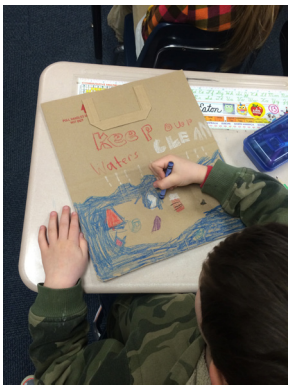
# EARTH DAY BAG PROJECT
# 2017 LESSON PLAN





## Grades: 3-5 | Time: 60 minutes | http://bit.ly/NEMIEDBP

**PURPOSE:** This lesson helps youth explore the impacts of single-use plastics and be part of the solution by raising awareness about the issue and importance of refusing to single use. Choosing to be stewards of our Great Lakes and ocean is a personal decision and should not be forced. However, youth should have opportunities to explore and learn.

**OBJECTIVES:** Students will be able to...

- Explain multiple ways to be a part of the solution and refuse single-use plastics
- Share their knowledge of the impact of plastics on the Great Lakes and ocean with their community through decorated grocery bags
- Identify ways that plastics are negatively affecting our community, the Great Lakes, and ocean
- Learn more about being a better steward of the Great Lakes and ocean

**MATERIALS:** Crayons or Markers | Paper grocery bags | Printed Labels | Videos

*Google drive link to videos (**http://bit.ly/2017EDBPfilms**)*

**BACKGROUND INFORMATION:**

Oosthoek, S. (March 24, 2017). Deep-sea dump: Trash is collecting on the Arctic seafloor. *Science News for Students.* Retrieved from: http://bit.ly/trashocean

Oosthoek, S. (June 2, 2016). Uh oh! Baby fish prefer plastic to real food. *Science News for Students.* Retrieved from: http://bit.ly/babyfishpreferplastic

Yeager, A. (Dec. 16, 2016). Food-like smell on plastic may lure seabirds to eat it. *Science News for Students.* Retrieved from: http://bit.ly/seabirdsplastic

LEADERSHIP FOR THE NORTHEAST MICHIGAN GREAT LAKES STEWARDSHIP INITIATIVE PROVIDED IN PARTNERSHIP BY:

# PROCEDURE

*Before launching the lesson, reach out to a local grocery store to partner with you for this effort. You will use paper grocery bags from the store, and once decorated, these bags will return to the grocery store on* ***Earth Day (4/22)*** *to raise awareness about the impact of plastic pollution and solutions to this growing problem.*

1. Ask youth - what are single-use plastics?
    - Brainstorm where you might find single-use plastics.
2. Ask youth - do you think single-use plastics are a problem for our Great Lakes?
    - Quickly ask each student to respond yes or no. Do not comment!
    - Then, ask a couple youth, who responded yes, to explain why plastics are a problem.
        - Look for personal connections (e.g. I cut my foot on a piece of plastic at the beach).
    - Then, ask a couple youth, who responded no, to explain why plastics are not a problem.
        - Many people do not think about the impact of plastic on our Great Lakes.
3. Today, we are going to explore the impact of single-use plastics on our Great Lakes and ocean.
4. Watch ***Litter Monsters (http://bit.ly/littermonsters)*** and discuss video referencing the guiding questions below.
    - What happens to the trash in the video?
        - When we dispose of trash improperly, it can end up in the street or in a nearby park.
        - When it rains, the rain carries this trash to a nearby storm drain or river.
    - When trash and plastic enter our storm drains in northeast Michigan, where does it eventually end up?
        - Most of our storm drains flow directly into local streams or rivers and sometimes into the Great Lakes.
        - When trash enters our storm drains, that trash flows into a local stream or river.
        - All but two rivers in Michigan lead to the Great Lakes, and the Great Lakes eventually flow to the ocean.
        - Once in the Great Lakes or ocean, wildlife, like birds and fish, can confuse this plastic as food and eat it.
    - What can we do to stop these litter monsters from getting into our water?
        - Refuse to single use, and follow the three Rs (i.e. reduce, reuse, recycle). Be a part of the solution!

5. Watch ***Bag Monster (http://bit.ly/nobagmonster)*** and discuss video referencing the guiding questions below.

- How many plastic bags do you think you use in a single year?
  - Every time we go shopping and choose to use a plastic bag, we help the Bag Monster to grow. Americans use on average 500 plastic bags each year.
- Why do people transform from being a Bag Monster when they receive a reusable bag?
  - When we choose to stop using plastic bags, we are no longer feeding the Bag Monster.
  - Instead single-use plastic bags, you can refuse a bag if you only have a couple of items to carry, or you can go reusable by bringing your own cloth bag.
- How does Mr. Eco-Hero catch attention and make his point in the video?
  - Allow youth time to share their understanding from the video.
  - Are there really Bag Monsters? Did the Bag Monster help you think about all the plastic we use?

6. Watch ***Plastics 101 (http://bit.ly/Plastics101)*** and discuss video referencing the guiding questions below.

- What happens when plastic enters our rivers, lakes, and ocean?
  - In the water, plastic breaks down into smaller and smaller pieces when exposed to sunlight and UV radiation. While breaking down, these plastics act like sponges and absorb toxins found in the water, like PAH, DDT, and PCBs. Plastics break into small enough pieces and are commonly mistaken for food by marine life. When plankton or fish eats a plastic; the plastic enters the food web.
- Ask youth again - Do you think single-use plastics are a problem for our Great Lakes?
- What are some changes you can make your life to refuse to single use?
  - Here are some potential changes: Say “no straw please” at restaurants; Bring your own to-go container or ask for foil (which can be recycled) to wrap your leftover food; Use reusable water bottles.
- This video was made by Ella M. White 5th graders to educate us about plastic pollution.
  - Brainstorm ways we can raise awareness about this issue in our community (e.g. Tell family and friends about the harm of plastics on our environment; Make posters).

7. Today, we are going to decorate paper bags with messages about the impact of plastic pollution on our Great Lakes and solutions to this problem. These bags will be given out to customers at the local grocery store on Earth Day (4/22), and they will help our community to understand how plastic impacts our Great Lakes and what we can to refuse to single use.

# STANDARDS ALIGNMENT AND BRIEF CONNECTION

The Earth Day Bag Project is a conversation about the changes to our environment due to plastics and how we (our community and students) can be the solution. Plastics in our ocean have impacted wildlife and research on its impact in the Great Lakes is just beginning.

***3-LS4-4- Biological Evolution: Unity and Diversity*** *- Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.** | http://bit.ly/3-LS4-4

The Earth Day Bag Project is an opportunity to help youth explore the impact of plastics on our Great Lakes ecosystem through a conversation about the organisms that eat plastics and why they mistake plastic for food.

***4-LS1-2- Molecules Organisms: Structures and Processes*** *- Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.* | http://bit.ly/4-LS1-2

The Earth Day Bag Project may spark a conversation about energy use – otherwise a loose connection as plastic is a petrochemical product (i.e. made from oil).

***4-ESS3-1- Earth and Human Activity*** *- Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.* | http://bit.ly/4-ESS3-1

The Earth Day Bag Project is a great way for youth to be part of a solution as they explore ways individuals and their communities can work together to protect and preserve our Great Lakes and other natural resources.

***5-ESS3-1- Earth and Human Activity*** *- Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.* | http://bit.ly/5-ESS3-1

As demonstrated in the ***Plastics 101*** video, plastics are changing an aspect of our ecosystem leading to a much broader impact.

***5-LS2-1- Ecosystems: Interactions, Energy, and Dynamics*** *- Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.* | http://bit.ly/5-LS2-1