



## Styrofoam<sup>®</sup> Life-Preserver

### Getting Ready

You have to wear flotation equipment if you're near the water? How do they work?

### Stuff to Make it Happen (Materials)

10 small washers      large and small Styrofoam<sup>®</sup> balls      pencil\*  
6" bare wire      water\*      large clear container\*      paper\*

### Making it Happen *(Be careful with sharp wires, don't spill water!)*

1. Fill your container nearly full of water.
2. Drop a washer gently into the water. That's so surprise. Retrieve the washer.
3. Put the small Styrofoam<sup>®</sup> ball in the water. It floats! Poke the wire through the small Styrofoam<sup>®</sup> sphere so about 3" or so sticks out. Bend this to look like a fish hook. Bend the other end of the wire down against the ball.
4. Hang a washer on the "fish hook" end of the bare wire. Notice how the steel washer can now float-with just a little help from its Styrofoam<sup>®</sup> friend!
5. Keep hanging washers one at a time on the "fish hook" until the Styrofoam<sup>®</sup> ball can't keep the washers from sinking. Record how many washers it held up before sinking!
6. Repeat the activity with the larger Styrofoam<sup>®</sup> ball. How many washers did it float?

### Understanding the Science

A life-preserver saves your life should you leave your boat on purpose, or accidentally, by **Buoyancy**. (A fancy name for floatability! By the way, *Buoyancy* works equally well for girls!) **Gravity** wants to **Pull** you down, it did this to the washer. The Styrofoam<sup>®</sup> ball **Displaces** or replaces a lot of water since it's filled mostly with **Air**. The very low **Density** (how "thick" the **Matter** is) of the air trapped inside and the displaced water helps the ball float! With the washers attached, it's like a miniature life preserver. The buoyancy is the "up" **Force** and the **Weight** is the "down" force! As long as the "up" force is greater, the life preserver works. When you added too much weight, the "down" force wins! You drown!

### Let's Check the View!

#### (Questions and Assessments)

1. Cork used to be used in life-preservers. Why was this material so useful?
2. Would the Styrofoam<sup>®</sup> work as well if you smashed it flat before using it? Why?

