

Are there Microplastics in Santa Monica, California?

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01. Introduction

- Microplastics are plastics that were broken down over time into pieces smaller than 5 millimeters.
- Microplastics have two types. Primary microplastics are from clothes or cosmetics. Secondary microplastics are from larger plastic such as water bottles.
- They are usually made of beads, pellets, film, foam, and fibers. Microplastics are found in many locations, such as the beach.
- While microplastics are mostly found in the ocean, they are spread across the air as well. Microplastics are everywhere, from the water to the food we eat such as meat, plants, or dairy.

02. Project Goals

Research Question: How have microplastics affected people and the environment?

- For people to understand what secondary microplastics are and the negative impacts they have.
- Highlights this information by studying photos, graphs, and surveys.

03. Methodology

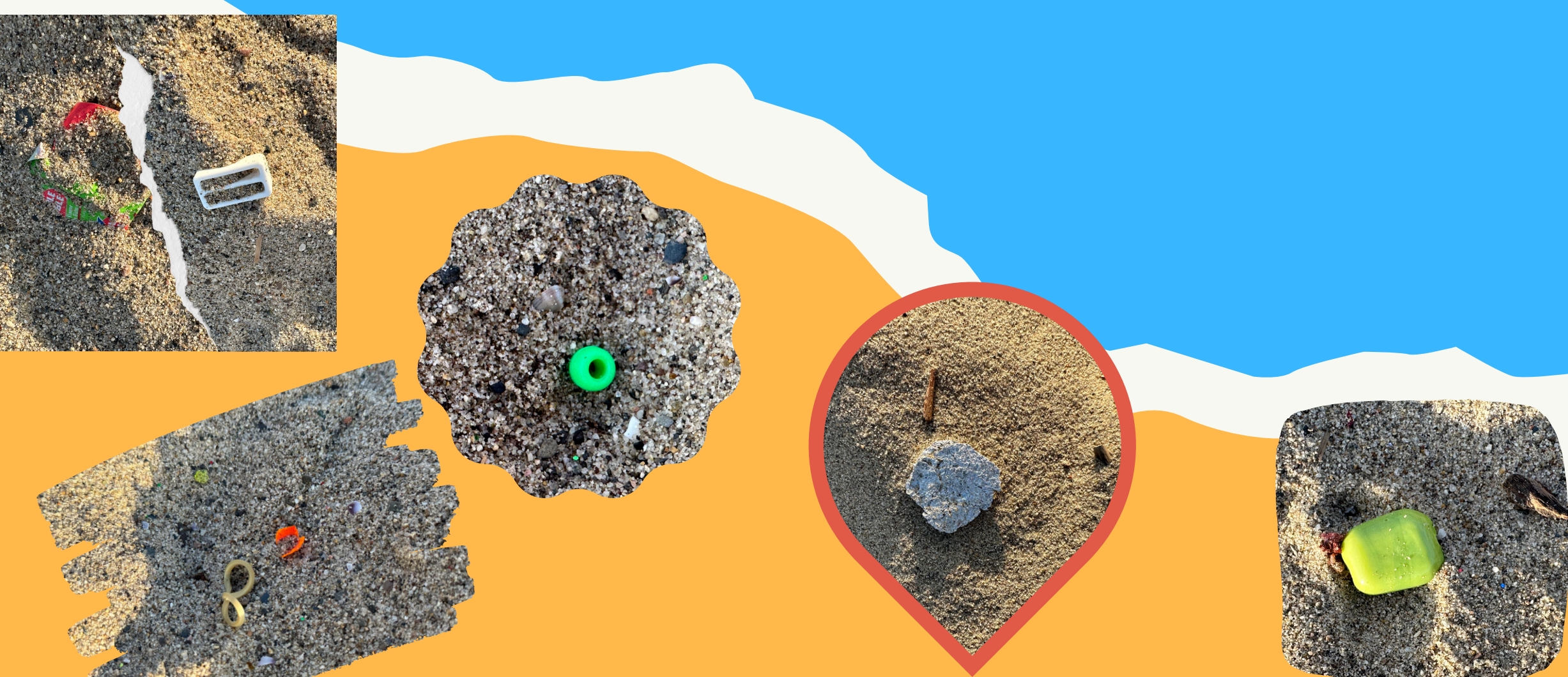
I went to Santa Monica Beach and walked around looking for microplastics. I found over 30 pieces of microplastic. I also interviewed some researchers such as Southern California Coastal Water Research Project (SCCWRP) and National Oceanic and Atmospheric Administration (NOAA) for data and more information about microplastics.

