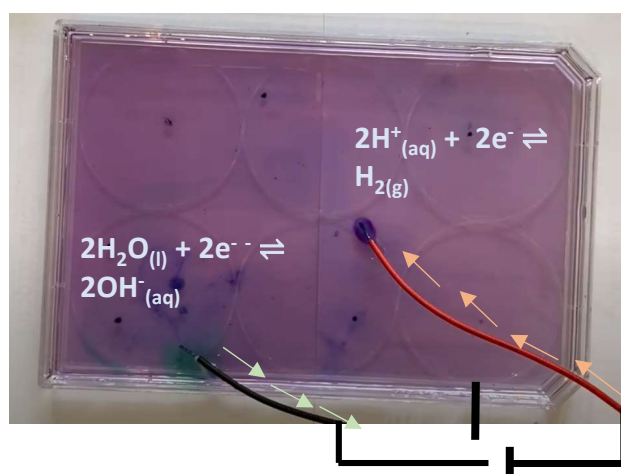


Electrolysis of water

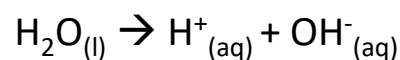
In the red cabbage indicator experiment, the indicator shows whether the solution is **ACID** or **ALKALINE**. See the video on our website under Videos and Resources, and try it yourself.



An acid has a higher concentration of **protons (H^+)** compared to pure water, an alkaline solution has a higher concentration of **hydroxide ions (OH^-)** compared to pure water. So how does a battery and these wires achieve the same thing as an **acid** or **alkali**?



Overall reaction:



Here, the battery is used to provide current, which is a stream of electrons. The electrons are reacting at the surface of the wire, which is acting as an **electrode**. The electrons are finding any protons which are around and **reducing them to hydrogen gas (remember OIL RIG)**. This reduces the concentration of H^+ compared and the indicator shows the same colours as it does in an **alkaline** solution. The opposite is true at the **anode**, where **oxidation** of H_2O takes place. Oxidation and reduction must be in balance, the electrons have to go somewhere!