

# The Drinking Bird

## Apparatus

toy drinking bird, also called the “dippy bird”

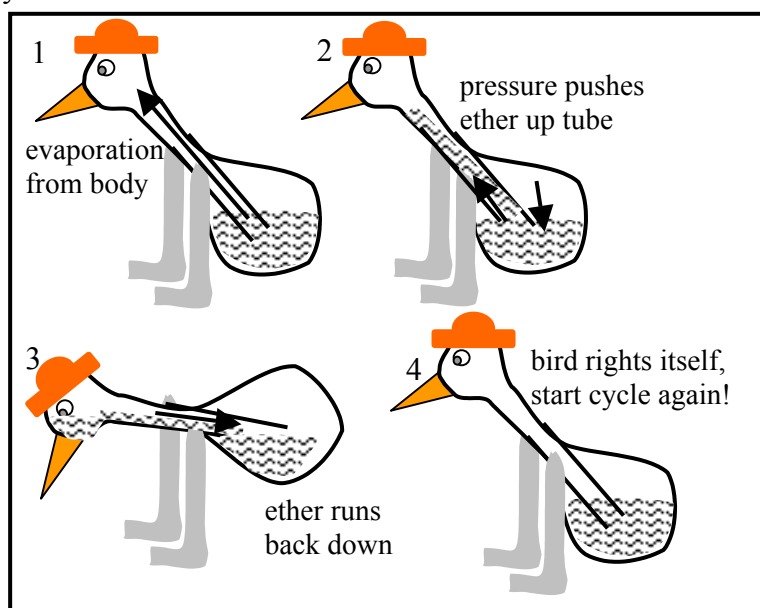
These come in several varieties – the glass ones are best so the students can see the fluid inside. They are available from some toy shops and places that sell “executive” toys.

## Action

The drinking bird is set drinking from a glass of water. The students examine the bird, and explain why it continues to dip and drink and bob up again.

## The Physics

The drinking bird works by evaporation of ether inside its body and evaporation of water outside its head. The liquid ether in its body evaporates at room temperature. As it vaporizes it creates an increased pressure inside the body, which pushes liquid ether up the tube to the head. Ether in the upper bulb (the head) is cooled by the evaporation of water on the outside of the head, and becomes a liquid, thus there is a transfer of ether from the lower (body) to the upper (head) bulb. When enough ether has collected in the head it overbalances the bird which pivots forwards. When the bird pivots forwards the ether runs back to the body, which pulls it upright again. The pivot tips the head into a glass of water, which wets the head, allowing it to cool again, and condense the evaporating ether again - repeating the cycle over and over.



## Accompanying sheet

### The Drinking Bird

The toy drinking bird has ether inside its body and a head-of-felt which soaks up water.

Liquid ether evaporates rapidly at room temperature.

Use diagrams to explain why the drinking bird behaves in the way it does.