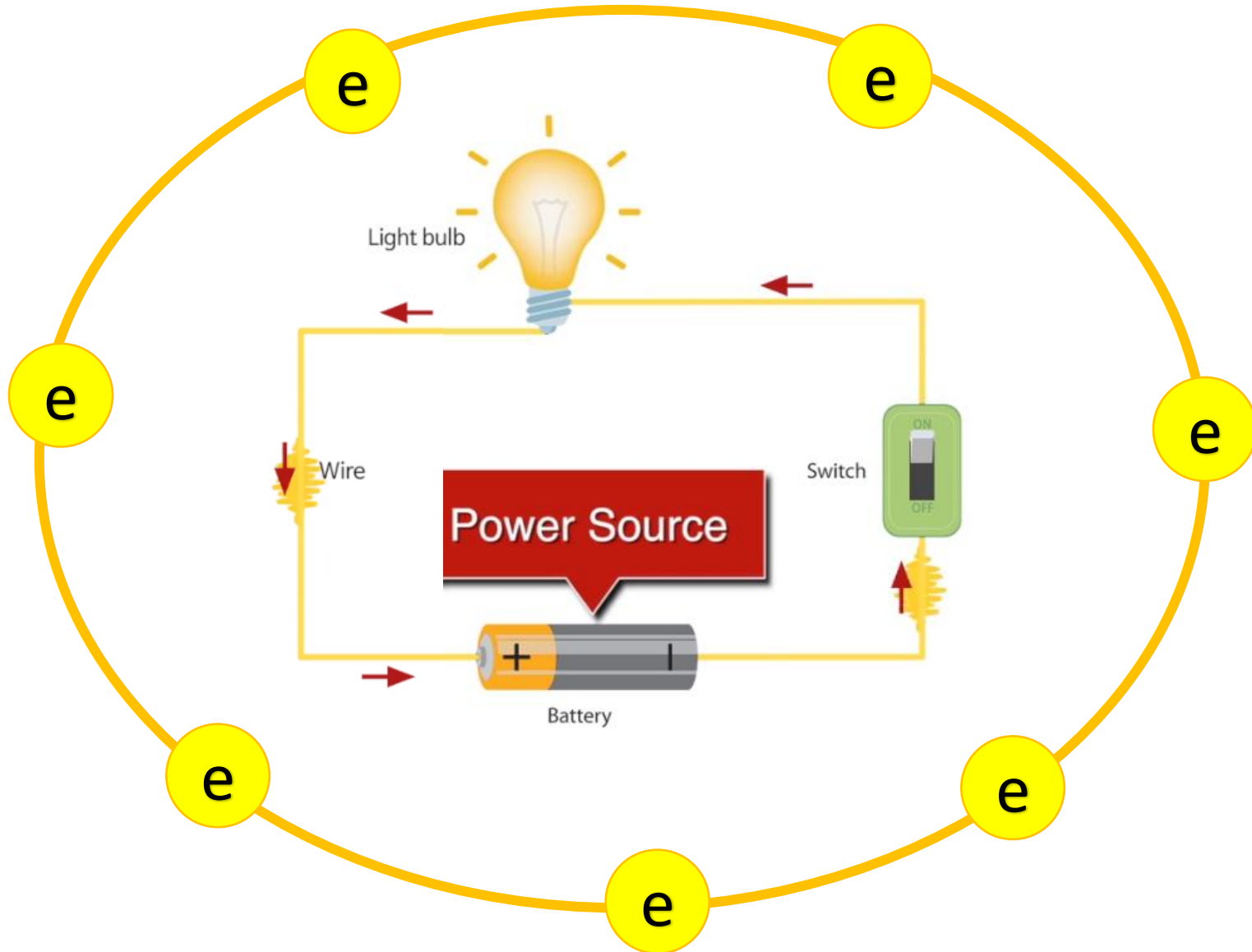


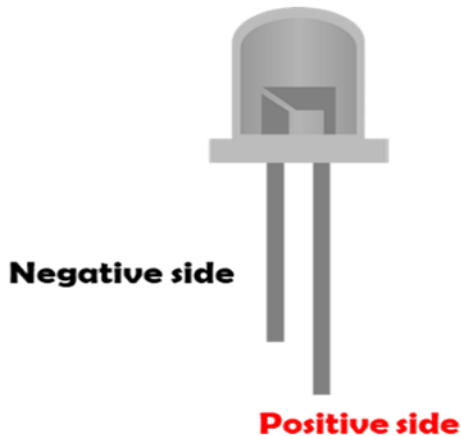
# A Circuit is a LOOP for the Electricity



# In your KITS

**LED**  
What is it?

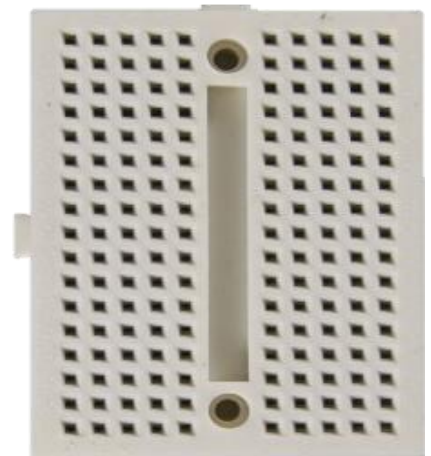
LED



**Solar Panel**  
What is it?

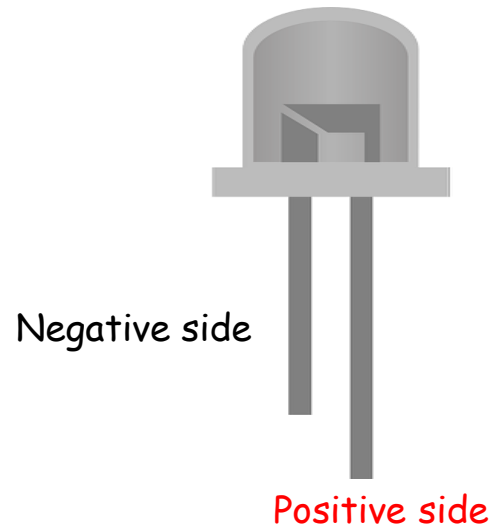


**Breadboard**  
What is it?



**How does it work?**

# Using an LED



- An LED is a light source that gets its color from the type of material inside (called a **semiconductor**).
