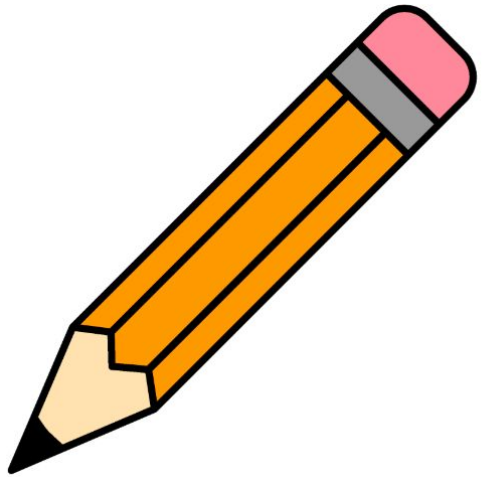
Welcome!

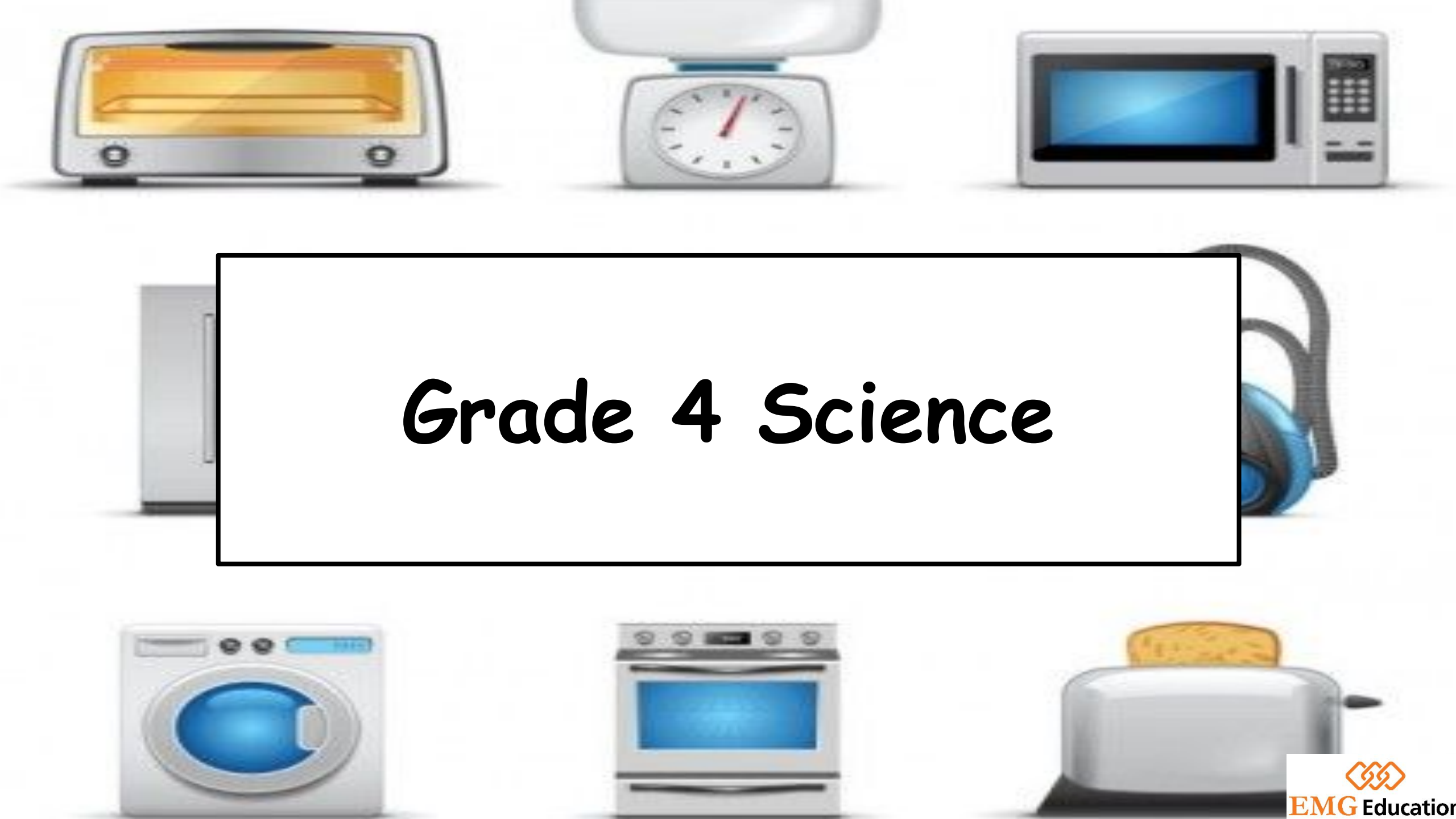
Do you have...?



