HOW DO
SHARKS STAY AFLOAT?

IDEAS FOR SUPPLIES

- bucket or sink (with a plug)
- water
- 2 small water bottles or Ziploc bags
- vegetable oil
- science journal

Most fish have a swim bladder, which is an organ filled with gases, including oxygen. Fish use the bladder to control their buoyancy. Like a balloon filled with helium in the air, the swim bladder helps fish stay afloat or descend deeper into the water. When they want to rise, fish fill the bladder. When they want to descend, they expel the gas.

Sharks don't have a swim bladder! How do they stay afloat? The oil in their liver helps make them buoyant. Another factor helping sharks stay afloat is the fact they have cartilage, not bones. Cartilage is lighter than bone. Plus, their fins and tails keep sharks moving constantly. Make a model to observe how sharks float.

- **Fill the bucket or sink with water.**
- **Fill one water bottle with oil and one with water, so each bottle has the same amount of liquid in it.** Tighten the lids on the bottles. The bottles represent sharks.
- **Make a prediction—will the bottles sink or float?** Write your hypothesis in your science journal.
- **Place the bottle with water in the bucket or sink.** Does it stay afloat or sink?
- **Place the bottle with oil in the bucket or sink.** Does it stay afloat or sink?
- **Based on this experiment, which is more dense, oil or water?**

Try This

Try filling your "shark" water bottle with different kinds of oil. Fill to the same level every time and place in the bucket or sink. Does the type of oil affect the buoyancy? You can also redo the experiment and fill the sink or bucket with liquids other than water. How does the type of liquid affect the buoyancy of your shark? Why do you think this is?

WORDS TO KNOW

buoyancy: inclined to stay afloat.

dense: how tightly the matter in an object is packed.

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