Trash Free Lunch

Trash Timeline

Students will use common items found during cleanups to create a visual timeline depicting the rate of biodegradation if these articles of trash were left in our environment.

Lesson Characteristics:
Use the table below for lesson planning purposes:

Grade	5th – 12th grade
Time Required	30 minutes
Key Science Practices	Observation skills, constructing explanations, asking questions
Key Concepts/Terms	Decomposition, biodegradation, watersheds, litter, human impact
Setting	Classroom or outdoors.
Materials	Trash Timeline (plastic bottle, glass bottle, aluminum can, tin can, Styrofoam, newspapers, paper towel, cloth, fishing line, plastic bag, cardboard)

Next Generation Science Standards:

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Asking Questions and Defining Problems	ESS2.C The Roles of Water in Earth's Surface Processes	Patterns
Constructing Explanations and Designing Solutions	ESS3.c Human Impacts on Earth Systems	Cause and Effect

Learning Objectives
Students will...
Learn about trash and its impacts on the environment
How trash ends up in our environment
How is this linked to a watershed, what is a watershed?

Line up trash from the least amount of time to break down to the most amount of time to breakdown

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Preparation:

Gather the supplies needed to complete the task - Plastic bottle, glass bottle, paper towel, aluminum can, tin can, Styrofoam, newspapers, cloth, fishing line, plastic bag, cardboard. Alternatively, students could make a list of these items and sort them when prompted in the video.

Background Information:

Vocabulary:

Term	**Definition**
Watershed	An area or ridge of land that separates waters flowing to different streams, rivers, lakes, or oceans.
Decomposition	To break down
Biodegradable	To break down naturally

Procedure:

Follow the steps in the table below to conduct the activity.

Sentences in bold are suggestions for what an educator might say to students.

Items in italics are possible student answers to questions.

Step	Action
5E's: Engage	Learning Cycle: Invitation
1	Use the following discussion questions prior to having students watch the video: **What is a watershed? What watershed do we live in?** **Have you seen trash on the ground or in a waterway?** **How does trash get into our environment?** **How does trash end up in our waterways?** **What happens to the trash when it just sits in the water or along a shoreline?** **What does decompose mean? What does biodegradation mean?**
5 E's: Explore	Learning Cycle: Exploration
2	Have students watch the AFF video on Trash Free Lunch.
5 E's: Explain	Learning Cycle: Concept Invention
3	Review the timeline presented in the video. **What types of materials will break down the fastest? What types of materials will take the longest to break down?**
5 E's: Elaborate	Learning Cycle: Application
4	**What can we do to prevent trash from entering our environment? What alternatives could we use instead of plastic?**
5 E's: Evaluate	Learning Cycle: Reflection
5	**What did you learn from this lesson?** Have students complete the worksheet.