

# Water power

With 71 percent of the Earth's surface covered in water, it's not surprising that human beings have found many different ways to use it.

## MAKE A WATER JET

Cut off the bottom of a plastic bottle. Seal the mouth with modeling clay and push a straw through the clay into the bottle. Fit another straw to the end of the first straw to form a U-shape (Figure 1). Pierce two holes at either end of a plastic tray. Turn the bottle upside down and feed the straw tube through the holes. Seal the bottle over one of the holes using modeling clay. Place the tray in a bowl, fill the bottle with liquid and watch what happens (Figure 2).



Figure 1

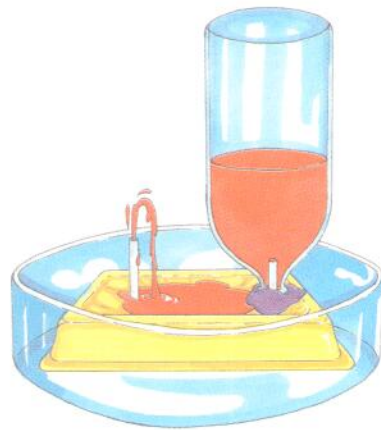


Figure 2

## WHY IT WORKS

The fountain is caused by the weight of the water in the upturned bottle. This weight causes a build-up of pressure. The more water there is in the bottle, the greater the pressure and the higher the fountain will soar.

## What a spark!

Niagara Falls is the largest producer of electric power in the world! Half of its huge amount of flowing water drives turbines to make power for the the United States and Canada.



## BOAT POWERED BY HEAT AND WATER

Punch a small hole in the lid of a lightweight metal tube that is sealed at one end, such as a cigar tube, using a hammer and small nail (Figure 1). If your tube doesn't have a lid, tightly seal the end with a cork with a small hole through it.

Half fill the tube with hot water and screw the lid on tightly.

Using modeling clay and pipe cleaners,

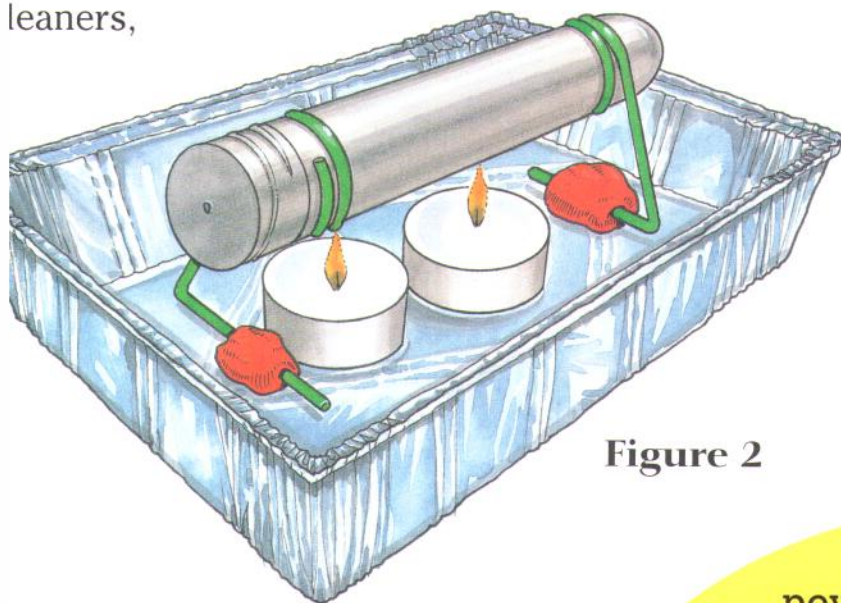


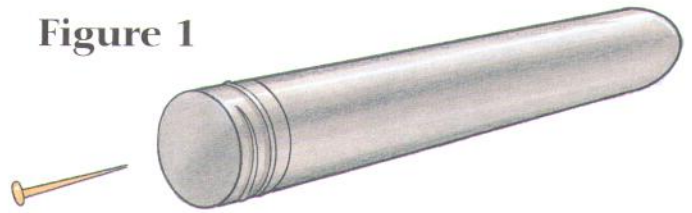
Figure 2

Attach the tube to the bottom of a foil tray (Figure 2).

Place two candles beneath the tube, as close as possible.

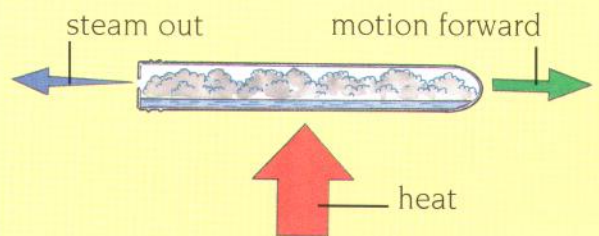
Put your "boat" in water. Now light the candles and watch what happens to your boat.

Figure 1



### WHY IT WORKS

The flame from the candles heats the water inside the tube until it begins to boil. The water then changes into steam, which takes up more space than liquid water. It escapes backward out of the small hole in the lid. This pushes the boat forward.



### Water

power, the force of moving or falling water, can be an effective way of generating electricity. In a steam engine, heat is changed to moving energy. Water is heated until it expands as steam. The force of the steam can be used to power a boat or a steam locomotive.