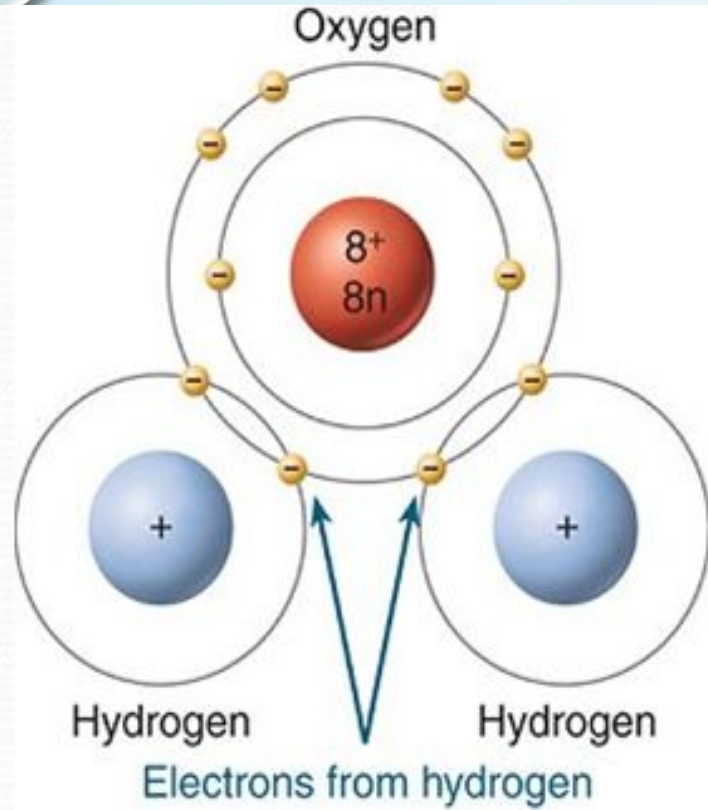


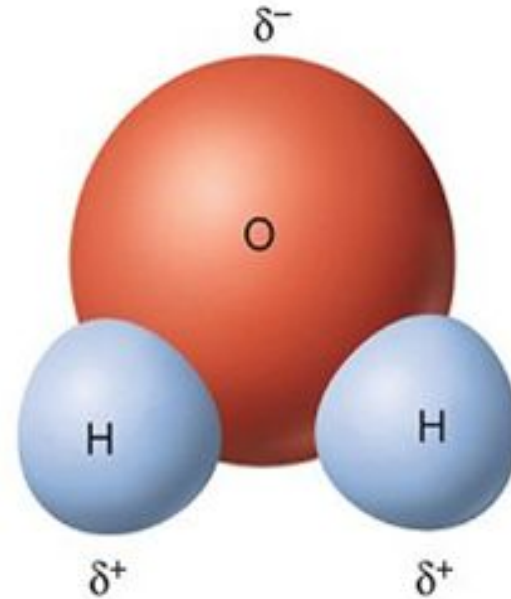
The background is a light blue gradient. In the top-left and bottom-right corners, there are several realistic water droplets of various sizes, rendered with highlights and shadows to give them a three-dimensional appearance. The title text is centered horizontally and vertically.

