**1. How many lemons does it take to light an LED?**

A lemon battery is made by pushing pieces of two different metals into a juicy lemon, and connecting them with a wire – electricity will now flow through the wire. (But we will not be wasting lemons).

**Instructions:**

1. Move the wires so that one dangling piece of metal from each wire is in the salt solution at the same time (but don’t let them touch)
2. Electricity will now flow through the wires (and the LED) from one metal to the other, but it might not be enough to make the LED glow.
3. Pick up each wire and move it along so TWO pieces of metal from each side are in the liquid. This is like having two batteries joined together, and will increase the amount of electricity flowing. But the LED might still not be getting enough power to glow…
4. Keep increasing the number of wires in the liquid one pair at a time until you see the first faint glimmer of light from the LED.

How many lemons would it take?

1. Put everything back outside the liquid, ready for the next person.

**What is happening?**

A Lemon Battery works because of the chemical properties of different metals. Some metals have a greater attraction for electrons than others.

When two different metals are placed in a salty liquid, electrons will flow from one to another (in the liquid, the electrons are carried along on particles of the dissolved salt).

 If a wire connects the pieces of metal, the electrons moving between the metals will flow through the wire, and through anything connected to it (like an LED)

If you use a lemon instead of the salty liquid, the acid in the lemon juice has particles that carry electrons too, but using salty water is less wasteful.

Troubleshooting:

If the glow fades, try jiggling the pieces of metal – this mixes the salty liquid and helps more particles bump into the pieces of metal.