Project Oceanography
Coral Reefs I:
Who, how, what, why, and where?

September 12, 1997
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Pre-broadcast Exercises

All around the world scientists study coral reefs, some investigate the biology of animals and plants living within the reef and building the framework. Others try to decipher what past conditions were like based on clues hidden in the thick piles of sediment or hard limestone produced by a reef. Many researchers are now trying to tell how healthy our coral reefs are, and attempting to understand how human activities effect the reef environment.
Over the next seven weeks you will learn about all of these fascinating topics in coral reef research. But how do scientists study coral reefs? Working underwater is much different than studying on land. On September 12th we will show you how scientists do research underwater and look at some of the tools they use. But first, try to answer the following questions (we will talk about the answers on the show).

The ocean is very different from land, it is:

WET (NO AIR)
BIG AND DEEP
COLD
DARK

On land a scientist can walk, ride in a vehicle, or fly over their location of study, it is not so easy underwater.

1) How do scientists move around efficiently under water?

2) On land, if it gets cold we put on warm clothing, most of the time it is cold when working underwater. How do scientists stay warm working underwater?

3) There is no air in the ocean, how do scientists breathe when working in the sea?

4) Light very quickly fades as you go deeper in the ocean, how do scientists see through the dark underwater?

5) As you go deeper and deeper in the ocean, there is so much water above you that the pressure (you can think of this as weight) builds. A human cannot withstand this pressure without protection because any air space within the body will be compressed (squeezed).

Submersibles and submarines which are built to go very deep in the sea are made of special thick materials which won't break at the high pressures found deep in the ocean.

What if we took a styrofoam cup (much of this material is air) and brought it down deep in the ocean, it would be compressed (squeezed). All of the air in the styrofoam would shrink. Below is the outline of a typical styrofoam cup, how big would this be after bringing it deep in the ocean (1000 m or 3500 ft)? Draw a new outline, showing what it would look like after going deep in the ocean. (hint: on the way back to the surface it does not expand, but remains "squeezed"). We will give you the answer to this interesting question on the show.

Going down!
Before being deep
in the sea

Coming up!
After being deep
in the sea