

## Fishy Physics

A GREAT LAKES AQUARIUM PROGRAM

### Synopsis

Water is heavy! Because of that, living in the water is much different from living in the air. Animals must control the delicate balance between sinking and floating in order to adjust their depth in the water. If an animal is more dense than water, it will sink (negative buoyancy). If it is less dense, it will float (positive buoyancy). If it is equally as dense as water, it neither floats nor sinks, and is 'neutrally buoyant.' Fish have a special organ to help them maintain neutral buoyancy in the water—a swim bladder. The swim bladder is a sack in the fish's body which fills up or deflates with air to help a fish maintain neutral buoyancy so that it can travel up and down in the water.

### Online resources

**Great Lakes Aquarium—[www.glaquarium.org](http://www.glaquarium.org)**

- ⇒ Download a copy of *Lake Effects* and other lessons from the curriculum page
- ⇒ Find teaching resources from around the Great Lakes Basin
- ⇒ Contact us about free Lake Superior teaching kits available for lend

**Minnesota DNR MinnAqua program—[www.dnr.state.mn.us/minnaqua](http://www.dnr.state.mn.us/minnaqua)**

- ⇒ Find information about fish, fishing and aquatic habitat
- ⇒ Download lessons from the award winning curriculum *Fishing: Get in the Habitat!*:

*Fish families*

[http://files.dnr.state.mn.us/education\\_safety/education/minnaqua/leadersguide/chapter\\_2/2\\_3\\_fish\\_families.pdf](http://files.dnr.state.mn.us/education_safety/education/minnaqua/leadersguide/chapter_2/2_3_fish_families.pdf)

*Using a key for fish ID*

[http://files.dnr.state.mn.us/education\\_safety/education/minnaqua/leadersguide/chapter\\_2/2\\_4\\_using\\_a\\_key\\_for\\_fish\\_id.pdf](http://files.dnr.state.mn.us/education_safety/education/minnaqua/leadersguide/chapter_2/2_4_using_a_key_for_fish_id.pdf)

*Diving into Diversity*

[http://files.dnr.state.mn.us/education\\_safety/education/minnaqua/leadersguide/chapter\\_2/2\\_5\\_diving\\_into\\_diversity.pdf](http://files.dnr.state.mn.us/education_safety/education/minnaqua/leadersguide/chapter_2/2_5_diving_into_diversity.pdf)

### Vocabulary

Density

Buoyancy

Buoyant Force

Positive Buoyancy

Negative Buoyancy

Neutral Buoyancy

Swim Bladder