- **An LED must always have a resistor in the circuit to control the amount of current—if not you will break the semiconductor material.**
- An LED has a positive side (longer) and negative side (shorter). Electrons can only flow in one direction through an LED.

# Using a Solar Panel



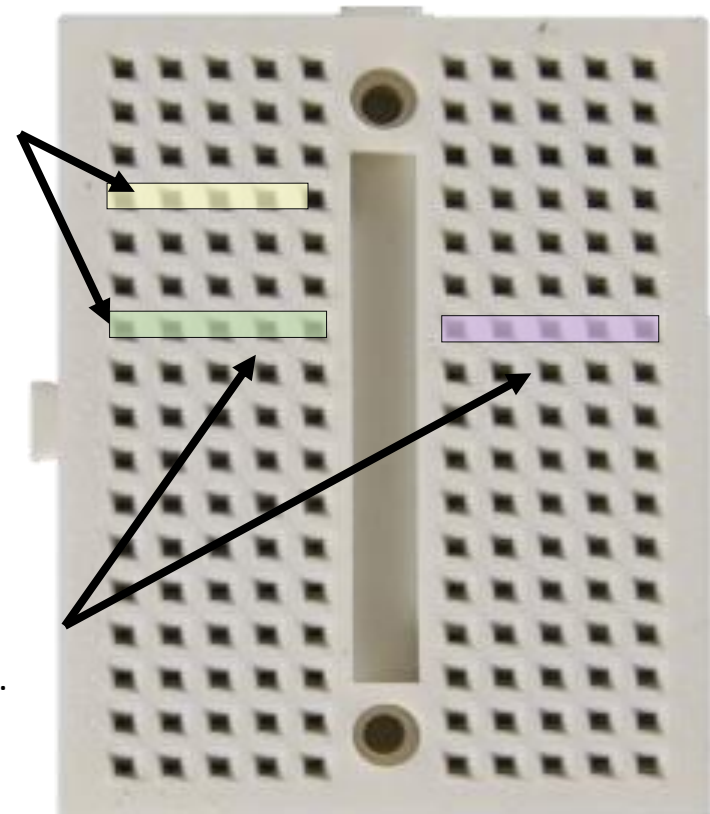
- This is what you will use to generate electricity. It acts like the battery in the circuit.
- You must make sure the wires are in the correct spot because electricity only flows one way