1) your pen/pencil? →

← 2) your notebook/paper?

3) some water? →

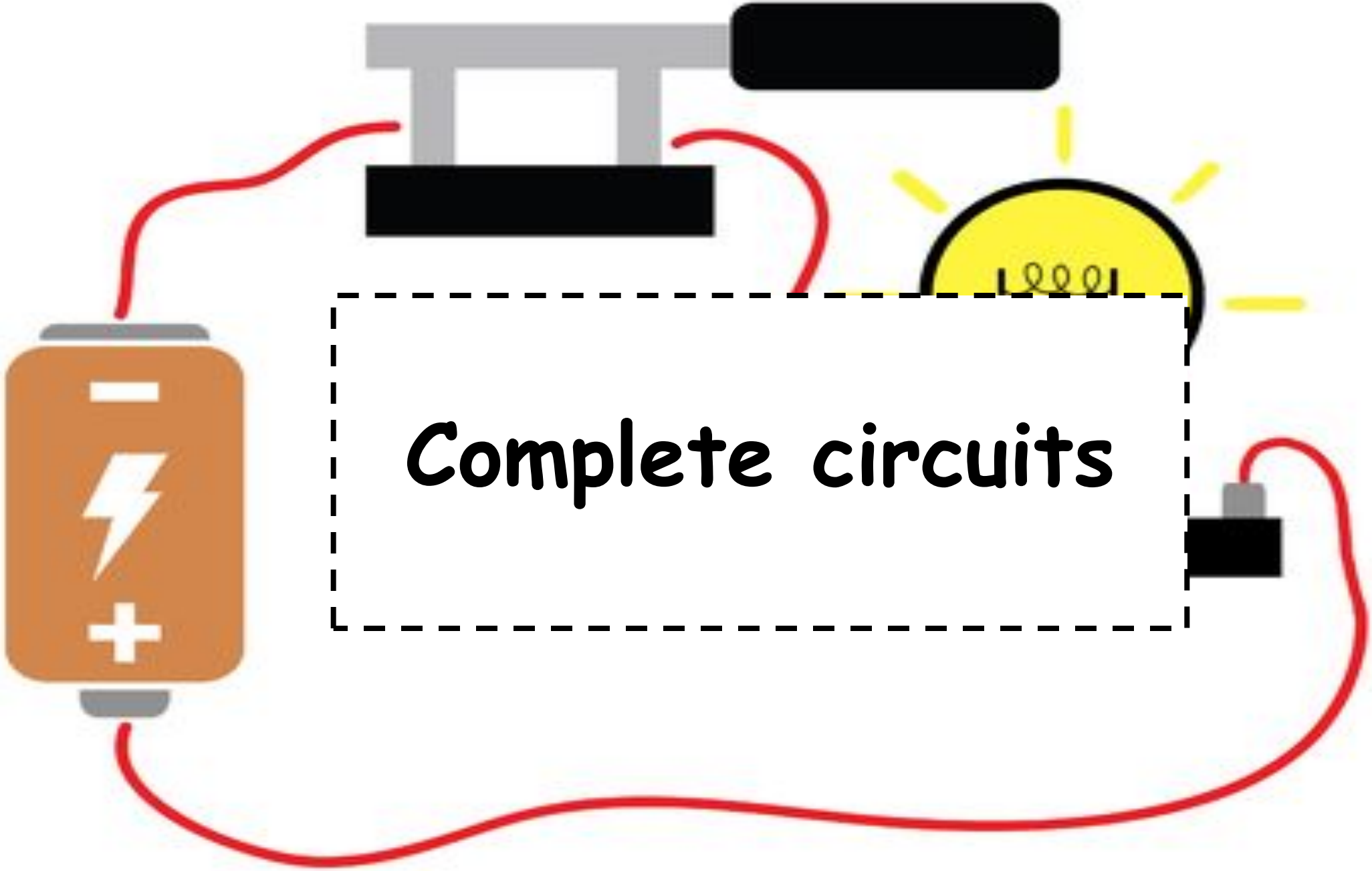


Grade 4 Science

