

Leo Baekeland | Lesson Plan

How has the invention of synthetic plastic influenced modern life?

Students will learn about Leo Baekeland's innovations with plastic and his intentions for the product. They will understand the original role of plastic in preserving the natural environment, and consider its many uses and benefits.

Learning Objectives:

- Describe the negative impact that natural plastics once had on the environment.
- Restate the motivations for inventing and improving man-made plastic.
- Summarize previous attempts to innovate plastic and why they were not fully successful.
- Detail Leo Baekeland's discoveries and contributions to the field of modern plastics.
- Express the reasons that plastic is often criticized in the modern world.

Key Vocabulary:

- **Extinction:** When a species of animal completely dies out.
- **Flammable:** Able to explode or be easily set on fire.
- **Hybrid:** Mixed between two types. For example, a hybrid plastic was an attempt to mix synthetic and natural materials to form a better plastic.
- **Synthetic:** Man-made.
- **Fossil fuels:** Fuels made naturally in the earth from fossilized (dead) animals or plants. Examples of these include coal and petroleum.
- **Humane:** Caring or gentle towards living things.
- **Pollution:** When part of the environment, such as the air or water, is contaminated with waste.

Educational Standards: CCRA.R.1, CCRA.R.7, CCRA.R.10, CCRA.SL.1, CCRA.SL.2, CCRA.L.6

Academic Subject Areas: Biography, Science, Environment

What You'll Need

- Video: *Leo Baekeland: The Innovator of Modern Plastics* (Watch [Here](#))
- Worksheet: *Leo Baekeland: The Innovator of Modern Plastics* (Click [Here](#))

Lesson Plan (45 minutes)

Warm-Up: (10-15 minutes)

1. Begin by prompting students to imagine a world without any plastic. What favorite objects would be missing or changed? What might a favorite tool or toy be made of instead?
2. Timed discussion: Have students divide into pairs and think through their day without plastic. What routines would change? How would they have to do things differently, and what would they miss the most? When the timer ends, invite pairs of students to share their conclusions.



3. Introduce the subject of the lesson, scientist and inventor Leo Baekeland. Explain that Baekeland was a scientist who invented the first fully man-made plastic. He paved the way for the central role plastic now plays in our everyday lives.

Watch & Complete: (20 minutes)

1. Hand out the worksheets to the students. Quickly review the worksheet with the students so they know what to listen for.
2. Play the video for the class, pausing after key sections to ensure comprehension and help students answer pertinent questions as they watch.
3. Pair and share: After watching the video, divide students into pairs or small groups to complete the "Making Connections" section. Invite groups of students to briefly share their lists and ideas with the class.

Wrap-Up: (10 minutes)

1. Ask questions to make connections and assess understanding of the video:
 - What problem were scientists trying to solve with man-made plastics?
 - What other benefits did plastic have? What unexpected problems came with it?
2. Collect the worksheets as an assessment or use them to guide further discussion.
3. Conclude with an open-ended prompt to encourage continued discussion:
 - After watching the video, do you think plastic is a good or bad thing? Why?
 - How does Leo Baekeland's work still influence our lives today?

Don't have time for the full lesson? Quick Activity (15-20 minutes)

Distribute the worksheet and allow students to complete it while they follow along with the video.