

The Plastic Problem

Grade 8-12



Plastic is an integral part of daily life for much of the world. The first plastic based synthetic polymer was invented in 1907. The word Plastic originally meant “pliable and easily shaped”. Plastic is a more recent term for the category of materials known as polymer. Polymer means “of many parts”, which means polymers are long chains of molecules. Polymer is a wide umbrella term, and today there are a wide variety of different kinds of plastics in the world. Polymers are found naturally, but over the last century and a half humans have learned how to make synthetic, or unnatural, polymers.

<https://www.youtube.com/watch?v=ZA7bcm4adE8>

What was the point of plastic?

Plastic is relatively inexpensive to make and highly transformative. Plastic has done a lot for humans. Plastics could be pulled into thread and used to create clothing. It is used in parts for the automotive and aircraft industry, that allows us to travel the world. It can be used to create hard building material for furniture, cabinets, glasses and utensils which are impact-resistant and durable. Pipes are often made out of plastic, which doesn’t corrode and is cheaper to make than metal pipes. We use plastic to keep our food fresh and safe for long periods of time. It is used commonly in bottles, bags, and food wrapping to contain goods that we consume on an everyday basis. **Plastic is everywhere.** And plastic does not go away.

When plastic was first invented, humans were not aware of what the consequences would be. Research around plastic had not been established. No one seemed to think about what this incredible invention would mean one hundred years down the road. Back then, it was easy. Now... we know better.

<https://vimeo.com/212684767>

Plastic in numbers:

- Last year, at least 8 million tons of plastic leaked into the ocean. That is 16,000,000,000 pounds
- 60-90% of marine litter is made up of different plastic polymers
- At least 51 trillion microplastic particles, from things like personal care products, cosmetics, and clothing, are already in the ocean.
- By 2050 plastic will outweigh fish in the ocean
- Marine litter harms over 300 Marine species, and 15% of those species are endangered

While it may sound like an insurmountable problem, **change does happen.** It starts on the individual level. To save global, we must fix local. The change starts with you. Where can you

make lifestyle changes, or smarter decisions to help prevent plastic in the first place? It is possible, and it is an accessible goal for everyone.

Fix Local to Change Global

Through the individual and community caring, with help from scientific research and exploration, entire countries are capable of change.

- Rwanda and Bangladesh have banned all plastic bags
- Canada added microbeads to its list of toxic substances
- France will ban single-use plastic cups, plates and cutlery by 2020
- United States and United Kingdom have banned microbeads in cosmetics

On a global scale, the United Nations has begun their *CleanSeas Campaign* to combat the global marine pollution problem. As of October 2017, over 30 countries have formally joined the campaign, declaring their support to its overall goals and taking specific commitments at the national level

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| • Belgium | • Iceland | • Panama |
| • Brazil | • Indonesia | • Peru |
| • Canada | • Israel | • Philippines |
| • Colombia | • Italy | • Saint Lucia |
| • Costa Rica | • Jordan | • Seychelles |
| • Denmark | • Kenya | • Sierra Leone |
| • Dominican Republic | • Kiribati | • Spain |
| • Ecuador | • Madagascar | • Sweden |
| • Finland | • Maldives | • Uruguay |
| • Grenada | • Netherlands | • United Kingdom |
| | • Norway | |

The CleanSeas Campaign has also secured key private sector partnerships, including:

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| • Parley from the Oceans | • DELL | • Volvo Car Corporation |
| • Lonely Whale Foundation | • Volvo Ocean Race | |
| | • 11 th Hour Project | |
| | • Musto | |

UN Environment participates in working groups gathering leading global companies, with the aim of improving plastics management in the upstream production processes and reusing plastic recovered from the ocean.

This initiative is being put into action in the Volvo Ocean Race 2017/2018. Britain's Dee Caffari leads team *Turn the Tide on Plastic* in the global sailing race, to amplify the United Nations

message. The Volvo Ocean Race holds 3 clear directions in their Sustainability Program: maximize impact, minimize footprint, and leave a positive legacy.

<https://www.youtube.com/watch?v=ql6pyW5AHuM>

The problem is a big one, and combating it is possible, IF everyone is able to make the little changes in their everyday life to contribute to the larger solution. It all begins with a conversation, an outreach or message to help spread the word just as the *Turn the Tide on Plastic* team is doing. So ask yourself: what am I going to do today to make a difference? What can I do myself, at home, and in my community, to start the tidal wave of change that we as humans on this planet can create? It all starts today. It all starts with you.

Task: Choose one of the following options from the [Ocean Literacy Secondary Course](#)

Option 1

Identify one to three changes that you can make in the following areas:

- a. Your own life/decisions
- b. Your home space
- c. Your community space. This could be a school, center, sports field, playground etc.
- d. In a business.
- e. In the city

Write a blog about how these changes could be communicated and accomplished. Think about both the disadvantages and advantages, and who would be most impacted by this change. Is it feasible?

Option 2

Challenge yourself by **Going Green!** "Going Green" is a term that can apply to many different initiatives. It essentially means adjusting parts of your lifestyle to be more environmentally friendly or sustainable. These do not have to be big changes either. Something as simple as bringing your own reusable grocery bags to store, buying products and food that is made locally, or using bringing your own coffee mug to the cafe. All these little changes have an impact on your local environment, and can help influence others to make changes themselves.



You will need a clear jar for this activity. This can be found in your home, such as an empty jam or peanut butter jar, or can be found at supermarkets or dollar stores.

For 3 to 5 days, carry this jar with you. Take it everywhere you go. Every time you use a piece of plastic that would otherwise go into the garbage, put it into your jar. Collect all of your single-use plastic for one week, and see just how much plastic (or how little) you use in 5 days.

After the 5 days, examine the contents of your jar. Write up a [BLOG](#) about the experience.

- Were there any plastic products that you could have avoided?
- Was there any plastic that was unavoidable?
- What was the biggest obstacle you faced during this challenge?
- What advice or strategies would you suggest to others to help them go plastic free?
- What is something you learned during this experience?

Option 3

Locate a water source away from the coast line. This could be a lake, river or stream that is in a landlocked area of your country. How does water travel in and out of this water source? What journey would plastic take if it were to begin in this water source.

Create a map to demonstrate the journey that both water and plastic would take, starting from your selected water source. Your map could be hand drawn, digital, a photo series, or a stick map. Whichever form you feel most connected to, which will tell the story of your place and the water it is connected to.

If possible, go and visit your water source. What threats can you identify that might impact your water sources? Are there any protective measures in place to protect your water source? Are there any containments already in your water source? Post your map to the [Gallery](#), and include these observations in the description of your map.

Resources:

Vancouver Aquarium: <http://www.vanaqua.org/act/research/ocean-pollution-research-program>

Chemical Heritage Foundation: <https://www.chemheritage.org/the-history-and-future-of-plastics>

BBC News: <http://www.bbc.com/news/magazine-27442625>

How Stuff Works: <https://science.howstuffworks.com/plastic4.htm>

Clean Seas: <http://cleanseas.org/>

Volvo Ocean Race: <http://www.volvoceanrace.com/en/home.html>