

Initial Exercises :

- Teach children about the following concepts:

1) current flow

2) connections

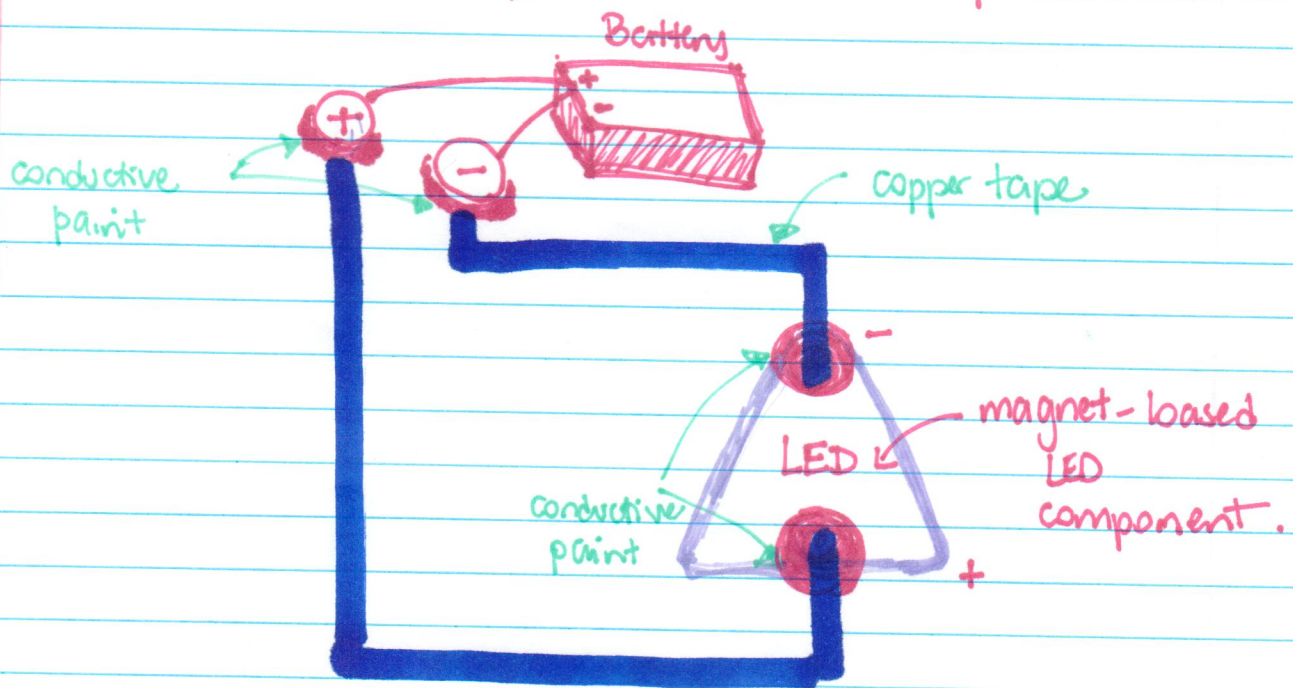
3) polarity

4) series

5) parallel

1) Exercise 1 : Understanding current flow

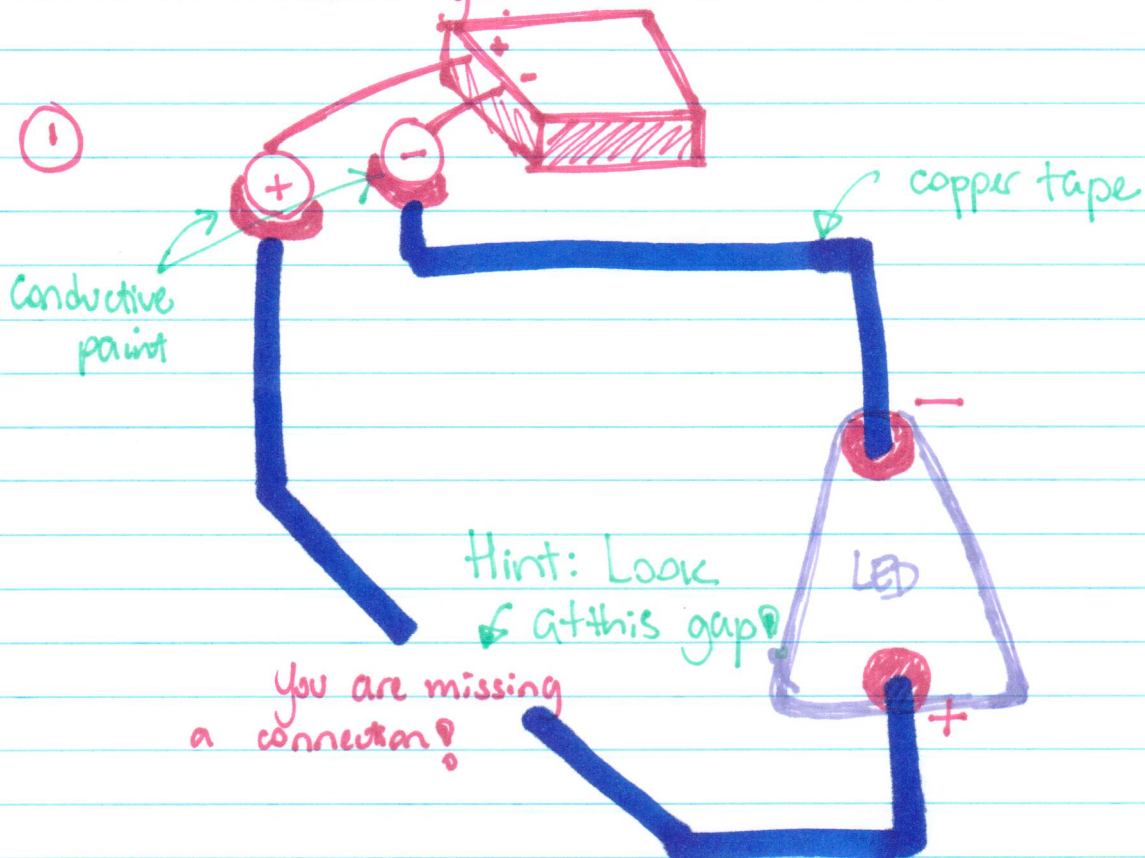
- Current flow is the circular path of electronics around a circuit.
- Understand the difference between an open and closed circuit.



