Sea Hunt

Objectives:

Students will acquire data through their senses.

Students will use logical inferences in drawing conclusions.

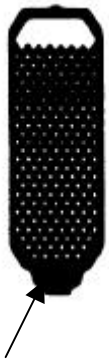
Students will operationally define density.

Materials:

25 ml plastic pipettes, 2 L clear plastic soda bottles,10/32 hex nuts, scissors

Procedure:

1. Cut the tip off the pipette about 1 cm below the bulb.
2. Carefully screw the hex nut onto the remainder of the pipette.
3. Now you have your "deep sea diver". By squeezing the bulb with the tip immersed in water, you can make the diver as heavy or light as needed.
4. Fill the soda bottle with water until nearly full. Insert the diver and fill completely full, trying to remove all the air possible. The diver should float at the top of the bottle. Replace the cap on the bottle.
5. Practice squeezing the bottle. You should be able to move the diver up and down, depending on the amount of pressure you exert on the sides of the bottle when you squeeze.



Hex Nut

Results:

1. What happens to the volume of water in the bottle when you squeeze?

2. If the mass of the water is unchanged and you diminish the volume of water, what happens to the density? (Hint: Density = Mass/Volume)

3. What would happen to a ship if it sailed into water that was less dense than that it had been sailing in?

4. What would happen if the water were denser?

5. Practice making the diver hover at some point in the water. What has happened to allow the diver to stay in this position?

6. In what situations would it be important to know the density of a liquid?