- **Pie Chart of the microplastics I found**
- **Survey data from over 30 participants**
- **Used graph from Our World in Data**

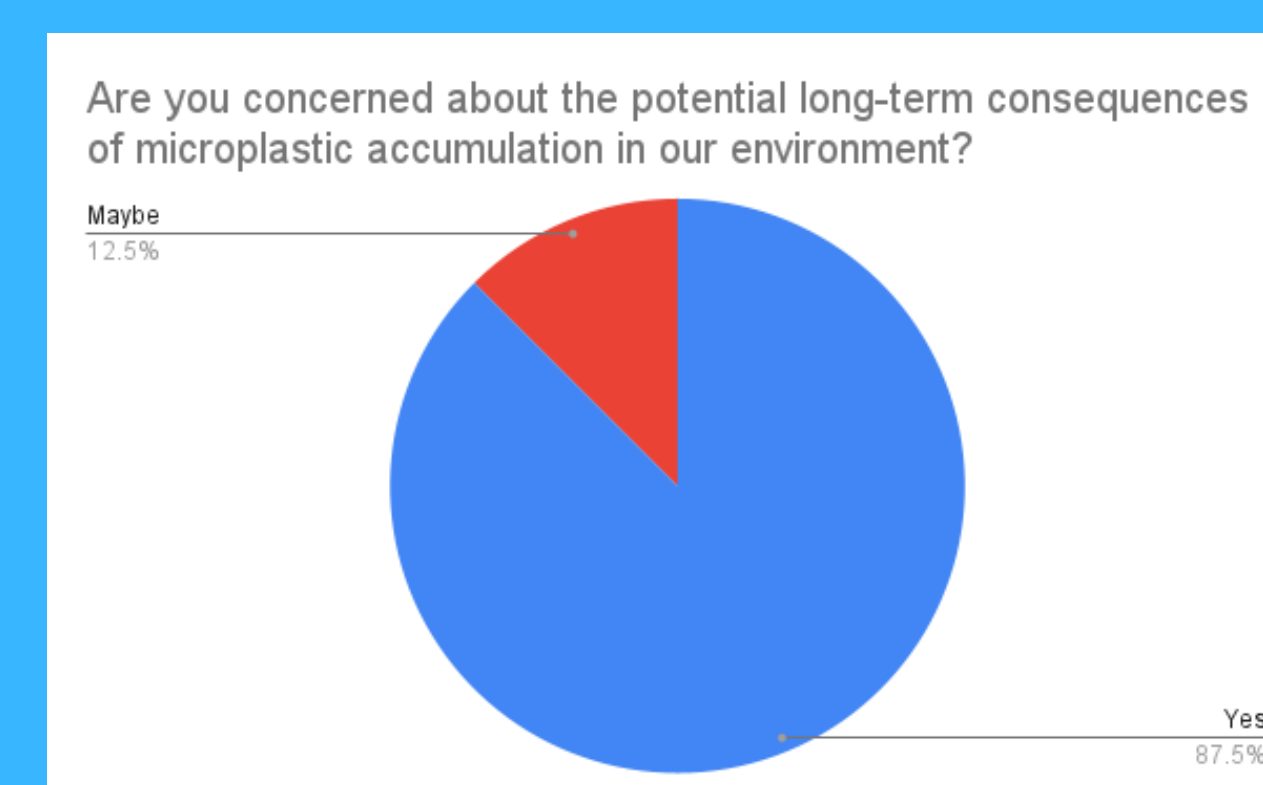
