useful for students to explore the food system through the lesson “Food Systems are Dynamic”. Organize students into 6 small groups (3-5 students). Print and cut out Food Waste Source Cards, providing one card per student group.

Background Information
Up to 40% of the food produced in the United States is wasted. Not only do individual consumers waste large amounts of food (about 20lbs per person per month), but food is regularly discarded by pro-
ducers, restaurants, and grocery stores as well. For example, when fruits and vegetables are harvested in the field, almost half is left behind to rot because it does not conform to arbitrary standards of size, shape, or color. Grocery stores routinely overstock their shelves because they know shoppers buy less when the supply gets low. In order to avoid running out, restaurants often make large batches of popular menu items. At the end of each day, food that isn’t purchased may end up in the trash. In most cases, the discarded food is buried in municipal landfills. Here, these valuable resources are broken down by anaerobic processes to produce methane, a powerful greenhouse gas.

In recent years, entrepreneurs, non-profit organizations, and small businesses have begun to recognize the value of food waste. Organizations that collect and use discarded food are on the rise. Some, like non-profit food banks, simply redistribute uneaten food to people who need it. Others, use food waste to feed their livestock. For every source of food waste, there is an example of an organization that can turn those resources into profit.

Recommended Procedures
1. Engagement: This activity will focus students on the topic
   Project “The Big Waste” video, which introduces the topic for this activity. Allow students to share what they know about the numerous reasons why food may be wasted, and suggest possible solutions.

2. Exploration: A student-led activity with guidance
   Organize students into six working groups. Each group should receive one of the six “Food Waste Source” cards. Students should read, think about and discuss the source of food waste on their card, brainstorming different ways that this food could be put to use.

3. Explanation: Students discuss their understanding of the concept
   After 7-10 minutes of brainstorming, allow students to read their “Food Waste Source” cards to the class, and share some of the solutions they have come up with. Allow other students to critique their solutions, offer possible improvements, or suggest additional ideas.

4. Elaboration: Students apply the idea in a new context
   Students should work in their groups to imagine a hypothetical business that collects food waste from the source described on their card and uses it as a resource. Once they have determined what services their company will provide, and how it will deal with the food waste, students should use printer paper, pens and markers to create a tri-fold brochure featuring their company.

5. Evaluation: Students assess their knowledge, skills, abilities
   If time permits, students can share their brochures with their classmates, explaining what their company will do and how it will make a profit. Alternatively, collect the completed brochures for evaluation.

Extensions
   Encourage students to examine the entire food system from production, transportation, processing, consumption, and end of life. Challenge them to combine the services provided by the
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companies they’ve created to address potential food waste at every part of the food system.

Broaden the assignment to include a discussion of the various stakeholder that are impacted by each source of food waste. Encourage students to consider how they might encourage those stakeholders to reduce food waste. Discuss the possible laws or regulations that might need to be enacted to eliminate food waste.

Vocabulary
Sustainability: The ability to meet the needs of the future, without compromising the ability of future generations to meet their needs

Food Waste: Food ingredients or parts that are discarded though edible

References
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