# Making LOOPS with a Breadboard

- All slots in row are connected on one side of the divider.
- Different rows are separate.

All the slots behind the yellow are connected to each other.  
All the slots behind the green are connected to each other.  
The slots behind the green are **NOT** connect to those behind the yellow.

All the slots behind the green are connected to each other.  
All the slots behind the purple are connected to each other.  
The slots behind the green are **NOT** connect to those behind the purple.

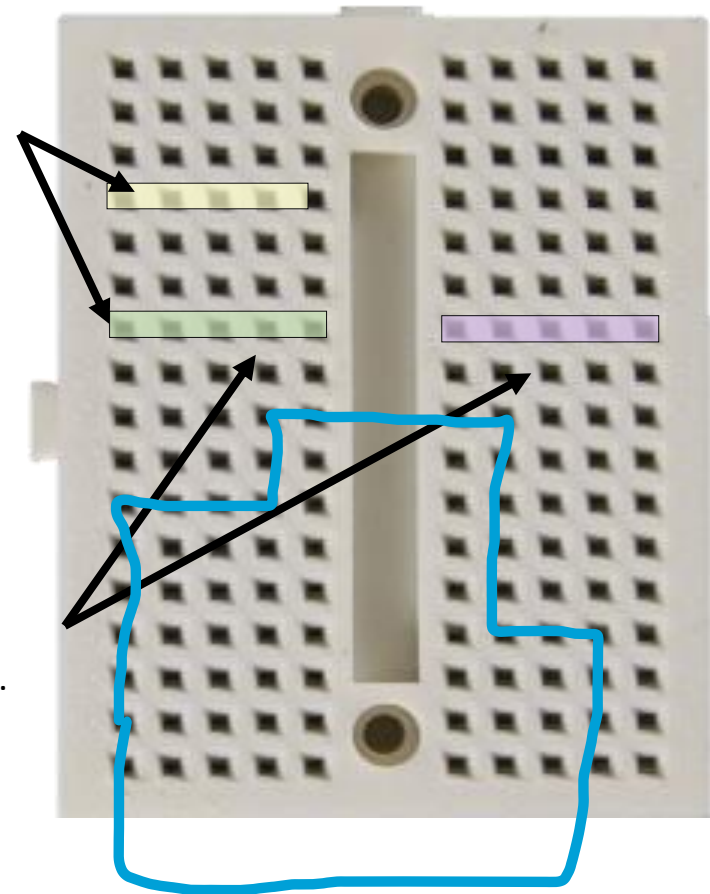


# Making LOOPS with a Breadboard

- All slots in row are connected on one side of the divider.
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All the slots behind the yellow are connected to each other.  
All the slots behind the green are connected to each other.  
The slots behind the green are **NOT** connect to those behind the yellow.

All the slots behind the green are connected to each other.  
All the slots behind the purple are connected to each other.  
The slots behind the green are **NOT** connect to those behind the purple.