What will we learn today?

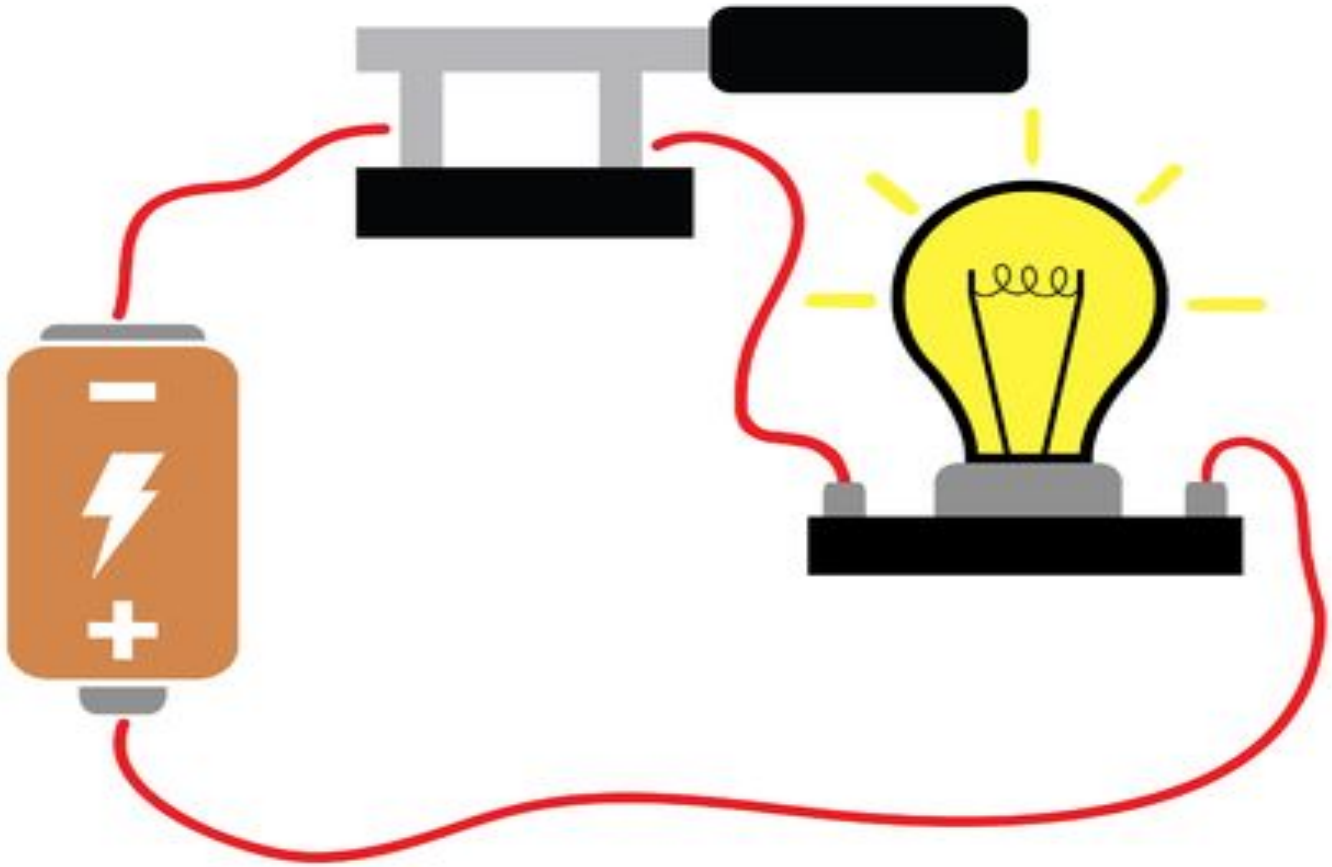
When a circuit is **complete** and when a circuit is **incomplete**.

