Breadboards

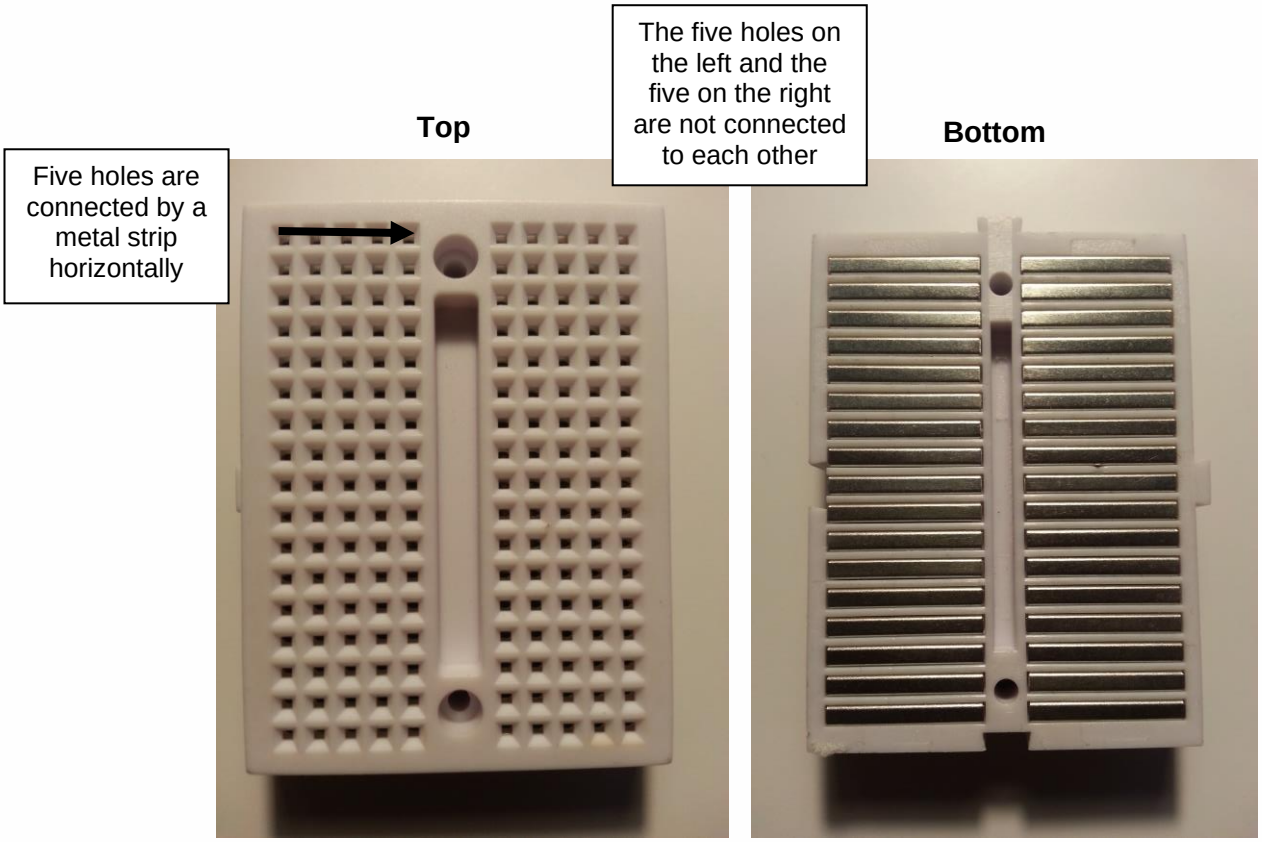
Electronic breadboards are great for making temporary circuits to test out your electric circuit designs. It is very easy to make a circuit and then to adapt it if it is not working correctly.

Prototyping means that we test out an idea by creating an initial model, this can then be developed or copied for future designs. Breadboards are great for this as if you are not sure how a circuit will work you can build it, test it and then modify it as necessary.

Some breadboards have adhesive backing that will allow you to stick them to different surfaces. This is very useful if you wish to attach your breadboard to the inside of an enclosure or case.

