



How Do Fish Breathe?



INTRODUCTION

What is the difference between the way fish and humans breathe?

Have children put one hand on their chest and one on their stomach and ask them to take a slow, deep breath in through their nose. Ask: *"Did you feel your chest and stomach move up?"* Then ask them to do it again and to breathe out slowly through their mouths. Ask: *"Did you feel your chest and stomach go back down?"*

Explain to children that human bodies need oxygen and they pull that from the air using two special body parts inside our chest called lungs. When we breathe in, our lungs fill up with air like a balloon, and grab the oxygen our body needs. The oxygen is in the air all around us, but is way too small to see. When we breathe out, our lungs push the air back out — that's why you can feel your chest go up and down.

Ask children if they think that fish breathe the same way that humans do. Ask them to guess how fish breathe underwater. Do they open their mouths or inhale through their nose?

Tell the children that animals that live underwater need oxygen, too! But fish don't have lungs so they need to use another way to get their oxygen. Just like the air, water is full of oxygen, so fish can get their oxygen from the water they live in. Instead of lungs, most underwater creatures have a body part called **gills** that allow them to pull the oxygen straight from the water. Show children a diagram of a fish (page 3) and point out the parts of the fish body, like the eye, mouth, different fins and gills. Tell them that fish breathe underwater using body parts called **gills**! Instead of breathing air like we do with our lungs, fish take in water through their mouths and the water passes over their gills, which pull the oxygen out of it. It's like the gills are tiny strainers that pull out all the good air the fish needs to stay alive! Some fish have to keep swimming for the water to flow through their gills and others can swallow water and push it through on their own.



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ACTIVITY

You can demonstrate this fish filter system with a small experiment that can help them visualize the way the gills filter the oxygen.

Materials:

- Two clear glasses, cups or jars (fill one half way with water)
- Rubber band
- Paper towel or coffee filter
- One scoop of dirt or coffee grounds
- Measuring cup filled with water

What to Do:

1. Tell children that they will pretend that the dirt or coffee grounds is oxygen. Sprinkle a small amount into one glass of water. Tell them, "Now we can see the oxygen!" (Remind them that oxygen is a gas, so in real life we can't see it in the air or water.)
2. Take the second glass of clean water and place a coffee filter or paper towel over the top. Secure it with a rubber band and carefully push it down a little so it dips inside. Tell children that the paper towel or filter acts just like the fish gills.
3. Slowly pour the "oxygen" water (with dirt or coffee grounds) over the filter.
4. Ask children to observe what happens. They will see that most of the dirt or coffee grounds stays on the filter.
5. Explain: "This is similar to how fish breathe! Their gills help them take oxygen out of the water so they can live underwater."

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HANDOUT: FISH DIAGRAM

Parts of a fish