# **THE SCIENCE OF SIPHONING**

# WATER MOLECULE

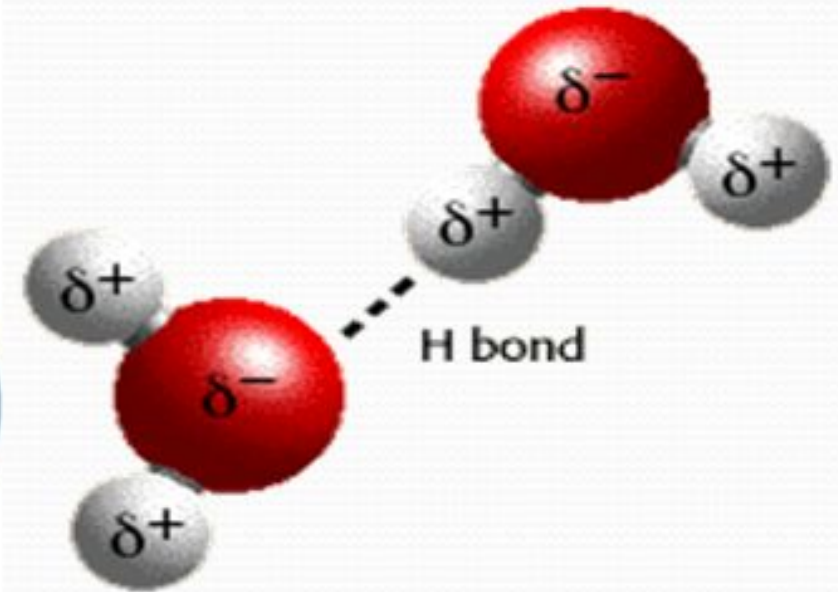


(a) Electron shells in a water molecule



(b) Distribution of partial charges in a water molecule

## Hydrogen bonding between water molecules

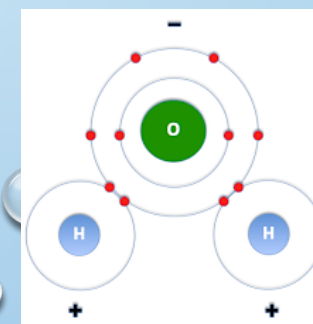