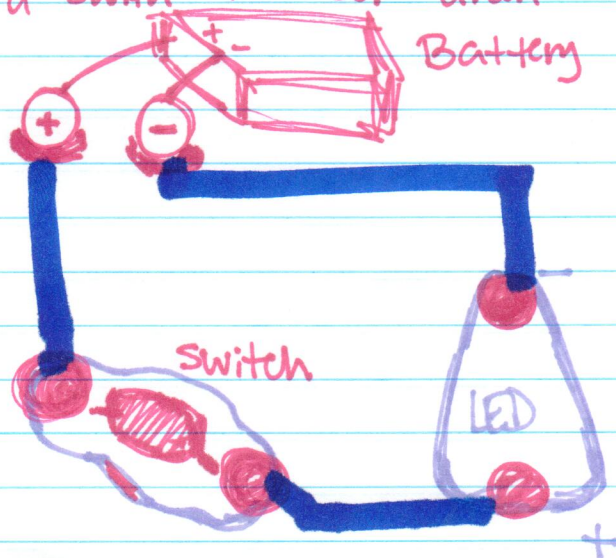
2) Exercise 2: Understanding Connections

- Understand the connections between one component and another, with emphasis on the terminal ends of conductivity.
- Learn that every component must be well connected to power the circuit.

Think back to your previous circuit. Why is this circuit not working?

