

The Breakdown

FOURTH GRADE

You may have seen the bumper sticker: *Decomposition Happens*. It's a funny but truthful take on the fact that all organic things on earth will eventually break down into its simplest components. EUSD schools rely heavily on the process of decomposition as we compost lunchtime food scrap to reduce overall landfill waste. This activity gets students thinking about how things break down and shows them what items in their own lunch are biodegradable. **NOTE:** Do this activity after lunch.

SUBJECT

EXPLORE/SCIENCE

TIME

30 - 45 MIN

+

5 MIN WEEKLY FOLLOW-UPS

MATERIALS

Students' waste from lunch

Plastic cups & lids, 2 per group

Disposable gloves, 1 per student

Permanent markers, 1 per group

Scissors, 1 per student

Paper to shred, one sheet per group

Observation log, 1 per student

Clipboards, 1 per student

Rulers, a few to share

Garden soil or compost

Spray bottles, 1 per group

Paper bags (optional)

DIRECTIONS

- Ask students to save every piece of waste from their lunch (hand out bags ahead of lunch if necessary to collect).
- Gather students in the garden and separate them into six groups. Ask students to come up with a group name.
- Pass out markers, scissors, 2 plastic containers/lids to each group. Give each student an observation sheet, a clipboard and one disposable glove.
- Ask students what they know about the word biodegradable? (a process in which materials are decomposed by bacteria or other biological elements). Explain to students that items that are biodegradable are considered environmentally friendly because they can turn back into elements found in nature.
- Ask each group to work together to separate their waste into two piles: One pile for items they think are biodegradable and one pile for items they think won't break down over time. Record their predictions on the Observation Log. Next, using scissors, cut up the items so they are very small (about the size of a dime or smaller). Also cut up the piece of paper.
- Write the team name on the two cups and write Biodegradable on one cup and Nonbiodegradable on the other cup. Place the contents in the corresponding piles in each of the cups. Place a small piece of each type of item in the cups and do not overstuff. Add a bit of shredded paper to each cup. Cover with a small amount of soil from the garden or compost from the compost bin and spray until contents are moist with a spray bottle. Make sure the lid has at least one air hole on top and place them in a sunny location either in the garden or classroom.
- Make the first entry in the observation log and observe the experiment every week for four weeks to check on the progress of the two cups and see if what the team predicted to be biodegradable actually was. Record the data of both cups on the Observation Log.

SOURCE

- BCK Programs



Observation Log

Group Name:

Team Members:

Items we think are biodegradable:

Items we think are not biodegradable:

OBSERVATION 1 DATE:	
Draw a diagram of each cup and measure the height of the contents. Label the height on each diagram.	
Cup 1: Biodegradable	Cup 2: Nonbiodegradable
Describe the contents of each cup. What does it look like?	
<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>
OBSERVATION 2 DATE:	
Cup 1: Biodegradable	Cup 2: Nonbiodegradable
<hr/> <hr/> <hr/>	<hr/> <hr/> <hr/>



OBSERVATION 3	
DATE:	
Draw a diagram of each cup and measure the height of the contents. Label the height on each diagram.	
Cup 1: Biodegradable	Cup 2: Nonbiodegradable
Describe the contents of each cup. What does it look like?	
_____	_____
_____	_____
_____	_____
OBSERVATION 4	
DATE:	
Cup 1: Biodegradable	Cup 2: Nonbiodegradable
_____	_____
_____	_____
_____	_____

CONCLUSION: At the beginning of the experiment, you made predictions about what items you thought were biodegradable and which ones weren't. How accurate were your predictions? Did anything surprise you about the outcome?
