



Crystal Springs Live!



PUBLIX SUPER MARKETS
CHARITIES

HOW LONG IS THAT GOING TO BE HERE?

Purpose:

Florida's water resources are precious and need to be conserved. This lesson will help students understand that what they toss into their trashcan in their homes can impact both surface water and groundwater in Florida.

Objective:

Students will arrange items in order according to the time it takes them to degrade in a landfill.

Students will create a list of ways to reduce the amount of items sent to a landfill.

Background:

Garbage and landfills are as old as human civilization. Native American civilizations in Florida made mounds called middens; of shells from the oysters and mussels they ate. In recent history our garbage has become more and unhealthier for the Earth. Most people don't think about their trash once it goes to the curb. How long will it last in a landfill? What harm can it do once it gets to the dump? Could some of that garbage be composted or recycled?

Procedure:

Before you begin:

Find out the address of the landfill nearest your town or school. Use Google maps or a similar program to locate the landfill. Zoom out on the map to find water bodies near the landfill. Have this available to be projected during the lesson or a print out of the map with water bodies available to show the students. Find out if this is where your schools garbage goes.

1. Display the items on the materials list or write the names of the items on the board. Ask students "What do all of these things have in common?" Accept all answers, and guide students to the conclusion that all of these items are things that may get thrown into the garbage.
2. Ask students "Where does your garbage go once the garbage truck has picked it up?" The correct answer will be either a landfill or an incinerator. This lesson focuses on landfills.

Vocabulary

Landfill	Biodegradable
Decay	Runoff pollution
Surface water	Ground water
Recycle	Degrade
Compost	

Grade Level

3rd -7th grade

NGSSS

SC.4.P.10.4 SC.4.P.8.2

SC.5.P.8.2 SC.7.E.6.6

Length

1-2 hours

Materials

Paper
Pencils
Computer access (optional)
Pictures or examples of:
Paper towel, Aluminum can (empty)
Cigarette butt, Banana Peel,
Plastic water bottle, Leather,
Styrofoam cup, Newspaper,
Plastic Bag, Glass Bottle,
Plywood, Monofilament Fishing line
Apple Core

3. Show students the map of the landfill nearest your school. Explain that landfill usually work by digging large holes, piling the waste in the hole and covering it up to make hills. The holes are usually lined to help protect the environment, but things can go wrong with liners. Ask students “Is there any way that this landfill could affect the wetlands nearby?” Correct answers may include trash blowing away before it is buried, chemicals seeping into the ground through a tear in the liner, or runoff into lakes and rivers nearby.
4. Go back to the list of items in the materials list. Ask students to work with a partner and put the list in order from the item that would break down the fastest in a landfill to the one that would take the longest to break down. When they have finished ask each pair for the item that would degrade fastest and the one that would take the longest. Make hash marks next to the list on the board to see class data. Show students the correct list, without times.
5. Once students have the correct list, ask them to pair up again and guess how long it takes each item to degrade in the landfill. When they have finished, go through the list and ask students for guesses and then reveal the true answer.

Discussion:

Ask students to brainstorm ways they can keep the items that take the longest to break down out of landfills, and in turn out of wetlands. This may include recycling, buying items with less packaging, or composting.

Assessment:

Have students create posters to display around school with information they learned to make others aware.

Resources:

<http://www.greenlivingtips.com/articles/311/1/Waste-decomposition-rates.html>

Correct order and time-Please note that many factors can affect how fast items break down, so times are approximate and may vary.

Paper towel	2-3 weeks
Banana Peel	2-5 weeks
Newspaper	6 weeks
Apple Core	2 months
Plywood	1-3 years
Cigarette Filter	1-5 years
Plastic bag	10-20 years
Leather	50 years
Styrofoam cup	50 years
Aluminum Can	80-200 years
Plastic water bottle	450 years
Monofilament Fishing line	600 years
Glass bottle	1,000,000 years