The breadboards you can use for your Beacon have **terminal strips**. There are horizontal rows of metal strips on the bottom of the breadboard, the picture below shows these as the adhesive backing has been removed.

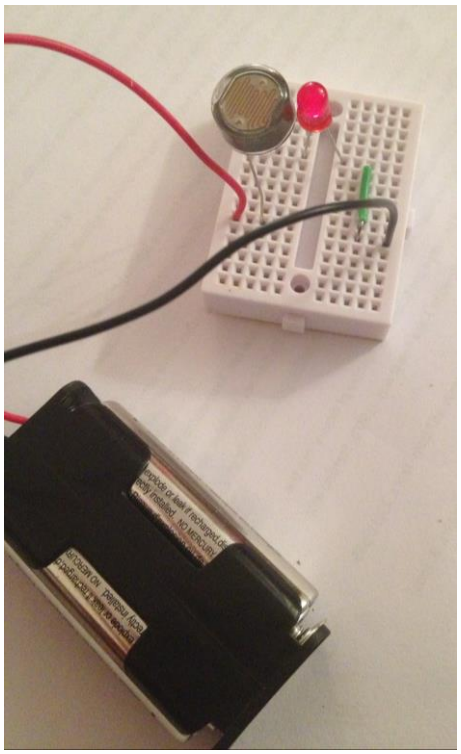
You can place the leg of a component into the hole on the top of the board and a small clip holds the leg in place against the metal strip on the bottom of the board. Once inserted that component will be electrically connected to anything else placed in that row.



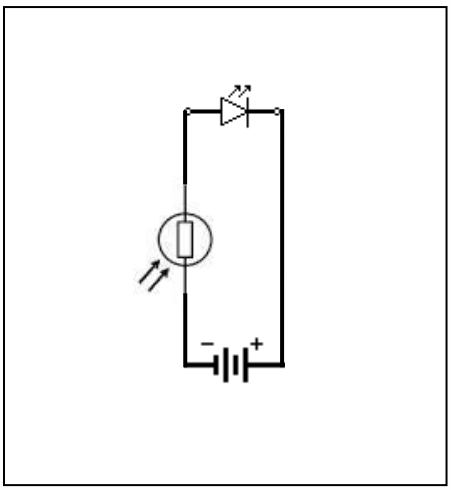
The gap in the centre of the breadboard means that the five holes on the left are not connected to the five holes on the right.

When you use components on a breadboard you need to place them so that one leg is on the left and one is on the right as shown in the picture opposite. If both legs are on the same side you can damage the component as you could create a short circuit.

To supply power to your board use the wires from your battery pack. Make sure that you are supplying electricity to the correct horizontal strip of your board. Add in different components and use the jump wires to connect different rows to make your circuit. An example circuit using and a light sensor looks like this:

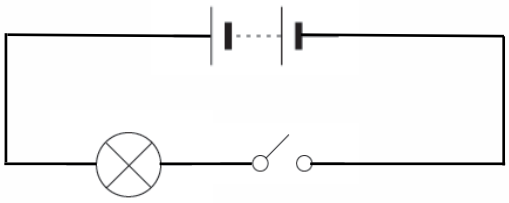


The corresponding circuit diagram

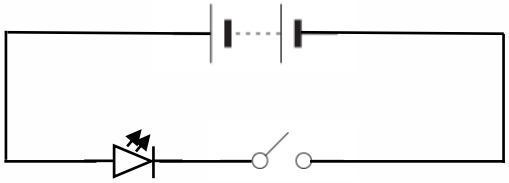


Example circuit diagrams

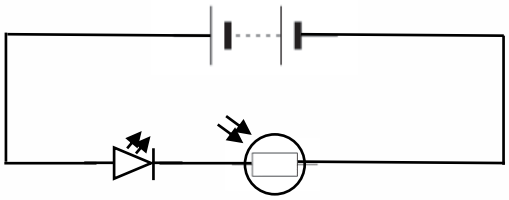
A simple series circuit containing a bulb, a battery and a switch



A simple series circuit containing an LED, a battery and a switch



A series circuit in which an LED is illuminated when it becomes dark



A series circuit in which an LED is illuminated when it is cold