

# Water power

Falling water is one of the most powerful sources of energy on the planet. However, it must be harnessed in the right way. Hydroelectric dams produce almost 20 percent of the world's electricity. Water is captured in a huge reservoir and fed through a turbine to create electricity. It is mainly produced in areas with large rivers and lakes like Scandinavia and North America.



## Explore how water turns a turbine

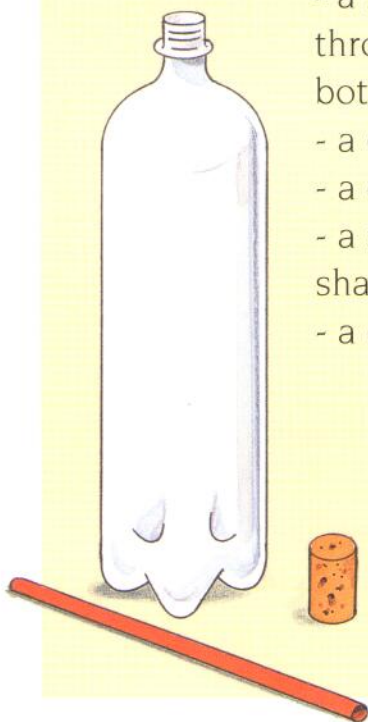


### METHOD NOTES

Make sure your waterwheel spins freely inside the bottle before you try it out.

### Materials

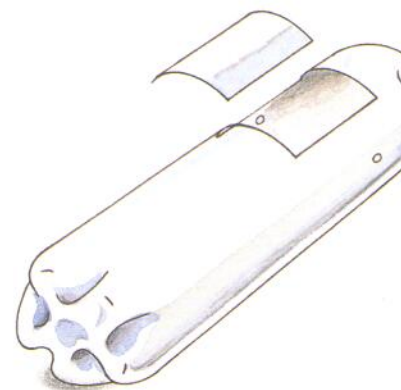
- a large see-through plastic bottle
- a cork
- a craft knife
- a skewer or a sharp pencil
- a drinking straw



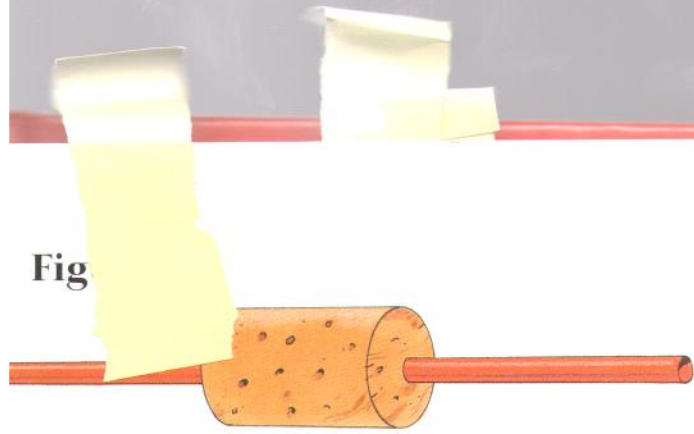
1. Carefully cut out a window from the side of the bottle with the craft knife (Figure 1). Make sure you cut it out as one complete piece (see step 4).
2. Using the point of the knife, make two holes on either side of the window, large enough to thread a straw through.



Figure 1

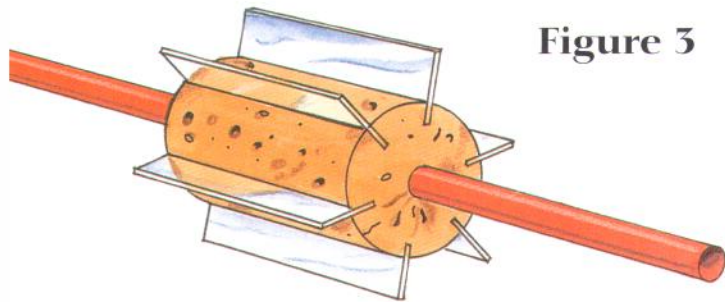


**Fig**



3. Using a skewer or a sharp pencil, make a hole all the way through the middle of a cork. Thread the straw through the cork (Figure 2).
4. Cut the plastic that you cut out of the bottle into six equal pieces. Push these into the cork at regular intervals (Figure 3).

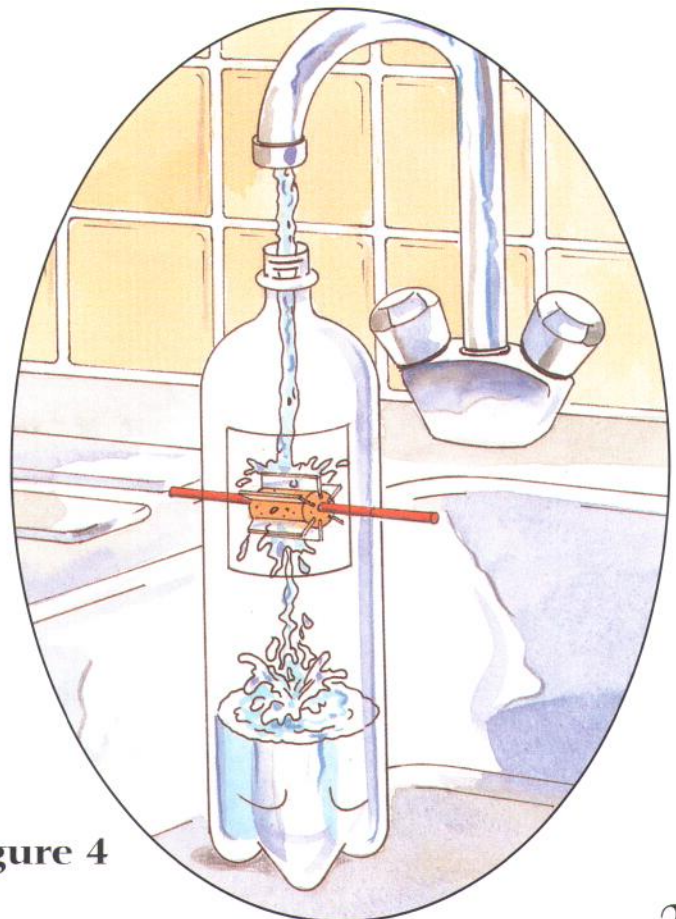
**Figure 3**



5. Thread the ends of the straw through the holes in the bottle on either side of the window.
6. Place the neck of the bottle underneath running water and watch what happens (Figure 4).

## WHY IT WORKS

The waterwheel—or turbine—spins around as the weight of the water hits the blades. As one blade is pushed down, the wheel turns and the water falls onto the next blade. As long as the water keeps flowing, the wheel will keep turning. Try running the water faster and slower. Does the waterwheel turn faster or slower? As the bottle gets full of water, empty it and start again.



**Figure 4**