How to draw a **circuit diagram** using **symbols**.

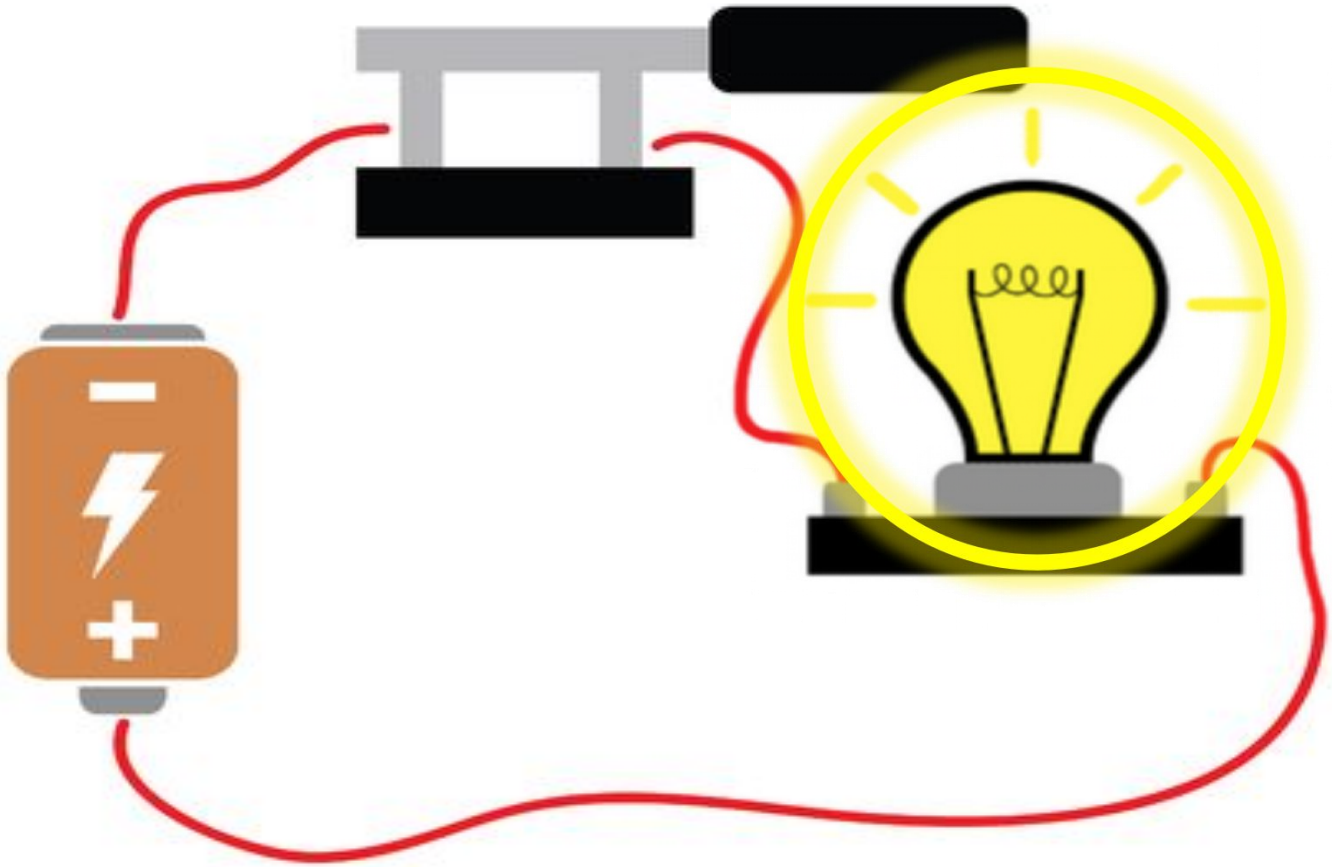


