

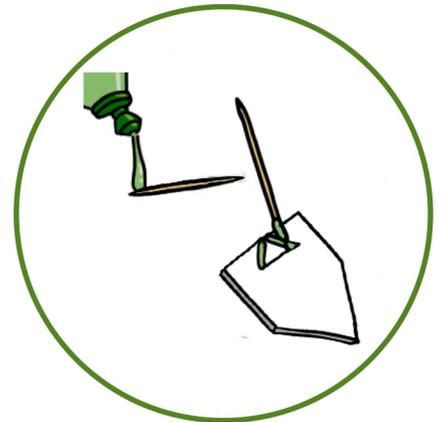
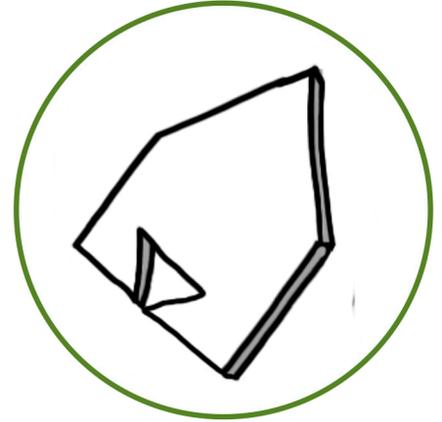
# BUILD A SOAP-POWERED MODEL BOAT!

## YOU WILL NEED:

- A foam tray (like the kind meat comes in) or a piece of non-corrugated cardboard
- A tray, bowl, or cookie sheet full of water
- Liquid dish soap
- A toothpick

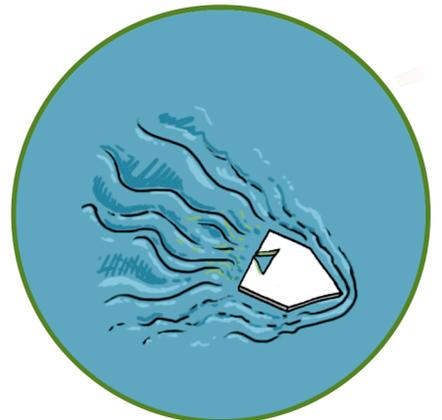
## WHAT TO DO

1. Cut the foam tray or cardboard into a boat shape as shown here. A good size seems to be about 2 inches long.
2. Dip the toothpick into the liquid soap and use the toothpick to put soap onto the sides of the notch at the back of the boat.
3. That's it! Now carefully place the boat onto the surface of the water and watch it scoot across the water for several seconds - you've made a soap-powered boat! To demonstrate the boat again, you will need to rinse out the tray to remove any soap from the previous demonstration.



## HOW DOES IT WORK?

Soap is a surfactant - that means that it breaks down the surface tension of water. As the surface tension is broken up, it creates enough of a force to push the lightweight boat across the surface.



## MAKE IT AN EXPERIMENT:

The above is a DEMONSTRATION. To make it a true experiment, you can try to answer these questions:

1. Does liquid soap last longer than a solid piece of soap?
2. Does warm water work better than cold water?
3. What materials make the best floating boat?