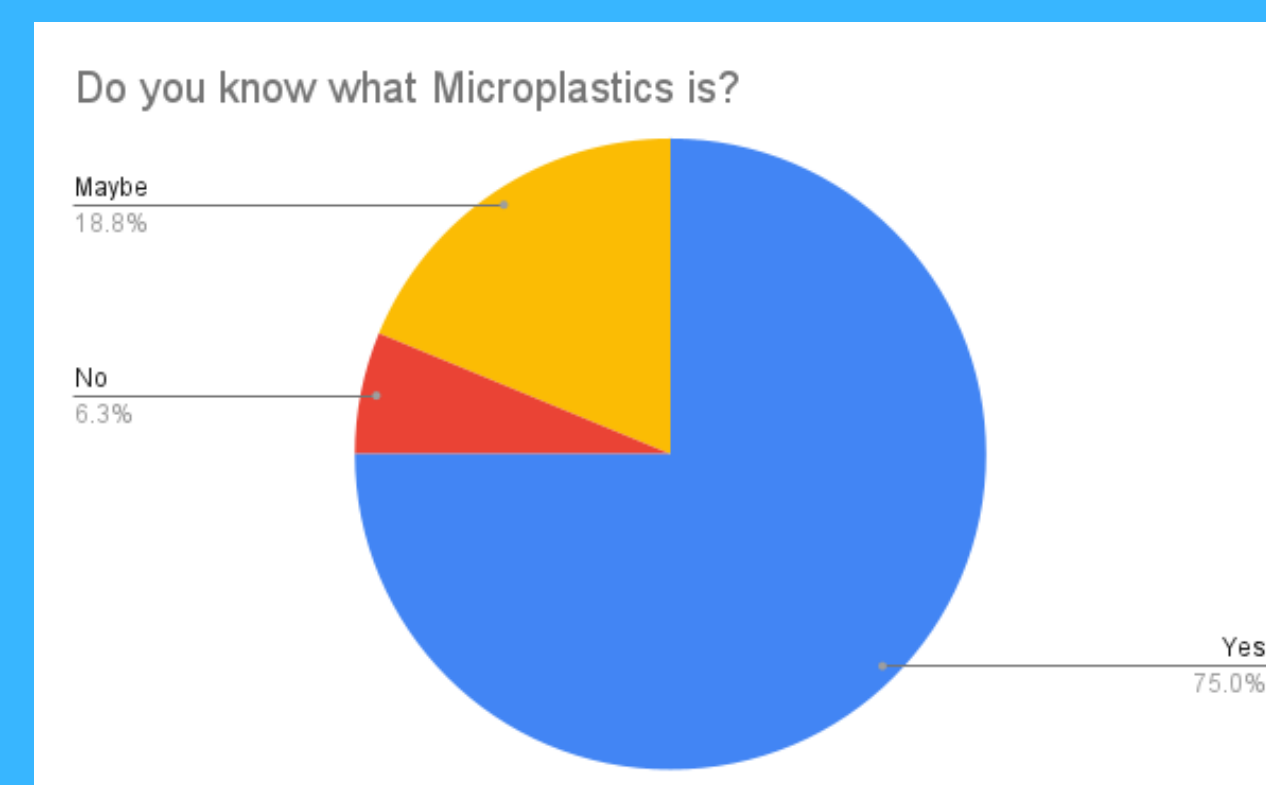
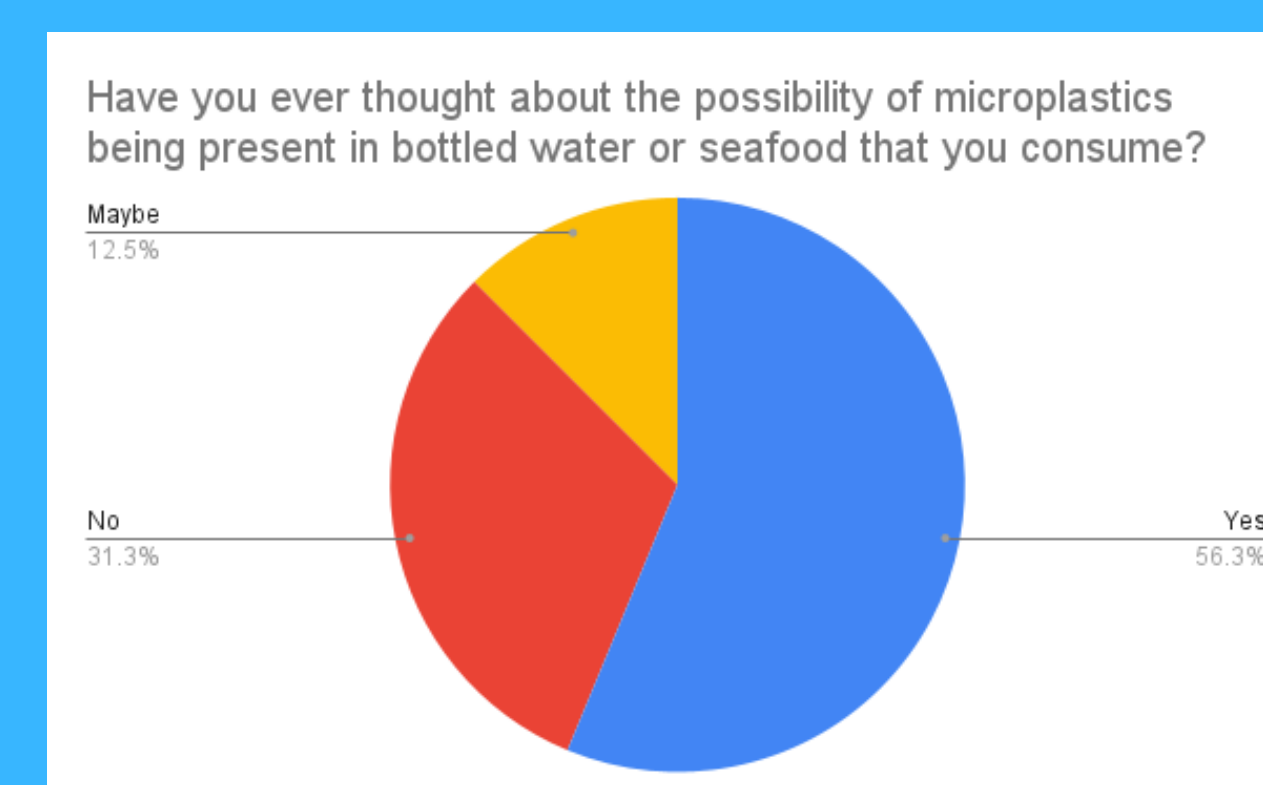
