

BOAT: 1. Cut the cork in half lengthwise. (This is a good job for a grown-up!)

2. Press the toothpick into the cork to be a mast, as shown.

CONTAINER: You have some choices here. You can use a 2 liter soda bottle and remove the top, or a home aquarium, a bucket, a large flower vase, your tub, a pond, or even a pool. A clear container is good because you can see what is happening below the surface.

Operation:

Make surface waves by bobbing your fingers or a flat spoon up and down on the water's surface.

Watch the two masts move. What do you observe? Which ship would you rather be on? Surface waves don't affect the largest portion of FLIP down deep, so FLIP doesn't rock like a cork!

Understanding Your Results:

Science Lessons: Try floating FLIP in different liquids like salt water, vinegar, or vegetable oil.

Is the waterline mark above or below the surface? What would happen if FLIP drifted from the salt water of the ocean into the fresh water of a river flowing to the ocean?

Engineering Lessons: There are many kinds of models. Because your model is smaller than the real FLIP, it is a scale model. Because it behaves in the same way, it is a working model. A computer simulation is an animation based on rules given a computer. Check out the FLIP computer simulation on the SIO Web page. How does it compare to your physical working model?

Advantages of FLIP: Scientists doing sound-in-the-sea experiments like using FLIP; it is a lot quieter than other boats because it doesn't move so much. Scientists who study surface waves use it gives an experimental platform that is not affected by what they are trying to measure.