

LESSON 6: MARINE DEBRIS

SUMMARY

Despite its prevalence, marine debris is a problem that each individual citizen can help prevent. Education is the first crucial step in mitigation. By exploring marine debris, we can help foster environmental stewardship and create advocates for the marine environment. With every person that participates in a cleanup, uses a reusable bag or water bottle, or spreads the word about marine debris, we move one step closer to creating a more beautiful and healthier marine environment.

Next Generation Science Standard

MS-PS1-3. Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

BACKGROUND INFORMATION

Marine debris is a problem that plagues coastlines around the world. In the past, it was considered primarily an eyesore. Today, through research, we know how seriously marine debris impacts marine habitats, marine wildlife, human health, safety, navigation, and the economy. Plastic bags abandoned fishing nets, and other debris can smother sensitive coral reef habitats and benthic ecosystems.

Each year, many marine mammals, birds, and other organisms become entangled in or ingest various forms of debris. Fishing and shipping industries are also impacted by marine debris, as they pay vessel repair costs and must replace any damaged gear. In addition, coastal communities spend millions of dollars cleaning up their shorelines every year.

At NAMEPA we believe we can make an impact with one action at a time. Every individual plays a critical role in educating on the devastating effects of marine pollution, individuals are increasingly making the commitment to the 5 R's: Refuse, Reduce, Reuse, Recycle, and Repurpose. To eliminate as much single-use plastic from your daily lives as possible – the less waste produced, the less waste is at risk of entering our waterways.

OBJECTIVES

Students will:

- Be empowered to change their relationship with plastics
- Identify different types of marine debris
- Collaborate to come up with solutions to prevent and reduce the impact of marine debris.

LESSON PLAN MARINE DEBRIS

TIME

45 minutes

MATERIALS

- Marine Debris slides
- Trashy Timeline Activity
- Life of a Plastic Bag video
- *Optional: Cleaned trash*

ENGAGE

Begin the lesson by asking students if they have heard of the term, "marine debris." Write the words **MARINE** and **DEBRIS** on the board for students to see. Solicit responses from students on what comes to mind when they hear the word "marine" and again for "debris." For example, students may say ocean and garbage. Connect the words so students can make sense of the term marine debris.

EXPLORE

Divide students into groups. Supply each group with the Trashy Timeline cards. Have students compete with other groups by creating a timeline of how long it takes for the trash to breakdown in the ocean.

After groups finish their timeline, share the answers based on how many years it approximately takes for these items to breakdown. Which group had the timeline in the correct order?

EXPLAIN

Ask students if plastic items truly breakdown *completely*. Explain to students how often plastic remains in the ocean as micro or nano-plastic. Have a discussion with students on where plastic comes from (derived from oil) and has a significant impact on marine ecosystems.

EXTEND

Ask students to brainstorm and discuss potential solutions to reduce marine debris, both at individual and societal levels. Encourage creative and realistic ideas that follow the 5 R's: Refuse, Reduce, Reuse, Recycle, and Repurpose.

EVALUATE

Conclude the lesson by discussing how marine debris impacts marine ecosystems. Evaluate student understanding by asking them to write down how marine debris is connected to synthetic materials and natural resources. Ask students to list one potential solution to reduce marine debris.