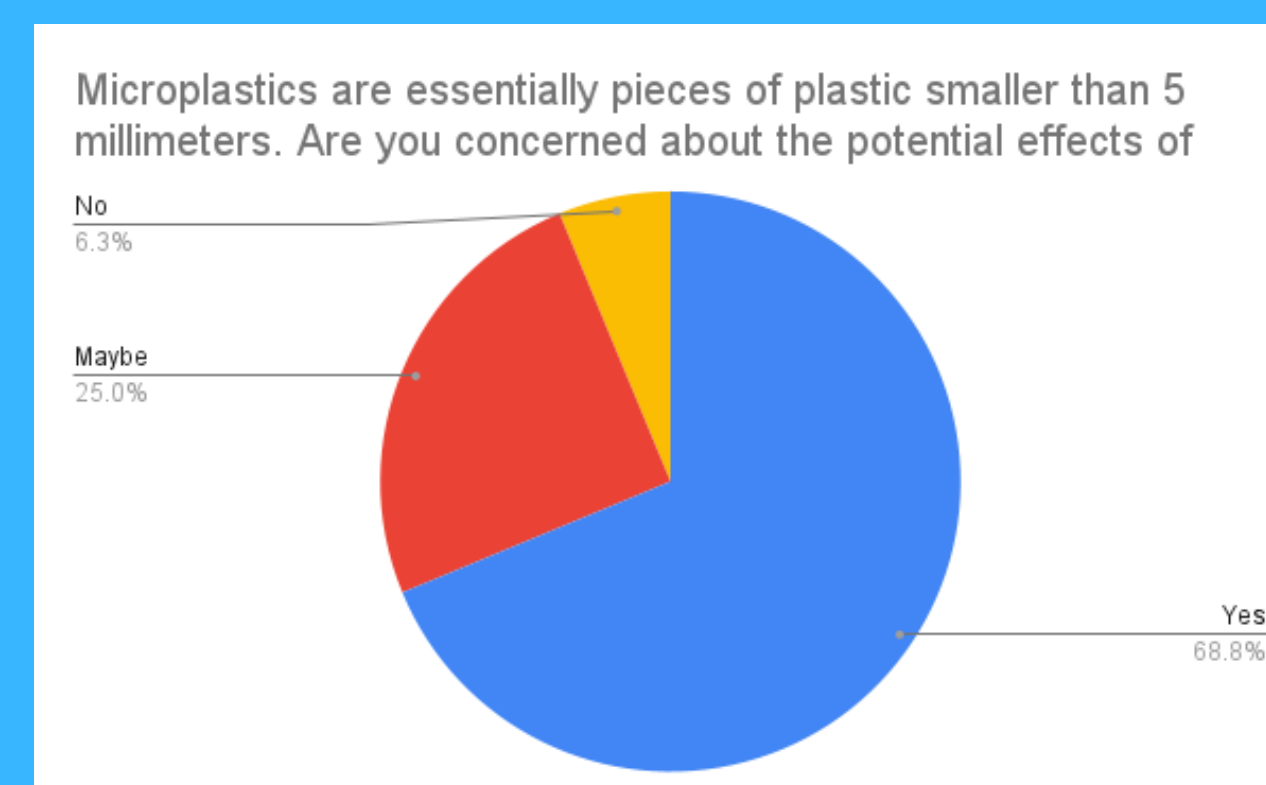
