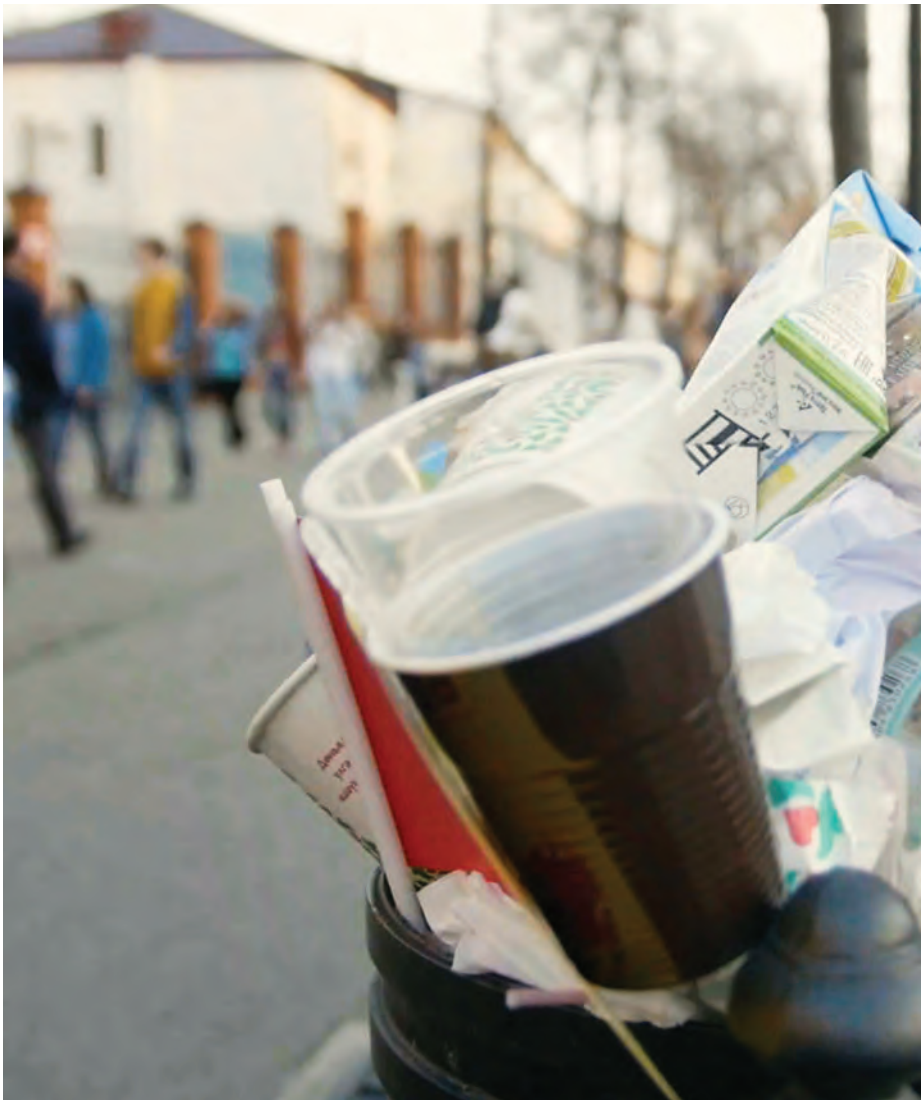


ECO ACADEMY

TEXAS DISPOSAL SYSTEMS

Lesson 1:

We Are All Trashmakers

The first step is to understand what trash is and where it goes. Trash doesn't just go away.

Grades 3rd - 6th

TEXAS DISPOSAL SYSTEMS

TexasDisposal.com

Ask Students

"What did you throw in the trash can last night? This morning?"

Have the class can make a list of items and create a graph for class tally.

Have a few students to look in trash cans in the classroom – What is thrown away in the classroom?

What is thrown away in the cafeteria? List all items.

