



Know Your School's Waste Stream

A 35 minute action-learning lesson

Reducing the amount of waste being sent to landfills is a challenge that many schools are interested in tackling. The first step in reducing the waste stream is to find out what is in the school waste stream, why it is in the waste stream, and what happens to the items in the waste stream. It is also important to encourage the students to think about whether an item in the waste stream should even be in the school in the first place.

In this 35 minute lesson students will investigate items in their school's waste stream and look for potential ways to reduce waste at their school

Before beginning, students should: understand the basics of a city's waste system and know that items that are thrown away are sent to a landfill.

Essential Question:

The objective of this lesson is to understand various components of a school's waste system.

At the end of the lesson, students will be able to:

1. *describe how items brought to school end up in the schools waste stream*
2. *identify ways to reduce the amount of waste going to landfills*



Standards Addressed: *Science Strand 1: Inquiry Process, Concept 4: Communication; Science Strand 3: Science in Personal and Social Perspectives, Concept 1: Changes in Environments, Concept 2: Science and Technology in Society; Social Studies Strand 4: Geography, Concept 5: Environment and Society*

Themes: Systems thinking, trade-offs

Skills: Evidence based thinking, oral communication

Adapted by Amalia Handler from Waste Stream Investigation by Matt Cohen, Anna Novotny, and Monica Elser Sustainability Science for Sustainable Schools, a National Science Foundation funded program

Key Vocabulary

Waste Stream: *the flow of waste from generation to disposal*

Materials Needed

- **Waste Stream Investigation.pdf**

Safety Precautions

Students should visually inspect trashcans. Students should wear disposable gloves if you choose to allow students to sort through trash.

Teaching Instructions

Advanced Preparation

Print worksheets. Inform staff that students will be looking through waste bins.

Engagement

1. Ask students:
 - a. Who threw something in the garbage today?
 - b. What did you throw away today?
2. Write responses on the board, placing tally marks next to items that are listed multiple times. Time permitting, ask students to walk up to the board to write/tally their items.
3. Discuss the biggest waste items among the class
4. Think/Pair/Share:
 - a. What do you think are the biggest waste items in your school?
 - b. Again, make a list on the board. Discuss as a class.

Exploration

1. Tell students that the class is going on a field trip around the school
2. Pass out the Waste Investigation worksheet
3. With the class, identify three places in the school (i.e. Hallway, copy room, cafeteria, other locations) that have garbage cans
4. Either take the entire class to each location, or break the class into three groups and allow them to go on their own.
5. At each location, students look into the garbage cans and record the items they see and note the items' quantities and whether they are recyclable

Explanation

1. Return to the classroom
2. Lead a class discussion about each location:
 - a. What did you see? Keep a list on the board of the most abundant waste items each student saw.
 - b. What was different about the waste in each location?

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3. Select one identified waste item for a class-wide analysis: Take for example: a plastic water bottle
 - a. Write item on the board
 - b. Why do you think someone used this item?
 - c. Do you think they really needed it?
 - d. What people are responsible for this item? Who purchases or provides it? Who uses it? Who disposes of it?
 - e. Why did they throw it away?
 - f. If you want to reduce this item in the waste, are there other options?
 - i. Are there other items that can be used in this items place?
 - ii. Can we stop consumption of this item altogether?
4. Have the class consider a different item in small groups such as a plastic soda or juice bottle. How would this be different from the water bottle example?
5. At this point, teacher should guide the students to a conversation about consumption. Would we reduce waste if we never used the item in the first place?

Elaboration

1. Waste stream worksheet
2. In small groups, students select three (depending on time) other items they saw in the trash bins during their investigation.
3. Create a line for each item, and for each item complete the table on the second side of the worksheet.

Evaluation

1. As a class:
 - a. Students volunteer items they analyzed and the 'alternatives to disposal' they thought about
 - b. Guide a conversation around waste disposal, diversion, and consumption

Homework

Ask students to write a 5-question interview about waste in their home. Have students interview their parents/guardians about what is thrown out in their house, why it was necessary, etc.

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Investigating Your School's Waste Stream

Name:

Identify garbage cans in your school and keep track of what you find in each bin.

Bin #1 Location:

Item

Number in Bin

Bin #2 Location:

Item

Number in Bin

Bin #3 Location:

Item

Number in Bin



Consumption			Disposal		
<i>What is the item?</i>	<i>Who purchases it? Who uses it?</i>	<i>What are alternatives to using this item?</i>	<i>Where did they dispose of it?</i>	<i>Why did they dispose of it?</i>	<i>What are alternative types of disposal?</i>