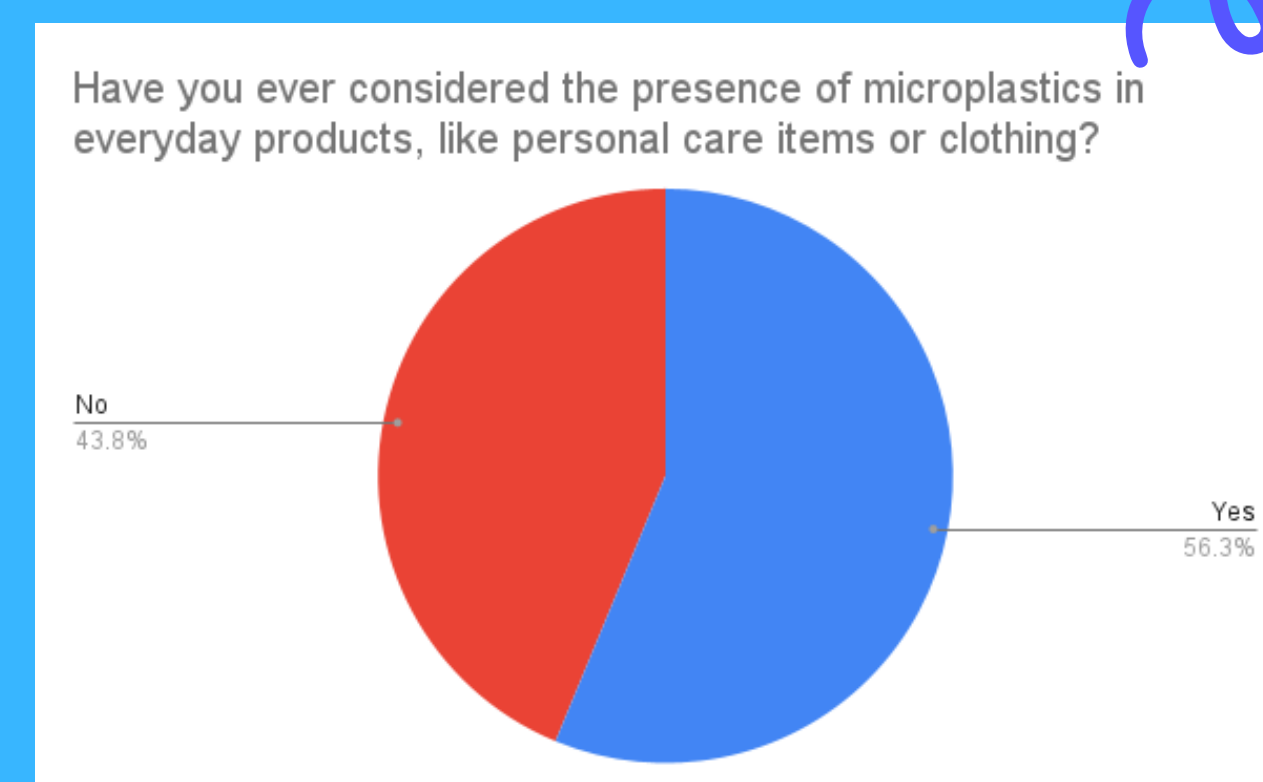
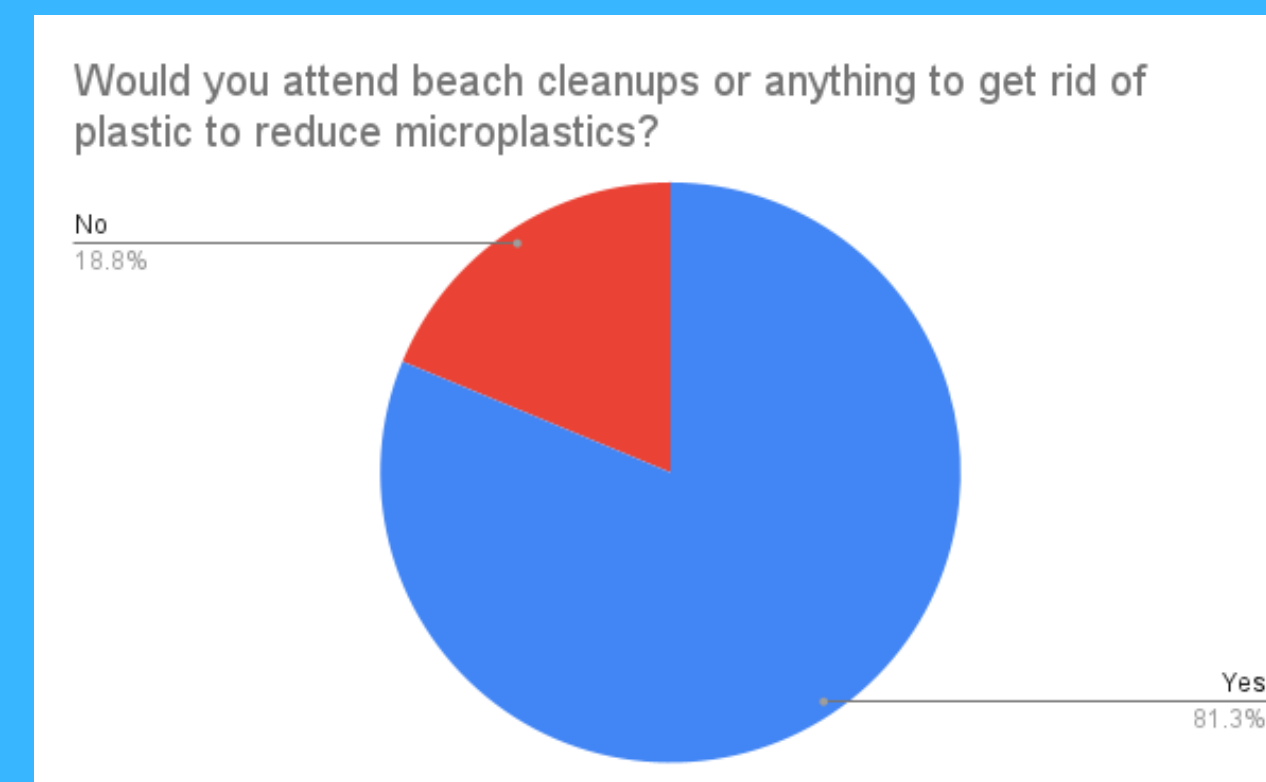
04. Results