Facts to Drive the Discussion

- We throw things away but don't realize where "away" is
- Waste can be organic – made from things that were once alive – like paper, towels, grass clippings, leaves or
- inorganic like metals, glass and plastic
- In 2014 we produced 258 million tons of waste in the U.S.*
- Only 35% of this waste was recycled or composted*
- Each person generates 4.4 lbs/day*. How much would our class produce in one year?
- Most waste is landfilled (52%)*
- Landfills – taking care of them means reducing the liquid that runs out of it (leachate) and capturing gas
- emissions from decomposition, packing and covering with soil, and planting trees (helps with erosion).
- Measures also include adequate liners, tracking and weighing all trucks and waste entering landfill.

* 2014 report of EPA's Advancing Sustaining Materials Management Data

The TDS Answer

Landfill in a Jar

- 6 large glass jars
- soil
- potato peels
- newspaper clippings
- ½ aluminum can
- ½ plastic bottle
- plastic bag
- pieces of Styrofoam

Ask the students how long they think these items will "survive" in the landfill. Record predictions on the board from "quickest to decompose" to "last to decompose." Ask them what evidence they are basing their predictions on (past experience, stories from others, visits to landfills, knowledge of materials).

How to Build the Landfill

1. Fill each jar ½ full of soil
2. Place one item of trash in each of the jars
3. Label jars as to contents
4. Cover with soil and moisten
5. Predict what will happen to each item in the jars
6. Leave lid off and place out of direct sunlight for 4 wks
7. Monitor daily and take photos
8. Questions to consider:

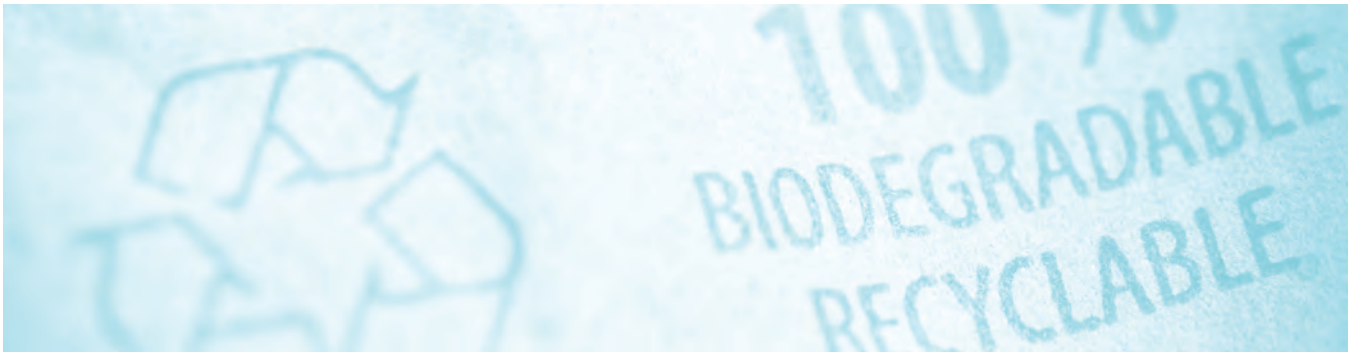
How did day 1 and final day differ for each item "landfilled"?

Which items could be composted? Which items could be recycled? What are consequences if we don't do enough recycling and composting?

Actual Lifespans of These Items in a Landfill

Potato peels: 2 – 4 weeks
Newspaper: 2 – 4 weeks
Aluminum can: 200 years
Plastic bottle: 400 years or more
Plastic bag: 1,000 years
Styrofoam: never decomposes

Adjust the activity: If you prefer to do this activity within one class period, bring samples of items and place them on the tables and let students predict their decomposition rates and place them in order. You can ask them what evidence they are basing this on (past experience, stories from others, visits to landfills and knowledge of materials) and then ask students to research this in pairs and report back to the group on one item.



Talking About Trash

Words to Know

Renewable – resource that can used repeatedly because it is replaced naturally (wood, paper, leather, oxygen)

Non renewable – resources for which there is a limited supply and cannot be replaced based on consumption rates (petroleum – plastics come from this, silver, copper)

Organic – derived from living organisms

Decomposition - the process by which organic substances are broken down into simpler matter.

Biodegradable – something that breaks down naturally and turns into soil