



KIDS ENVIRONMENTAL LESSON PLANS

This lesson developed by:



What is Hiding in the Water?

Overview:

Students build dip and plankton nets out of common materials and use these in local trawls to find out what is hiding in their local waters.

Ocean Literacy Principles:

4. The ocean made Earth habitable
5. The ocean supports a great diversity of life and ecosystems
6. The ocean and humans are inextricably interconnected
7. The ocean is largely unexplored

Key Concepts:

- Learn about local marine ecology and how size in marine organisms can vary
- Learn how to use ordinary materials to build scientific collection tools

Materials:

- plastic bottle
- stocking
- cord
- washer
- coat hanger
- broomstick
- cheesecloth
- magnifying glass or microscope (optional)



What is Hiding in the Water? (cont.)

Duration:

2 hours

Physical Activity:

Moderate

Background and Resources:

Background information on marine ecology and different types of plankton can be found at: <http://www.chesapeakebay.net/discover/bayecosystem/plankton>
<http://www.nhptv.org/natureworks/nwep6d.htm>

More information on marine plastics and debris can be found at: <http://marinedebris.noaa.gov/whatis/>
<http://www.takepart.com/oceans/plastic-pollution>

Activity:

1. Split students into at least two groups. Have one group construct a plankton net and the other a dip net. Multiple nets can be constructed in groups of larger students.
2. Conduct plankton trawls. This can be done either by wading along a beach or shallow waterfront, towing the nets as you walk parallel to the shore, or by towing the nets from a very slow moving boat. Aim to tow the nets for a distance of at least 50m. Once a tow has been completed, place the contents of the net in a plastic bag, bottle or other receptacle. Label it either "plankton tow #1" or "dip tow #1". Complete at least three separate tows with each net.
3. Give each group at least one group of samples from a plankton and a dip net tow. Have the groups spread the contents out on a waterproof table, white paper etc. Ask the students to compare the results from each different tow. Did one gather more material? Are there larger organisms in one of the groups? What other differences are there between the samples from the two different kinds of nets? Why might this be?
4. Ask the groups to divide up the materials in their tows into those that are organic and those that are manmade. Make sure the students look closely at smaller pieces that may be plastic. Is there a lot of trash? Is this what they expected to find? Where do they think it came from?
5. If time permits, students can begin to identify the species present in their samples. Species keys can be found and downloaded by region at http://species-identification.org/identify_species.php

Discussion:

1. Why do you think the samples varied depending on what nets were used? If you were a scientist how might you choose a net size depending on what you were interested in studying?
2. Did you find more or less in your tows than you expected? Was it smaller? Bigger? How do you think this would vary if you were in a river? On the coast? In the middle of the ocean?
3. How much plastic was found in the tows? Do you think this is something that would be the same everywhere in the ocean? How might you go about removing it?

What is Hiding in the Water? (cont.)

Plankton Nets, Dip Nets, and Scoops