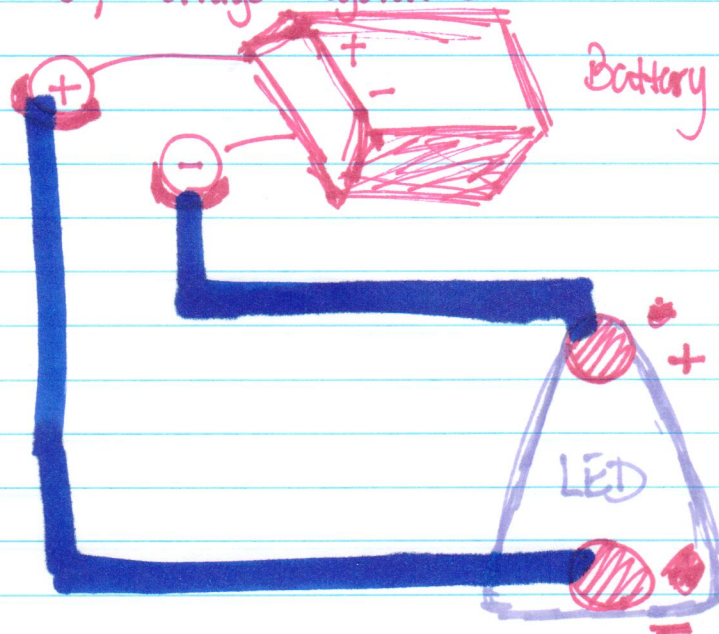


② Let's add a switch to our circuit

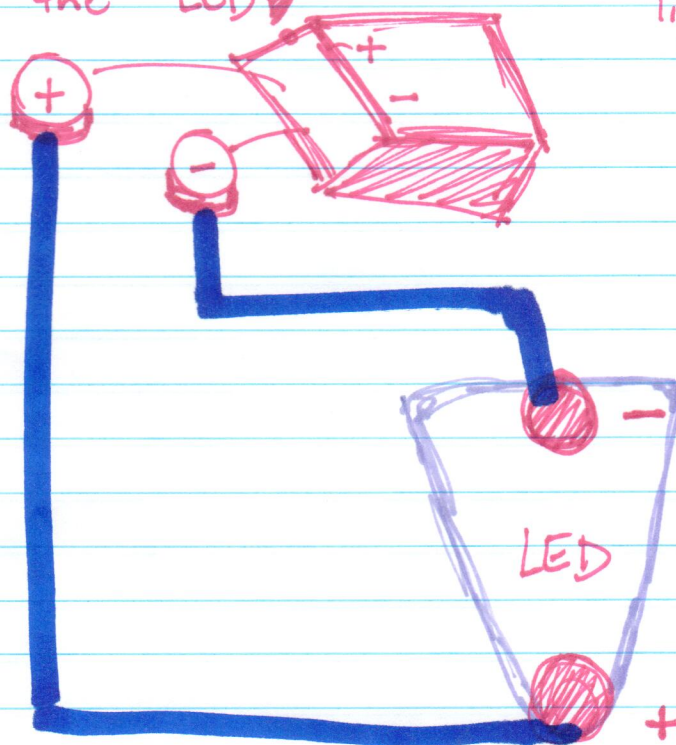


3) Exercise 3 : Understanding Polarity

- Learn to connect components in which current flows in one direction.
- Learn to read polarized components, e.g., the positive end of the LED has to be connected to the positive end of the battery.
- Other components with polarity: capacitors, batteries, power supplies, transistors, voltage regulators.