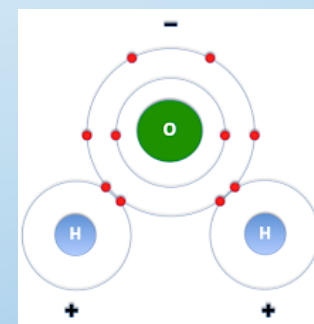
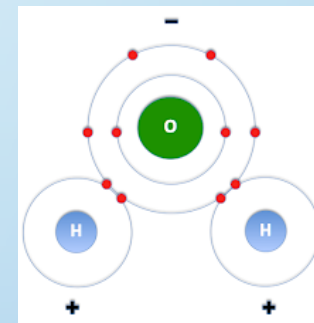
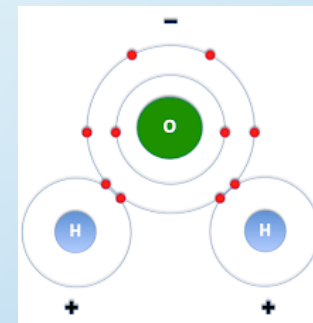
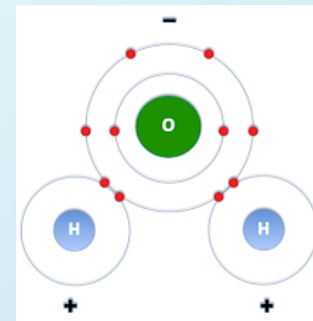
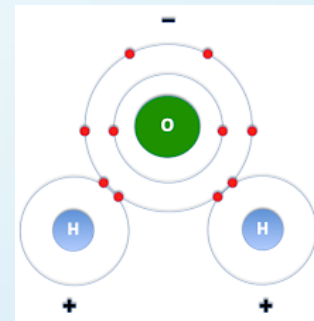
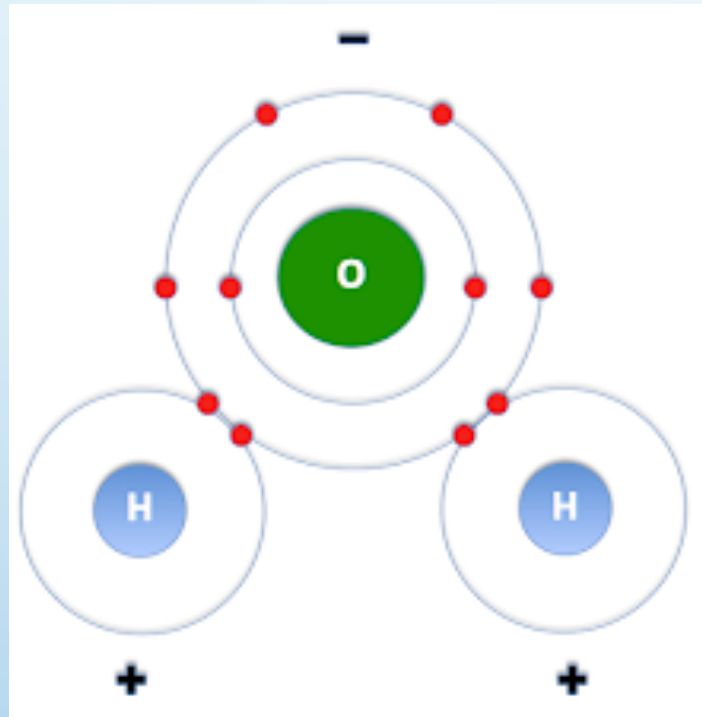
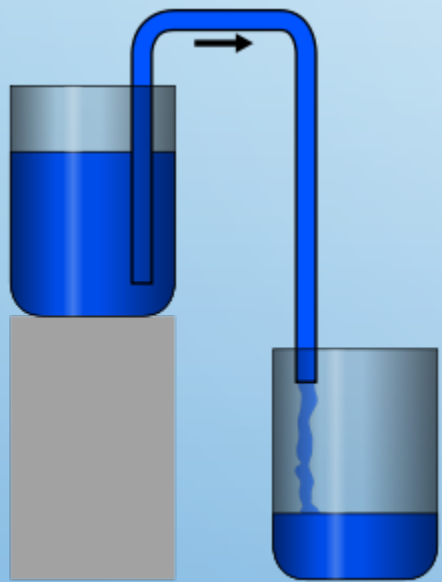


