



Curiosity Guide #305

Buoyancy

Accompanies Curious Crew, Season 3, Episode 5 (#305)

Scuba Action Figure

Investigation #6

Description

Use what you know about buoyancy to create neutral buoyancy.

Materials

- Action figure or toy that will sink in water
- Balloons
- Toothpicks
- Pennies
- Paperclips
- Rubber bands
- Large container of water

Procedure

- 1) Place the action figure in the water to demonstrate that the object sinks.
- 2) Use the available materials to make the figure neutrally buoyant.
The figure should be suspended underwater without being sunk all the way to the bottom of the container.

My Results

Explanation

Water will naturally push things up due to its buoyant force, so scuba divers work to remain neutrally buoyant so that the divers' density is like the liquid that the divers displace. Sometimes this means carrying additional weights. If these weights are too heavy, the diver will sink to the bottom. Divers also wear special air vests or carry a buoyancy compensator that can be adjusted to release or add air to change the divers' buoyancy.

Investigate further: Search the internet or find an illustrated book of the sea to find pictures of fish, sharks, rays, urchins and starfish. Think about where the sea creatures "hang out" and consider the following about buoyancy.

Scuba divers must go to a lot of trouble to stay underwater without sinking or to remain neutrally buoyant. Have you ever wondered how fish can do that? Many fish have a special organ, called a swim bladder, which regulates how much air is in the fish to help the fish stay buoyant. Creatures like sharks and rays don't have such an organ, so they have to control their depth by swimming or storing up fats to maintain buoyancy. Urchins and starfish, don't do either of these things, so they are found on the ocean bottom. The wonders of buoyancy!

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