

Experiment 1 Cartesian Diver



WHAT YOU NEED

- Clear 2-liter plastic soda bottle
- Large water glass
- Medicine dropper

PROCEDURE

1. Fill the empty soda bottle with water.
2. Fill the glass with water.
3. Put the dropper in the glass and squeeze the rubber bulb of the dropper. Get enough water in it to make it float upright.
4. Place the dropper in the bottle and screw the cap on.
5. Softly squeeze the sides of the bottle. As you squeeze, the dropper will sink to the bottom. When you stop squeezing, it will return to the top.

WHY THIS HAPPENS

This experiment is an example of the property of buoyancy. This is determined by the amount of water an object pushes around itself. There is some air in the medicine dropper bulb that pushes away the water around it. When pressure on the outside of the large bottle is applied, the size of the air bubble in the dropper is smaller, so the amount of water displaced decreases. The dropper is like a tiny submarine. Submarines pump water in and out of large tanks — creating bigger and smaller bubbles like the medicine dropper — so that they can rise and sink underwater.

Word-Ladder:

From the fish to the lost —
Jonah was spit up by the
fish so he could go preach to
the spiritually lost people of
Nineveh. In this word ladder,
change the word FISH to LOST
by changing one letter in each
step to make a new word.

FISH

FI _ _ — clench your hand to make this

F _ _ T — opposite of slow

_ _ ST — Revelation is this book in the Bible

LOST

Underwater Adventure

by Christina Quick

Imagine what it would be like to swim under the sea. You can be sure you'd have plenty of company down there. The underwater world is filled with life. Clownfish, dolphins, eels, stingrays, turtles and sharks are just a few of the amazing ocean creatures God created. Scuba divers sometimes get to see these animals up close.

A scuba diver is someone who swims underwater while breathing air from a portable tank. Fish have gills that help them take in air from the water. Many other sea creatures can hold their breath a very long time. Since humans cannot do these things, divers use scuba gear or travel in submarines.

The Bible tells a true story of a man

named Jonah who went down into the ocean without scuba gear. (See Jonah 1-3.)

God told Jonah to preach in a place called Nineveh. But Jonah disobeyed. He got on a ship and went in the other direction. Then God sent a big storm. The people on the ship were scared. When they found out Jonah had disobeyed God, they threw him overboard!

Jonah sank into the water. He would have drowned. But God had prepared a big fish to swallow Jonah. Jonah stayed alive in the fish just like in a submarine. Inside the fish, Jonah prayed. He told God he was sorry for disobeying. God forgave Jonah for his sins. After three days, the fish spat

out Jonah on the beach. This time, Jonah went to Nineveh and preached, just as God had commanded.

The people in Nineveh needed a preacher because they had sinned, too. Like Jonah, they prayed and received God's forgiveness.

The Bible teaches that everyone has sinned and disobeyed God's commands. Jesus died on the cross so that we can be forgiven. If you haven't asked Jesus to forgive your sins and live in your heart, why not do it right now?

"If we confess our sins, he is faithful and just and will forgive us our sins and purify us from all unrighteousness" (1 John 1:9, NIV). **e**

E-mail your comments to pe@ag.org.