Microplastics have affected the environment and people negatively as we discovered microplastics can get into our lungs and are eaten by animals including us.

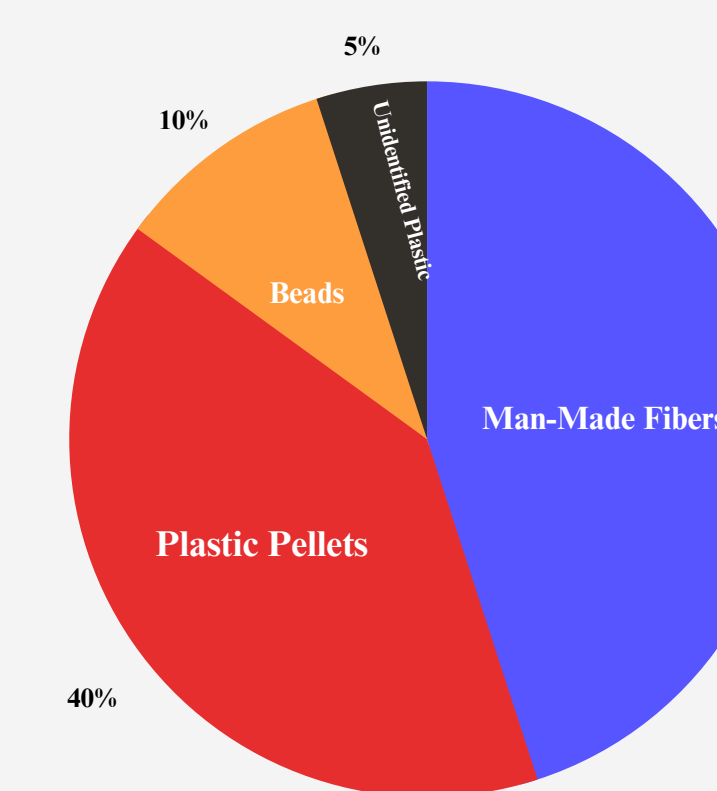
- The survey encased several opinions with many voicing concern on spreading awareness about microplastics into the world.
- The graph and pictures showed that in the near future, both primary and secondary microplastics can become a serious issue as they are found everywhere across beaches and the world.



