

Trash Timeline

Overview:

Students will work together to figure out the relative order in which certain pieces of trash biodegrade.

Objectives:

1. Students will learn about biodegradation and the lifespan of common trash.
2. Students will think about the importance of recycling and the consequences of littering and waste production.

Time: 15-20 minutes

Materials:

Articles of trash from list below, one piece per student (preferably collected during a clean-up activity).

Procedure:

1. After a clean-up activity, discuss with students the concept of decomposition. Compare the items collected to items that you would put in a compost bin.
2. Have students choose one piece of trash each. There should not be repeats; each student should have a different object.
3. Have the students arrange themselves in the order they believe these items will decompose.
4. After students have arranged themselves in what they believe is the proper order, read off the amount of time it takes each item to decompose from the list below and have them rearrange themselves accordingly. Before reading off the decomposition time, you can also have students guess how long they think it would take each item to completely degrade and compare their estimates to the actual times.

<u>Type of Trash</u>	<u>Approximate time to biodegrade</u>
Paper towels and loose leaf paper	2-4 weeks
Orange or banana peels	2-5 weeks
Newspaper	6 weeks
Apple core	2 months
Candy and gum wrappers	1-3 months
Cardboard box	2-3 months
Cotton T-shirt	1-5 months
Waxed milk carton	3-5 months
Plywood	1-3 years
Wool sock	1-5 years
Cigarette filter	1-5 years
Paper plate	5 years
Pencil	13 years
Plastic bags	10-20 years*
Plastic film canister	20-30 years*
Nylon fabric	30-40 years
Leather	50 years
Tin Can	50 years**
Foamed plastic cup	50 years*
Styrofoam cup	50 years*
Rubber boot/ boot sole	50-80 years
Disposable diaper	450 years
Six pack rings	450 years*
Aluminum can	500 years**
Plastic beverage bottle	450 -1000 years*
Monofilament fishing line	600 years*
Aluminum Foil	Thousands of years**
Glass bottle	1 million years!!!

Biodegradation times depend on the environmental conditions. Materials will break down faster when exposed to the elements (sunlight, heat, rain, etc). and decomposers (fungi, bacteria, insects and other invertebrates). Landfills are not ideal environments for decomposition, so trash in landfills takes much longer to break down.

*Plastic and Styrofoam do not decompose. These items photodegrade (are broken down by sunlight) until they become microscopic particles, but those tiny particles stay in the environment forever. In some parts of the ocean, microscopic plastic particles outnumber plankton by 7 to 1.

**Metals do not decompose they oxidize and rust. This will happen faster in more corrosive environments.