

Regional Science Consortium

Microplastics – Teacher Guide

Student Worksheet Answer Key

1. Which material did you determine made the best filter? Why?

There are many correct answers to this. Students should show good reasoning and determine the answer from their experimental results.

2. Did it remove both large and small fibers?

This will vary with student results. The answer should relate to mesh size.

3. Did it remove *all* of the fibers?

No efficient filter will remove all fibers. In order to maintain a reasonable flow rate some fibers will pass through the filter. Students should understand why finding a balance between both factors is important.

Lesson Tips & Tricks

PowerPoint Presentation

- This is a complex topic that can leave students feeling distressed for the well-being of animals and the environment. We recommend emphasizing the solutions at the end of the lesson to leave students on a positive note and with a list of actions they can readily employ.

Filter Engineering Challenge

- Encourage groups to try different combinations than their fellow classmates so more filters are tested overall. This helps students think like a team finding a solution to the problem, rather than in the context of a competition.
- For best results, fibers should be distributed throughout the water in the bottle. Encourage students to shake well prior to each filter test to break apart these fibers. This will prevent the fibers becoming a large clump when tested with the filter.
- Depending upon the age of the students, they may need assistance with securing the rubber band around the neck of the bottle.
- This activity can be slightly messy (which students seem to enjoy), however it is just water. Be prepared by having paper towels available for each team to clean up any water that might leak during their experiment.