

Fish

Investigation Data Sheet



Fish Swim Bladders

Have you ever wondered how fish are able to swim at different depths without constantly working their fins to keep from sinking? Bony fish have gas-filled chambers, or swim bladders, that allow them to stay at various depths easily. The swim bladders give these fish just the right amount of flotation, or buoyancy. This is because water has weight to it. The more water there is above an object under the surface, the greater the water pressure all around it. This pressure can compress the swim bladder, changing the fish's ability to float.

Objective

Build an apparatus to investigate how a swim bladder functions.

Materials

- a medicine dropper
- a 2-liter plastic soft-drink bottle with a cap
- water

Safety Notice: All applicable laboratory safety rules must be followed. Students should not perform any experimental activity without the teacher's supervision and express permission. Students must follow safety guidelines and wear appropriate protective gear.

Procedure

1. Fill the bottle up to the very top with water. Then, fill up the medicine dropper part-way with water and place it into the bottle of water.
2. Screw the cap on tight enough so that when you squeeze the bottle no water or air leaks out. When you squeeze the bottle, you are simulating the water pressure experienced by bony fish at deeper depths. The medicine dropper simulates the fish and its swim bladder. What happens to the medicine dropper when you squeeze the bottle? Sketch what happens and write your observations in the space below.

What happens when you release the pressure on the bottle? Sketch what happens and write your observations in the space below.

Conclusions

- How is this apparatus like the swim bladder of a fish?

- Use information gathered during this investigation to explain how a fish rises to the surface and then swims back down to the ocean floor.