Data



This survey showed that microplastics have people worried about secondary microplastics. If microplastics continue to increase, it is bound to have some consequences.



- Analysed data from microplastics seen at the beach.
- Collected over 35 pieces of microplastic and looked closely to determine the type of plastic.
- Determined the man made fibers were the most secondary microplastics I've seen at 45%.
- The second would be plastic pellets at 40% which is a significant amount considering I didn't see all the microplastics, and only a small margin of it at the beach.

"I think it's important because it's essential that we notice the affects of how microplastics on our body can cause cancer or have several health deteriorations."

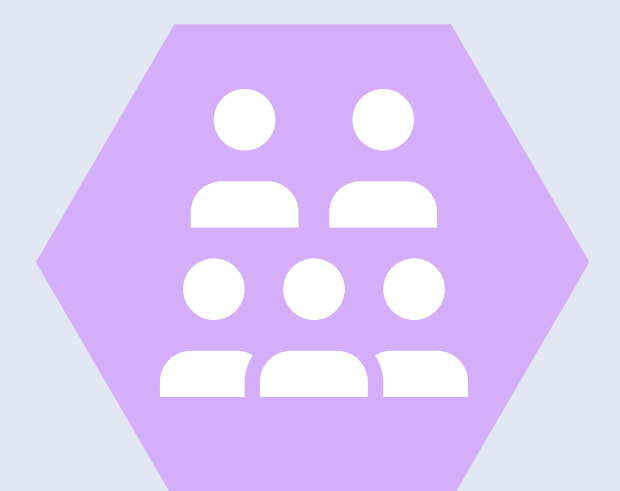
"Yes because people can't help if they don't know what's going on that's why it's good to raise awareness"

"I believe that it's important to raise awareness about micro plastics as it will get more peoples attention to the state of this world and would help gain more support on protecting the environment."

"I don't know very much about micro plastics but I think they are important to learn about because they contaminate areas. I know that there is controversy about micro plastics in household items like deodorant, but that's about it."

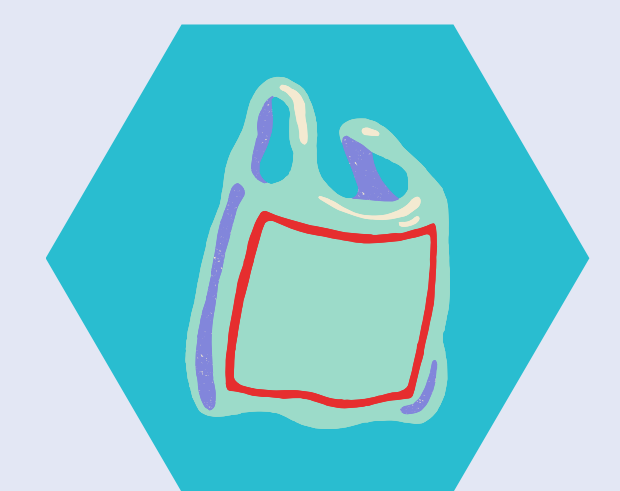
Microplastics Recommendations to reduce exposure

1. Tell people you know
Spread the word
Telling people is the best way to spread the word and help people understand the crisis of primary and secondary microplastics. By spreading the word, we can influence people to research more about the topic or do something about it, creating a bigger impact.



2. Research about it
Through whatever resources are available
If you're interested in microplastics, it's always great to learn more about them and ask questions. It can be great to reach out to professors or those who have more knowledge about microplastics and ask questions.

3. Reduce Plastic Use
They affect all living creatures
Try using things you can use again such as food containers, and bags that are reusable, and don't use many single-use plastics. Reducing plastic is one of the key things that are available to reduce microplastics. Recycling is also a great idea, especially at this time.



4. Use Reusable Things
Using reusable things like waterbottles help!
Reducing the amount of plastic water bottles you use, can reduce thousands of single-use plastic which can break down into microplastics. Reusing things can also bring multiple benefits since it's not a one-time use product.

5. Volunteer at Cleanups
It helps to clean plastic from the beach
Some beach cleanups focus on cleaning up microplastics such as Fieser Lab, but even cleaning up beaches from trash and plastic helps a lot. It reduces the plastic that people have littered and creates a more eco-friendly environment for everyone.



Sources:

The Southern California Coastal Water Research Project:
<https://www.sccwrp.org/>

Meagan Fieser Lab:
<https://fieserlab.weebly.com/beach-cleanups.html>

National Oceanic and Atmospheric Administration:
<https://experience.arcgis.com/experience/b296879cc1984fda833a8ace93e31476>

Our World in Data:
<https://ourworldindata.org/grapher/microplastics-in-ocean>