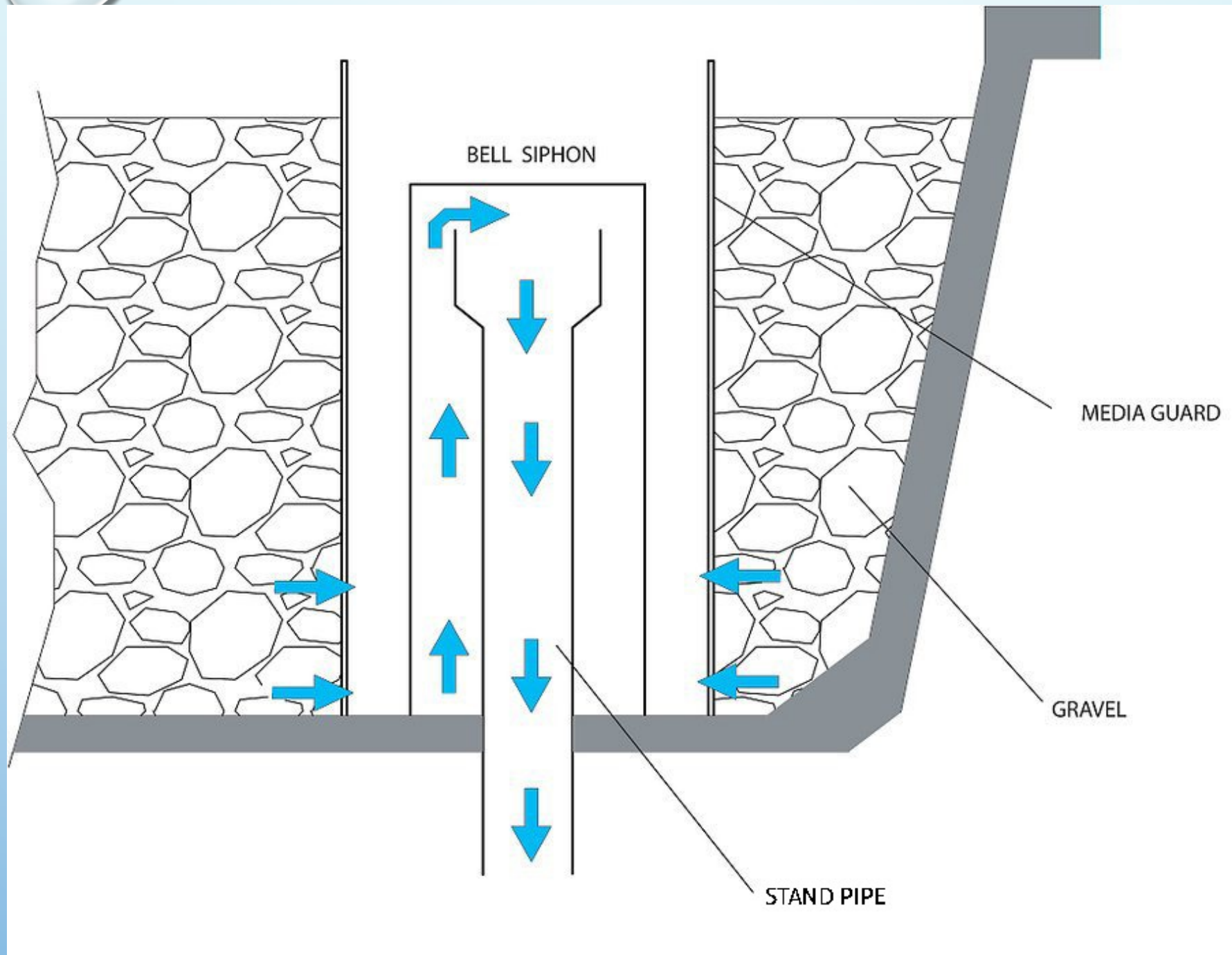
## Polar Molecule

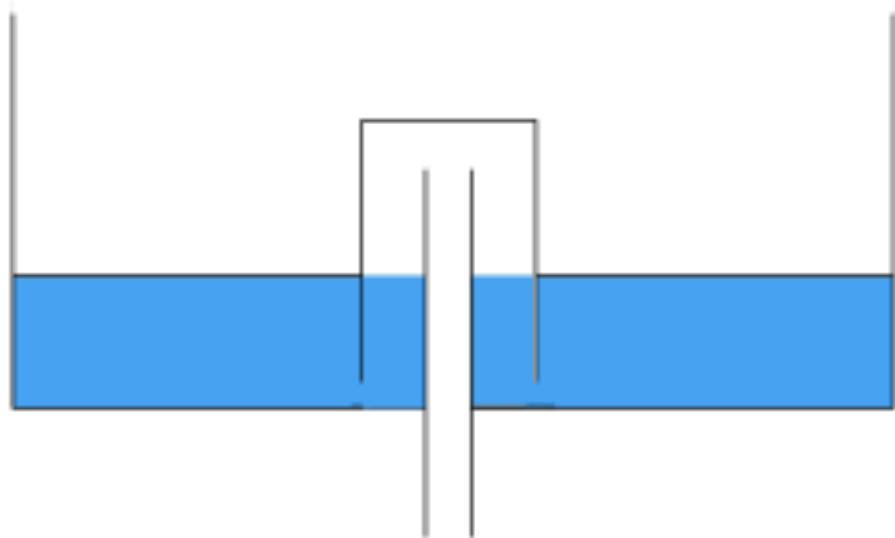
(electrons are unevenly distributed)

