



## "Ghosts of Trash Past: The Long Life of Waste" October 2024 Lesson Plan -Elementary

### Lesson Overview

Students will explore the decomposition process of different materials, learn about the environmental impact of waste, and discover how proper disposal and recycling can reduce harm to the planet. Using real-world examples, including the work of Erika Leigh on composting textiles, the lesson will highlight how long various items like pumpkins, paper, plastic, and clothing take to break down.

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### Objectives

By the end of the lesson, students will:

1. Understand the concept of decomposition and how different materials break down over time.
2. Learn about the impact of long-lasting waste on the environment.
3. Identify ways to reduce environmental harm through proper disposal and recycling.
4. Explore the role of textile recycling and clothing decomposition.

### Time:

1 hour 20 minutes + optional extension activities

### Materials Needed:

- Visual timeline of decomposition for different materials (pumpkins, paper, clothing, plastic)
- Samples of a small pumpkin, paper, and a piece of cotton fabric
- Whiteboard or chart paper
- Markers
- Decomposition worksheet (with space for drawing and writing)
- A selection of clean recyclables (e.g., plastic bottles, old fabric scraps, paper) for the Halloween craft
- Craft supplies: glue, scissors, markers, googly eyes, string

### Vocabulary:

- Decomposition
- Landfill



- Gas (methane & carbon dioxide - include these specific terms for older students)
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## Introduction (10 minutes)

Engage:

- Ask the students: “What do you think happens to your trash after it’s thrown away?”
- Show pictures of a landfill and ask if they know how long different things last there.

Explain:

- Introduce the idea that different things decompose at different speeds and that some waste can harm the planet if it takes too long to break down.
- Write on the board: *Decomposition* – the process of breaking down into smaller parts by natural forces like bacteria, sunlight, and water.

Introduce the theme:

- Tell students that today they are going to become “Waste Detectives” and investigate the lifespan of different kinds of trash through the spooky lens of *Ghosts of Trash Past*.

## Main Lesson

### Part 1: Investigating Decomposition (15 minutes)

Activity:

- Prepare to show the visual timeline of decomposition for common materials: (You can image search these).
  - **Pumpkin:** Around 2-3 months
  - **Paper:** 2-6 weeks
  - **Clothing (cotton):** 5-6 months
  - **Plastic bag:** 500-1,000 years

Hands-on Activity:

- Display the pumpkin, paper, and cotton fabric samples. Let the students feel the materials and guess how long they might take to decompose.
- Write their guesses on the board next to the actual decomposition times.



### Discussion:

- Explain that while things like pumpkins and paper decompose fairly quickly, other things (like plastic and some clothing) can stick around for a long time.
  - Ask: "What happens to the earth if all this trash stays here?" Guide them to the conclusion that it can cause pollution and harm to animals and people.
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### Part 2: What Happens in a Landfill? (15 minutes)

#### Explain:

- Introduce the concept of a landfill. Explain that a landfill is a big hole in the ground where trash is buried. But not all trash goes away quickly! In fact, some trash stays in landfills for hundreds of years.

#### What Happens When Trash Decomposes?

- As trash decomposes, especially things like food or organic matter, it releases gasses like **methane** and **carbon dioxide** into the air. These gasses can harm the environment and contribute to global warming.
- Long-lasting materials like plastics don't release gasses the same way, but they create pollution that harms animals and can even end up in oceans, where sea creatures might eat them by mistake.

#### Ask the Class:

- "Why do we need to reduce how much waste goes to landfills?" Encourage answers like: "It helps protect animals, reduces pollution, and stops harmful gasses from entering the air."

#### Solutions:

- Talk about what can be done to prevent items from sitting in landfills: recycling, composting organic materials like food and natural fibers, and reducing the use of things like plastics.
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### Group Activity: Trash Timeline Game (10 minutes)

- Divide students into small groups.



- Give each group a set of cards with pictures of different materials (e.g., a pumpkin, paper, cotton t-shirt, plastic bag, aluminum can).
  - Have the groups arrange the materials from fastest to slowest to decompose.
  - Afterward, go over the answers and reinforce how long different items last in the environment.
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## Halloween-Themed Craft: Recycled Ghosts (15 minutes)

### Introduction:

- Now that the students understand how important it is to reuse and recycle, introduce a fun Halloween activity: *Recycled Ghosts!*
- Explain that instead of throwing things away, we can repurpose them to make fun Halloween decorations.

### Instructions:

1. Give students a selection of clean recyclable materials (plastic bottles, old fabric scraps, paper).
2. Using these materials, students will create *spooky ghosts* by wrapping fabric or paper around bottles, adding googly eyes, and decorating with markers or string.
3. Encourage students to get creative with their ghosts and remind them that they are using materials that would have otherwise been thrown away!

### Discussion During Craft:

- While students work on their projects, ask them to think about how many of the items they are using could have ended up in a landfill. Discuss how reusing items is a great way to help the environment.
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## Individual Activity: Waste Detective Drawing (5 minutes)

- Hand out the *Decomposition Worksheet*.
  - Ask students to draw a picture of an item they use every day and guess how long it might take to decompose. They should write whether they can recycle, compost, or throw it away.
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## Closing Discussion & Extension (5 minutes)

### Wrap-Up:



- Ask: “What can we do to help the planet?”
- Encourage answers like recycling, composting, donating old clothes, and buying less plastic.

#### **Extension:**

- Encourage students to ask their parents to start composting food waste or natural clothing.
  - Invite them to bring in one item from home they think could be recycled, and share why it's important to recycle it.
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#### **Suggested Books**

- *Why Should I Recycle?* by Jen Green
  - *Compost Stew: An A to Z Recipe for the Earth* by Mary McKenna Siddals
  - *The Adventures of a Plastic Bottle: A Story About Recycling* by Alison Inches
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#### **Closing Activity: Ghosts of Trash Past Reflection (5 minutes)**

- End with a reflection on how small actions, like recycling clothes and composting, can help reduce the ghosts of trash past. Ask: “What will you do differently to help the planet?” Let students share their answers with the class.