

## 2TC Marine Debris Citizen Science Project

(<https://uncw.edu/marinequest/grantsprojects/ttc/citizensciencesignup.html>)

Since the spread of COVID-19 and quarantines around the world, Mother Earth has started to heal. Air quality has improved and animals are returning to areas where they haven't been seen in a long time! We want to find out if marine debris has also improved and ***we need your help***. By collecting data on litter in our neighborhoods, we can understand how COVID-19 impacts pollution and marine debris.



According to the National Oceanic and Atmospheric Association ([NOAA](#)), marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes. In other words, **marine debris is a man-made object that winds up in the ocean**. The object could vary from a plastic bottle to a large fishing net lost at sea. This pollution causes many safety challenges for marine wildlife and are a major cause for concern. Animals can become entangled in discarded waste or ingest foreign materials.

We know that marine debris comes from land, but just how is it getting into the ocean? **Most of the marine debris comes from humans littering on land**. Debris travels from the ground outside our homes into waterways such as rivers and storm drains, via wind and rain. These rivers and drains lead right to the ocean! Once in the ocean, plastic and trash break down into smaller pieces, but never disappear. These tiny plastics are suspended in the ocean water and look very similar to small plankton which most marine wildlife will mistake for food.



All litter in our communities makes its way into the ocean, and cleaning up trash is a great way to help stop marine debris. As a [Turtle Trash Collector](#) you can earn digital badges by collecting this trash and preventing marine debris!

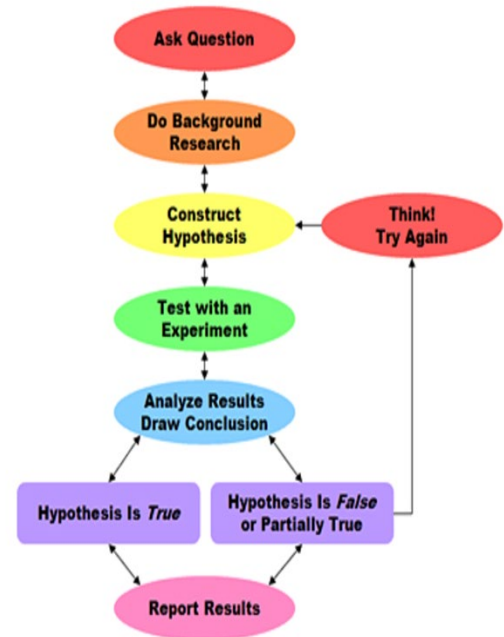
If you have any questions about this project, email us at [marinequest@uncw.edu](mailto:marinequest@uncw.edu)

## For this project, we will use the Scientific Method

The scientific method is a method of research. It is a series of steps you can take to figure out an answer to a question. Any question you ask can be proved by these steps.

**Step 1:** Make a hypothesis about what you will find. When do you think you will find the most trash in your community: during quarantine or after? Why? What do you think will be the most common item found?

# Scientific Method



**Step 2:** Choose your location. This can be your neighborhood, a park close by or even the beach. Print out a map of your chosen location using Google Maps (<https://www.google.com/maps>) or Google Earth (<https://www.google.com/earth/>). With a pen, draw your intended route through the map. Make sure to follow this exact route each time you collect trash.



**Step 3:** Prepare your materials for collecting trash and begin your route. You will need: your map, a data sheet, pencil, and a bag to collect trash. We recommend this [Ocean Conservancy data sheet](#), or the Marine Debris Tracker app, but you can also make your own by recording items you found and tallying as you go. Other useful items include a clipboard, gloves, and tongs or a trash grabber. To make your own grabber or reusable bag from upcycled materials follow this link to the 2TC handbook and scroll to the bottom: <https://uncw.edu/marinequest/documents/grantsprojects/2tchandbook.pdf>

**Step 4:** Go out and collect trash along your route! Once you have collected the trash along your route, take a picture and dispose of it properly. Record your data in the charts below and graph the total number of trash items collected.

This chart allows you to keep track of the items you collected to earn each of the Turtle Trash Collectors badges.

Top Items Collected	Trip 1: ( / / )	Trip 2: ( / / )	Trip 3: ( / / )
Cans			
Bottles			
Drink Pouches			
<b>Total Drink Items:</b>			
<b>Total Straws:</b>			
Wrappers			
Chip/Snack Bags			
<b>Total Wrappers:</b>			
<b>Total Plastic Bags:</b>			
Fast Food Container			
Plastic Utensils			
<b>Total Containers/Utensils:</b>			

If you found 10-20 pieces of trash in any of these categories, you earned a 2TC badge!!! Check off which ones you earned below. We will send them to you after you submit your data



**Total badges earned:** \_\_\_\_\_ out of 6

Other Common Items Collected	Trip 1: ( / / )	Trip 2: ( / / )	Trip 3: ( / / )
Fishing gear			
Balloons			
6-pack holders			
Cigarettes			
Construction materials			
Foam pieces			
Glass pieces			
Plastic pieces			
Other:			
Other:			
Other:			

Most common item: \_\_\_\_\_

Most unique item: \_\_\_\_\_



**Step 5: Report your data to us using this form:**

<https://uncwyouthprograms.wufoo.com/forms/2tc-citizen-science-project/>

**Step 6:** Repeat steps 3, 4 and 5 two more times. The second time when some businesses begin to open, and the last time when everything is open and back to normal. **Be sure to record your data here and submit it to the 2TC team for each trip.**

## Explore your results!

Once you complete all three cleanups, use the questions below to understand what your results mean.

Was your hypothesis correct or incorrect? Why?

In which cleanup did you collect the most trash? Why do you think this is the case?

What are some other factors that could impact trash in your community?

How could the trash you collected have impacted wildlife near your home and/or in the ocean?

Based on your data, do you think pandemics are good or bad for the environment? Why?

Another way to help is to make less trash by using reusable items! Match the reusable alternative to the following single use items:

### **Single use items:**

Plastic water bottle  
Ziploc baggie  
Plastic straw  
Plastic grocery bag  
Paper lunch bag  
Disposable diaper

### **Reusable alternatives:**

Metal straw or No straw  
Reusable bag  
Reusable water bottle  
Lunch box  
Cloth diaper  
Tupperware container