## Hydrogen Bonds

# WATER SIPHONING

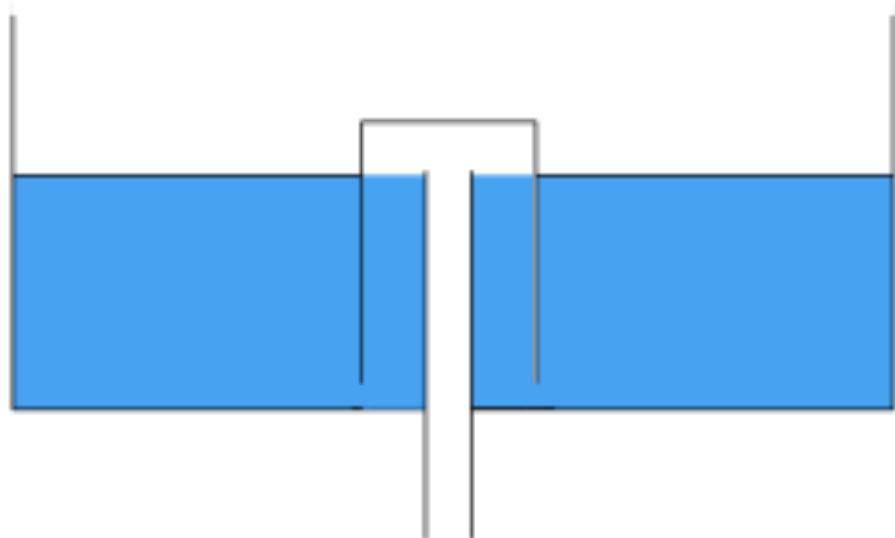






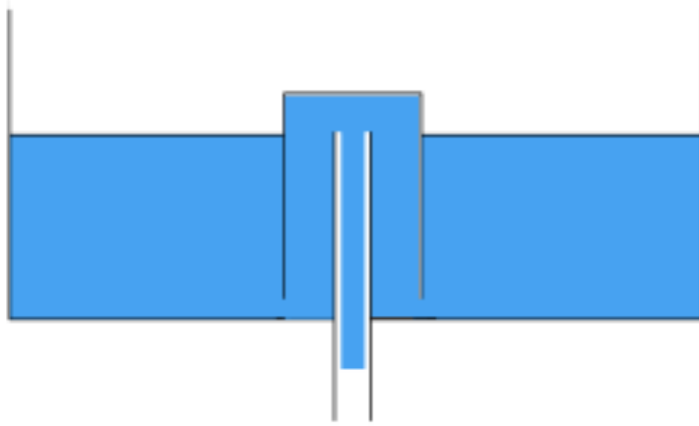
#### Step 1: Water fills Grow Bed

Water from the display tank pours into each grow bed filling it up and providing the plants nutrients.



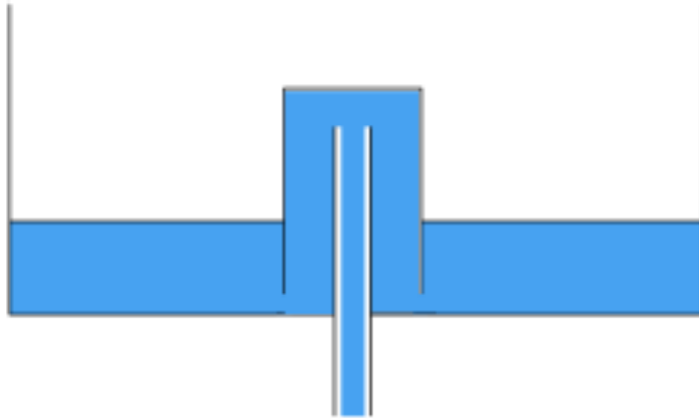
#### Step 2: Water reaches high-mark of Bell Siphon

Water begins to overflow into the drain pipe within the Bell Siphon. This draining creates a vacuum drawing the air at the top of the siphon into the drain pipe as well.



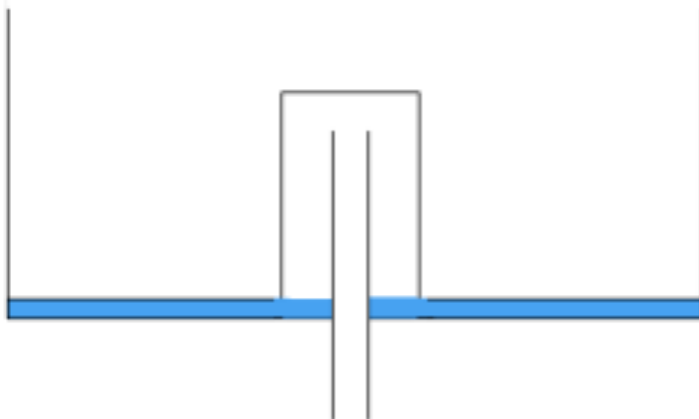
### Step 3: Siphon reaches full strength

With the air removed from the Bell Siphon, the rate of water flow down the drain dramatically increases, overtaking the rate of water flowing into the grow bed from the display tank



### Step 4: Grow Bed Begins to Drain

The Siphon drains the water faster from the grow bed than it can be replenished.



### Step 5: Siphon breaks

The siphon reaches the bottom of the grow bed and begins to suck in air instead of water. This causes the siphon to break which stops the grow bed from draining further and the cycle begins again!