**Enduring Understandings** Everyone’s actions have an impact (both positive and negative) on the environment. Designing a solution to a problem requires collaboratively defining and constraining the problem, as well as testing and redesigning possible solutions. **Objectives:**  Students will use scientific data to design a solution to reduce microplastics  Students will articulate the costs and benefits of their solution to humans and the natural environment **Time:** Time for this lesson will vary. At least one 60-minute lesson for discussion and generating solutions will be required, along with any additional time to implement students’ plans **Materials:** Student notebooks, Folders or large paper, Markers, crayons, or colored pencils, Chart paper, Folders with “student solutions guide” information **o Individual actions o Making laws o Education**

**Standards**

***Next Generation Science Standards***

**MS-ESS3-3** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment **MS-ESS3-4** Construct an oral and written argument supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon or a solution to a problem **MS-ESS3.C** Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise.

***Common core***

**RST.6-8.7** Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually **WHST.6-8.9** Draw evidence from informational texts to support analysis, reflection, and research

***Ocean Literacy***

**6.E.1** Scientists are still learning a lot about marine organisms and ocean ecosystems. New information is useful for helping guide policy decision and individual actions.

**6.E.7** Everyone can make informed decisions that reduce human impact on the ocean.

**6.E.13** Everyone can make informed choices about what they purchase and which businesses they support in ways that are environmentally friendly.

1. Everyone can use their knowledge to vote on larger issues that affect the ocean.
2. Everyone can advocate through their actions and by sharing information about the wise use and protection of the ocean.