



DENSITY & CURRENTS

Oil floats on water because it is less dense than water. Density plays an important role in our oceans. Cold, salty water is denser than warmer, less salty water, and these density differences drive deep ocean currents. These ocean currents, in turn, strongly influence the Earth's climate system.



Ocean FEST

sponsored by the
National Science
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CLIMATE CHANGE, SEA LEVEL RISE & OCEAN ACIDIFICATION

Greenhouse gases like CO₂ cause the Earth to warm and ice to melt. When glaciers & ice caps melt, sea level rises. Rising sea level will submerge parts of our islands. Also, CO₂ dissolves in the ocean, which makes the ocean more acidic. This is a big problem for corals and other marine life. You can help by reducing your carbon footprint. Drive less, and bike or walk instead.

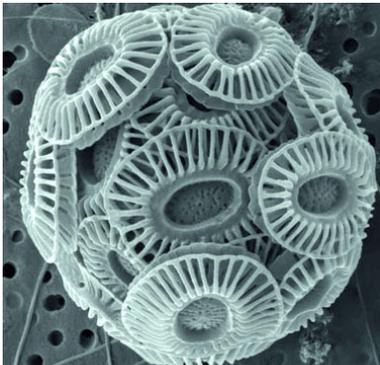


BIODEGRADABLE SPOON

Ever wonder how long it takes for plastic to degrade? It can take centuries! When plastics enter our oceans, they cause a lot of problems. Marine animals might get entangled in them, or eat them by mistake. You can help by picking up litter before it enters the ocean and using less plastic. Instead of plastic, use reusable or biodegradable utensils like this spoon made from corn starch. Try this experiment: Place this spoon and a plastic one in hot water. How long does it take for each spoon to break down (if they break down at all)?

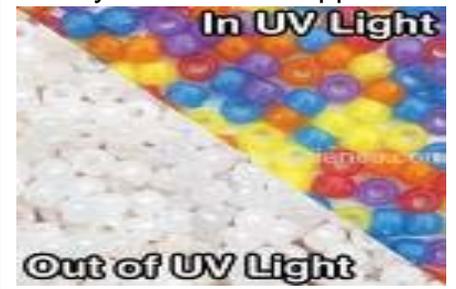
OCEANIC FOOD WEBS

Phytoplankton are plant-like microbes that form the base of the marine food web. They are food for tiny animals called zooplankton, which are eaten by other fish. Can you see how all of the ocean's animals depend upon phytoplankton for survival? In fact, no other life forms could survive without microbes!



UV DETECTING BEADS

Ultraviolet (UV) is invisible light that comes from the sun. Overexposure to UV can harm organisms such as corals, and us! These beads change color when exposed to UV light. When the colors change, it's time to put on sunscreen. Try coating your beads with sunscreen and exposing them to sunlight. But first, make a prediction about what you think will happen!



MARINE SCIENCE CAREERS

There are many exciting careers in marine science. Next time you are near the ocean, notice the waves, tides, and marine life. Pay attention in math and science class: this will help you better understand the ocean. For online learning, check out: www.hawaii.edu/himb & cmore.soest.hawaii.edu/education.htm

Ocean FEST Vocabulary Match Up

Match the numbered items on the left

with the descriptions on the right.

- | | |
|-------------------------|---|
| 1) Ocean FEST | a) the process plants and some microbes use to convert sunlight into energy |
| 2) Surface Tension | b) Center for Microbial Oceanography: Research and Education |
| 3) Hypothesis | c) decrease in the ocean's pH, caused by excess carbon dioxide |
| 4) HIMB | d) an educated guess about what is going to happen |
| 5) C-MORE | e) property of liquid molecules to stick together to form a dome |
| 6) Microbes | f) tiny animals called polyps which often live in a hard skeleton |
| 7) Climate Change | g) ocean-themed event where families explore science together |
| 8) Greenhouse Gases | h) this property determines whether an object will float or sink |
| 9) Density | i) increase in the Earth's average temperature |
| 10) Ocean Acidification | j) one-celled organisms that form the base of the food web |
| 11) Coral | k) Hawai'i Institute of Marine Biology |
| 12) Photosynthesis | l) gases that trap the sun's heat, like carbon dioxide |



Answers: 1)g 2)e 3)d 4)k 5)b 6)j 7)i
8)l 9)h 10)c 11)f 12)a