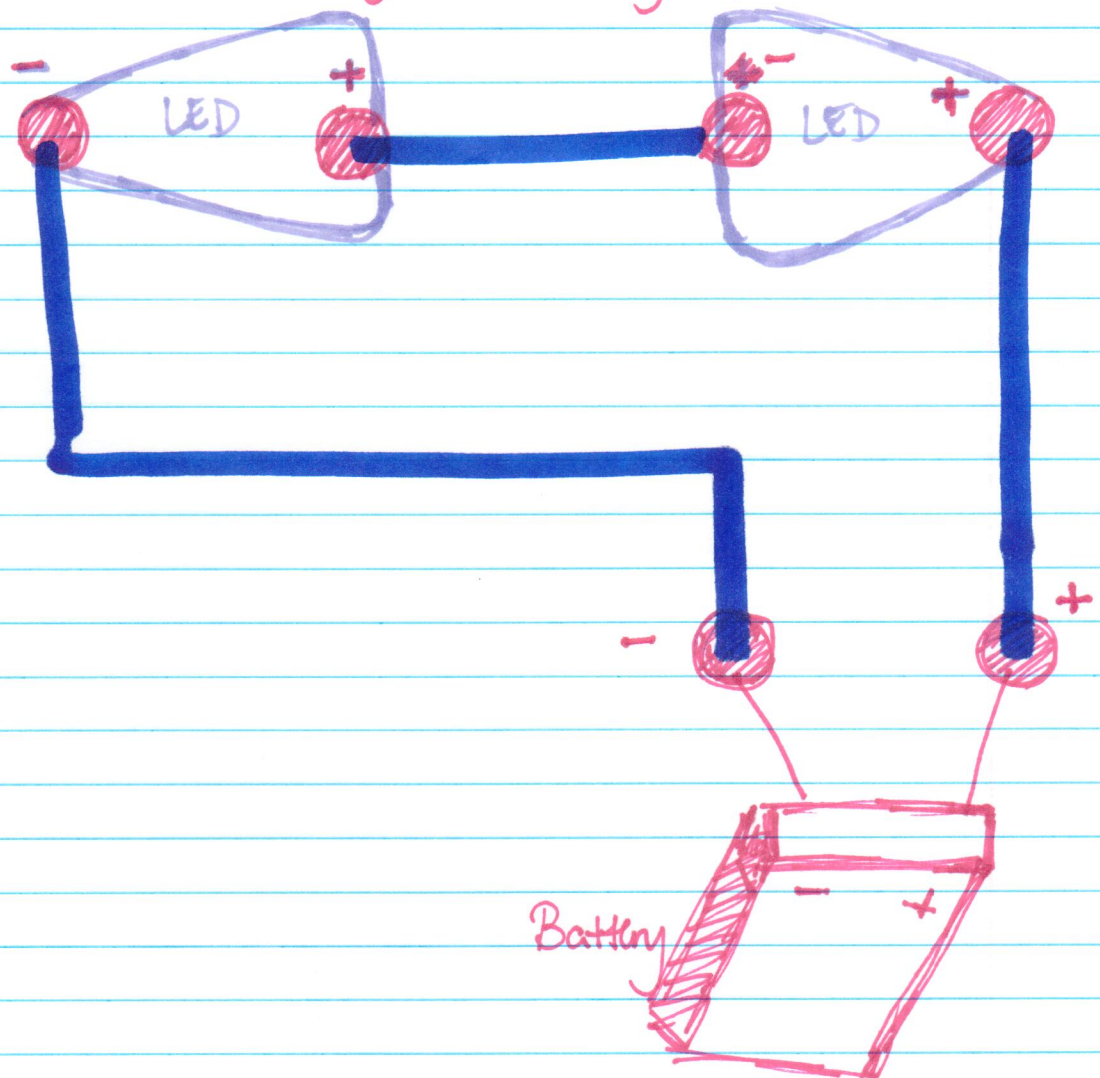
Let's flip the LED?



Why is it not lighting up?

