

Today's Trash is Tomorrow's Problem

A Long-Term Effects Activity

Estimated time for activity ~45 minutes

Objective

Students will analyze **plastic items** in their backpacks and classroom and determine what they're made of and what happens to those items after their use.

Essential Questions

- What types of materials make up everyday products used in the classroom?
- What are the effects of plastic on the environment when it is not properly disposed of?
- How can we eliminate single use plastic?

Materials

- Computer (class and/or one for each student/pair)
- Projector with sound capabilities to view videos
- Access to backpacks & classroom items

Background

Even though the **production of plastic** is just over 100 years old, plastic production didn't start ramping up until after World War II. In fact, according to National Geographic, half of all plastics ever manufactured have been made in the last 15 years. Plastics have gone on to do a lot of good like making life saving devices in the medical field, become parts of space crafts, made cars and jets lighter and thus more fuel efficient, but they have also caused a lot of pollution. Every year, about 8 million tons of plastic waste ends up in the ocean, that's equivalent to setting 5 garbage bags full of trash on every foot of coastline around the world.

Resources

- To learn more on ocean plastics, check out "[The Nurdles Quest for Ocean Domination](#)"
- For more background on plastic pollution, check out National Geographic's [explainer](#).

GRADE LEVEL



4TH - 12TH
GRADE

CONNECTIONS TO THE BIG IDEAS OF SUSTAINABILITY



LONG TERM
EFFECTS



SYSTEMS



Community

CURRICULAR CONNECTIONS



SCIENCE:
CAUSE AND EFFECT



SOCIAL STUDIES:
PEOPLE, PLACES, &
ENVIRONMENTS

Activity

Start by asking students to look in their backpacks and around the classroom to see **what things are made of plastic**. Write the items on the board or chart paper.

1. Once you have the complete list of items from all students, as a group **categorize the types of plastics**. For this activity, we will use two categories:
 - Single-use plastics (e.g. a plastic water bottle- used 1 time)
 - Multi-use plastics (e.g. a plastic desk chair- used multiple times)
 - Another category to consider is mixed materials. Many products are a mixture of plastics, metals, etc.
2. Discuss what happens to each product after its use. Does it get thrown away in the garbage, recycled, composted, etc? Have each student **draw a model** of the the item and where it ends up, including and labeling steps along its journey.
3. Have the students research what happens after the items gets “thrown away” in the appropriate receptacle and add the information to the model.
4. Watch the animated story [The Story of Plastic](#) from the Story of Stuff.
5. Take a few minutes to debrief the animation, and ask the students, **how do they think so much of their plastic waste ends up in the environment?** Students are encouraged to share out their models and journey of their plastic items.

Extension Activity

1. Either present the Google Earth story [Journey of a Plastic Bottle](#) from [SPLASH](#) or have students go through the presentation on their own. This can be applied to any place or location.
 - Press the “Present” button to start the journey and the “>” arrow to move to each new location of the plastic bottle’s journey.
2. Suggested questions to ask for each slide:
 - Slide 1 - Why does the bottle end up in the waterway (Buffalo Bayou) and not somewhere else?
 - Slide 2 - What else could happen on the bottle’s journey as it gets bumped and scraped?
 - Slide 3 - What negative impacts might the bottle have just laying on the ground?
 - Slide 4 - Why do you see a lot of trash debris after storm events?
 - Slide 5 - How do you think wildlife might interact with the bottle?
 - Slide 6 - What is a current and how might it affect things that are in the water?
 - Slide 7 - How might you think the water being deeper affects the trash?
 - Slide 8 - What are three consequences of trash collecting in the ocean.

Reflection Questions

- What actions could you take to ensure that trash gets to the correct place?
- What actions could you take to reduce the amount of trash you create?
- **How can we help ensure more eco-friendly solutions with our everyday shopping and consumption choices?**