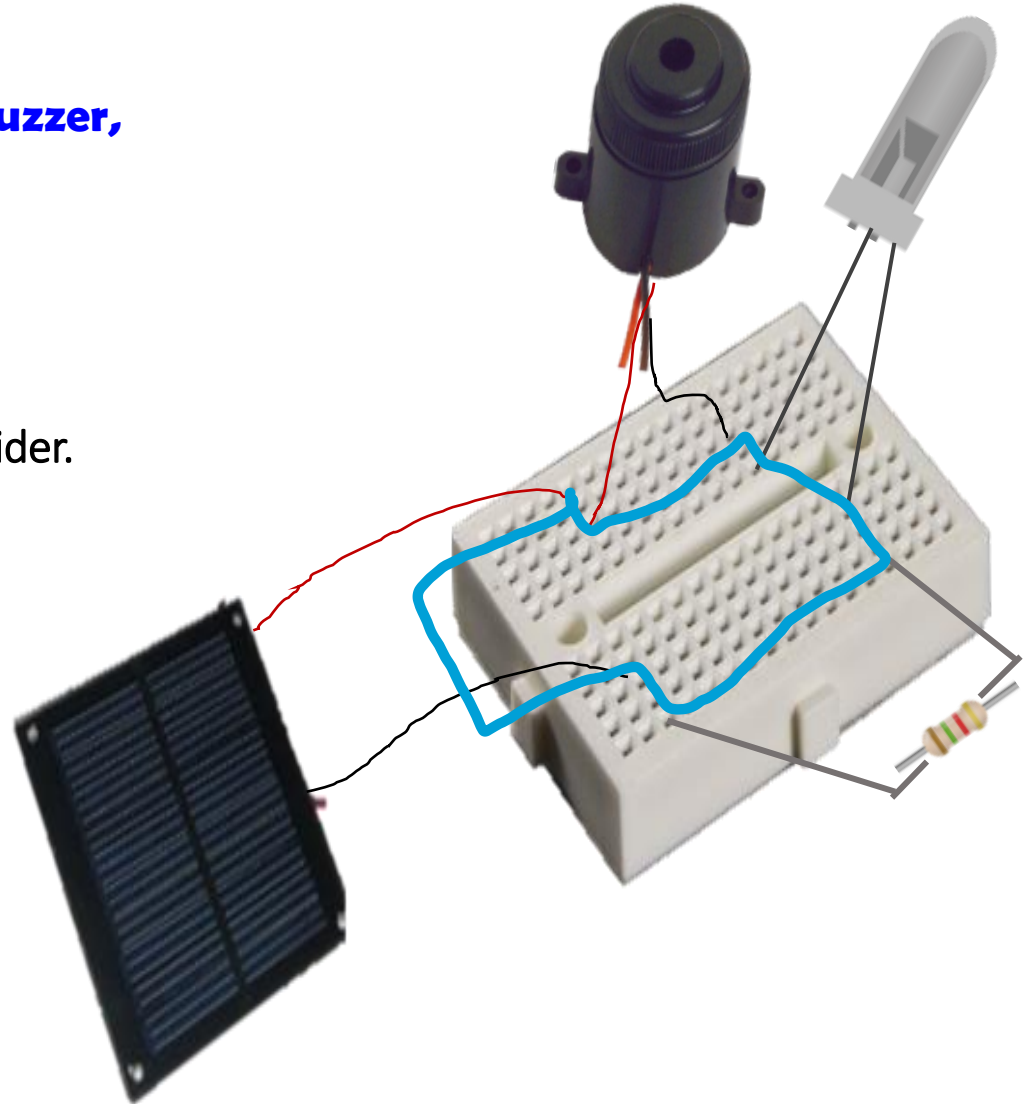


# A Basic Circuit

## You will need :

**Solar Panel, LEDs, resistor, buzzer, jumper wires, breadboard**

- All slots in a numbered row are connected on one side of the divider.
- Different rows are separate.



**Having some TROUBLE?**



**Is your circuit a loop?**

Follow the path of the electricity.

**Is everything firmly in the breadboard?**

Test for loose connections.