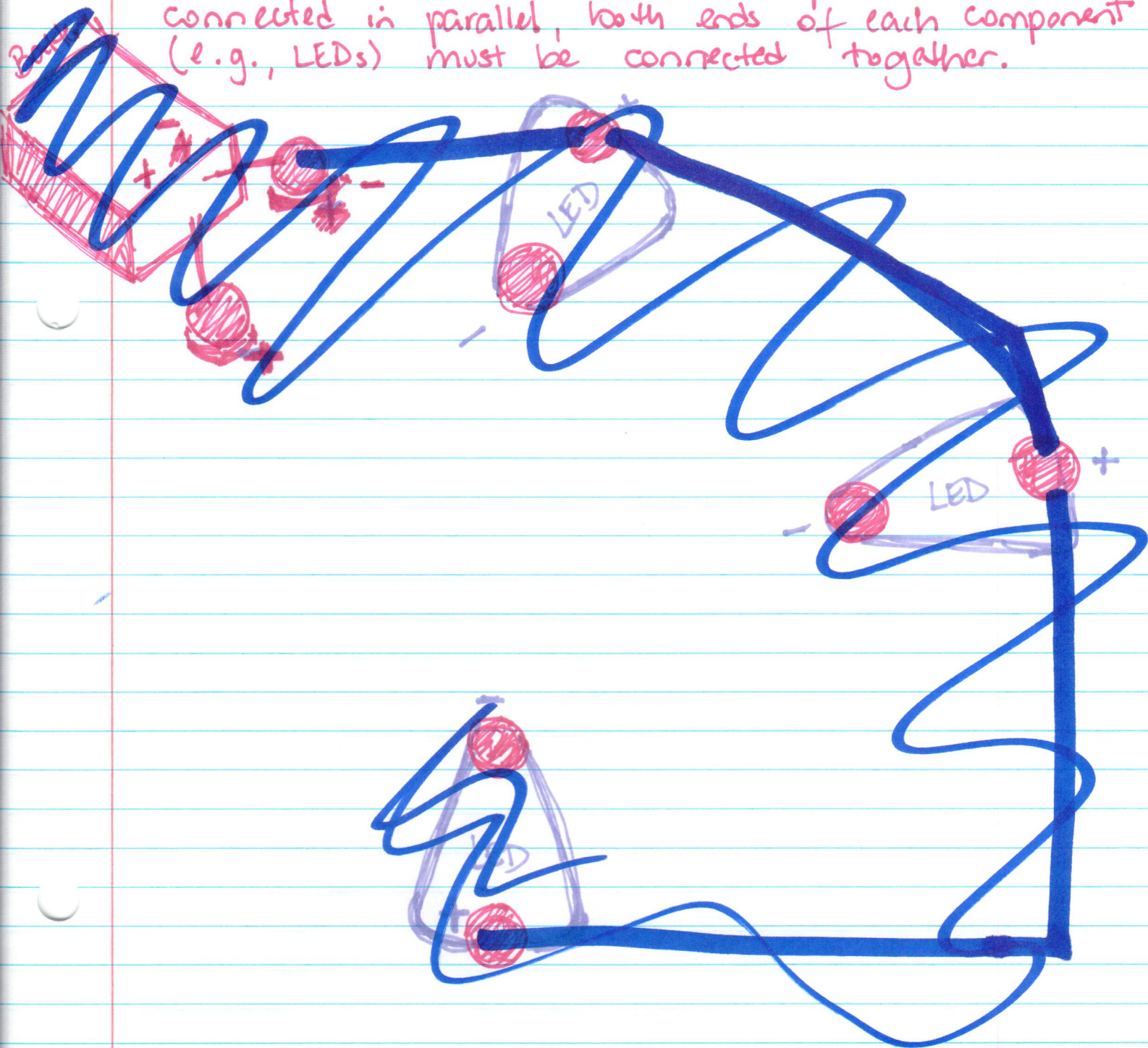
4) Exercise 4: Understanding Series circuit

- Learn to connect component in series, in which the current only follows one path.
- Understand that series components are connected to follow a single path, without being separated by any branches (e.g. a string of LEDs).



Exercise 5: Understanding parallel circuits

- Learn to connect components in parallel, in which the current is divided into two or more branches, before recombining to close the circuit loop.
- Understand that for two ~~or~~ components to be connected in parallel, both ends of each component (e.g., LEDs) must be connected together.



Battery

