

Condiment Diver

Mair Bladders in Fish

What you need!

- Condiment packet of soy sauce or ketchup
- Clear plastic bottle with tight-fitting lid
- Water

Most fish have a gas-filled organ in their bodies known as an air bladder. This organ allows fishes to control their buoyancy. Try this activity to find out how fish use their air bladders to rise and fall in the water.

What you do:

1. Choose which condiment packet to use by placing several of them in water. Use the one that floats the best.
2. Fill the bottle with water leaving a little air space.
3. Put the unopened packet into the bottle and screw on the cap really tight.
4. Squeeze the bottle and watch what happens.



Ask yourself

- Why do you think the packet floats?
- What happens to the packet when the bottle is squeezed?
- What is affecting the buoyancy of the packet?
- How might fish use this technique to become more or less buoyant?

What did you find out?

Most of the sauces in condiment packages are heavier than water and would sink if not for the little pocket of air that is also trapped in the package. Squeezing the bottle increases the pressure in the bottle and compresses the air pocket in the condiment package. Because the air bubble is smaller, the package dives below the water surface.

Most fish have what is called an air bladder. This organ is filled with a gas that helps the fish to control their buoyancy. The fish can change the pressure in the air bladder to move higher or lower in the water. By tightening or loosening the muscles around the air bladder a fish can control its buoyancy just as easily as you can control the buoyancy of the condiment diver.

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Specific Learner Expectations (SLE)

Grade 2 Topic B: Buoyancy and Boats.

SLE 1: Describe, classify and order materials on the basis of their buoyancy. Students will distinguish between materials that will sink in water and those that will float. They will also be aware that some floaters sit mostly above water and others sit mostly below the water. The terms buoyancy and density may be introduced but are not required.