

TRASH TIMELINE

GRADE LEVEL(S) K-8

LESSON OBJECTIVE

Students will become aware of pollution by learning about the many different types. They will see how long it takes for everyday items to break down in the ocean environment and learn how trash in the ocean affects its inhabitants. Students will also discuss ways to make changes at school and home to reduce pollution in the community.

EDUCATION STANDARD(S)

K – Physical Science 1.a; IE4.b
Grade 1: Investigation and Experimentation 4.a
Grade 2: Investigation and Experimentation 4.c
Grade 3: Investigation and Experimentation 5.a
Grade 5: Investigation and Experimentation 6.a

MATERIALS NEEDED

- Yellow rope approx 12 ft long
- Tags with the months/years and tags with objects: paper towel = 2-4 weeks; newspaper = 6 weeks; apple core = 2 months; milk carton = 3 months; cigarette butts = 1-5 years; plastic bag = 10-20 years; tin/steel can = 50 years; aluminum can = 200 years; 6-pack rings plastic holder = 400 years; plastic bottle = 450 years; monofilament fishing line = 600 years; glass = undetermined
- Actual trash items: paper towel, newspaper, picture of apple core, milk carton, cigarette butts in jar, plastic bag, tin can, aluminum can, 6-pack plastic holder, plastic bottle, monofilament fishing line, glass bottle or jar
- Zip ties or string to attach tags to rope
- Blank sheets of paper for independent work
- Colored pencils for independent work

MOTIVATION

Access prior knowledge and arouse enthusiasm by asking students the following questions. How many different kinds of trash do you think there might be? Do most of these trash items remain in the environment for a short time or a long time? How long do you think a piece of trash on the ground will be around?

DIRECT INSTRUCTION

1. Give background on meaning of biodegradable and how trash affects the ocean in the ocean as it breaks down. Biodegradable means decaying naturally in the environment.
2. Lay trash timeline yellow rope out so that it is straight from end to end. Get out labels. Either have students work together on attaching tags to rope in order or do it ahead of time.
3. Describe each trash item to be used.
4. Pass out all items (1 per 2 students).
5. Give students a couple of minutes to place the items by the length of time they think it would take the item to biodegrade in the ocean. Encourage them to work with their other classmates.
6. After time is up have them ask you how many are right.
7. Attach the answer card to the ones that are right and have a student read the answer and discuss why.
8. Give them a few more minutes to reorganize the trash that was incorrect and continue until they are all right.
9. When finished go over the correct answers with them.
10. Discuss possible solutions for how we can generate less trash in our oceans.

GROUP/INDEPENDENT WORK

Draw a picture or write a few sentences about what we can each do to make a difference, for each kind of trash, such as instead of throwing away a soda can you can recycle it or instead of using a plastic bag you can use a reusable tote bag. Present ideas for sustainable alternatives to each kind of trash. Reflect on questions such as, "Were you surprised at what you observed?" or "What was the most shocking trash item and time it took?"

ACCOMMODATIONS AND MODIFICATIONS

For lower grades, only use some of the tags. Prepare the timeline with tags attached ahead of time. Concentrate on a few items, how long they take to break down, and a few alternatives that we can do to help. For upper grades, use all the tags. Have them work on creating the timeline, attaching tags and hold discussion on problems and solutions.

Explain to students what it means for an item to break down.

Show one item in various stages of decomposition (such as an apple). Keep an apple core in the classroom and examine it daily/weekly prior to starting this lesson.

ASSESSMENT/WRAP UP

Have students create a timeline on a regular size sheet of paper. Have them label the timeline and items.