Complete circuits

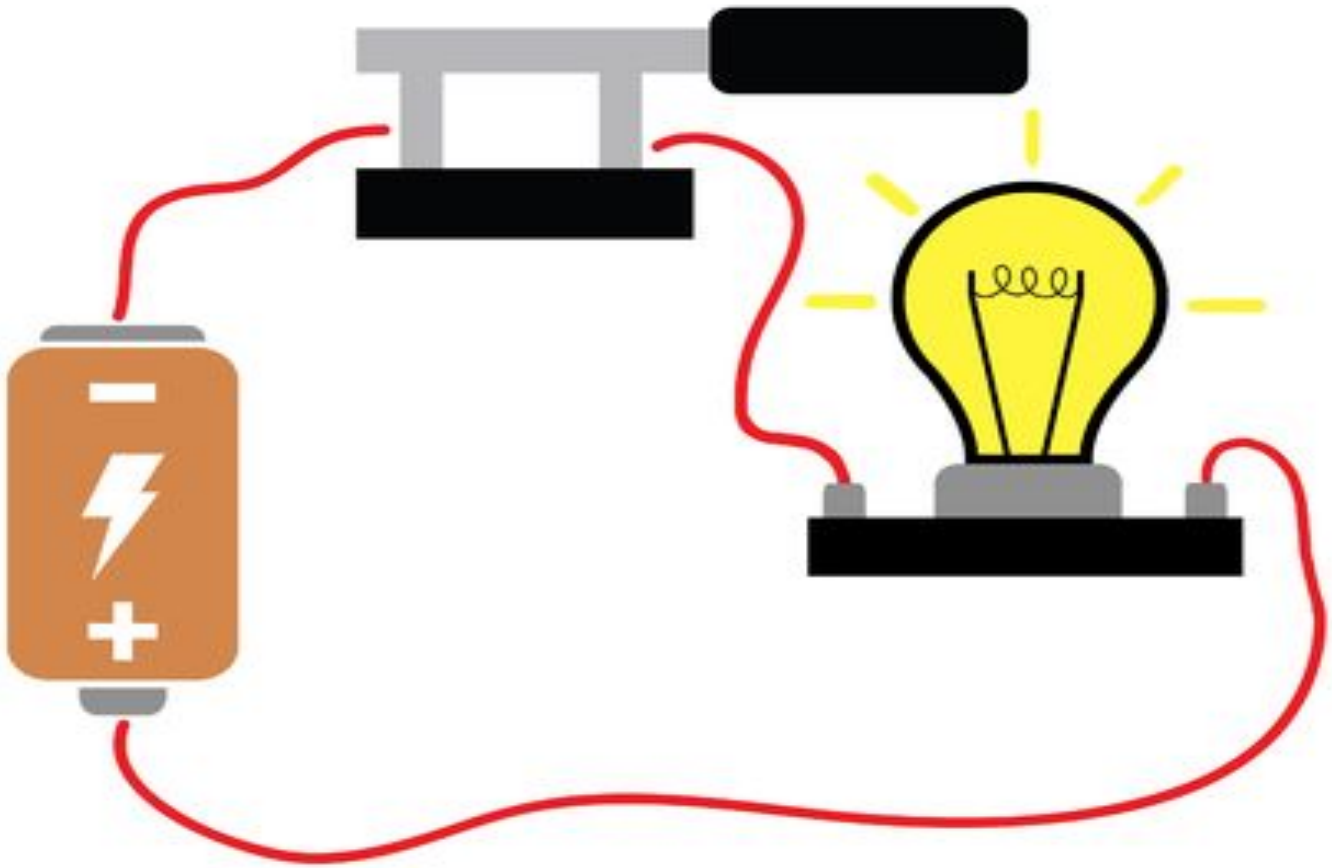
Look, the bulb is shining!



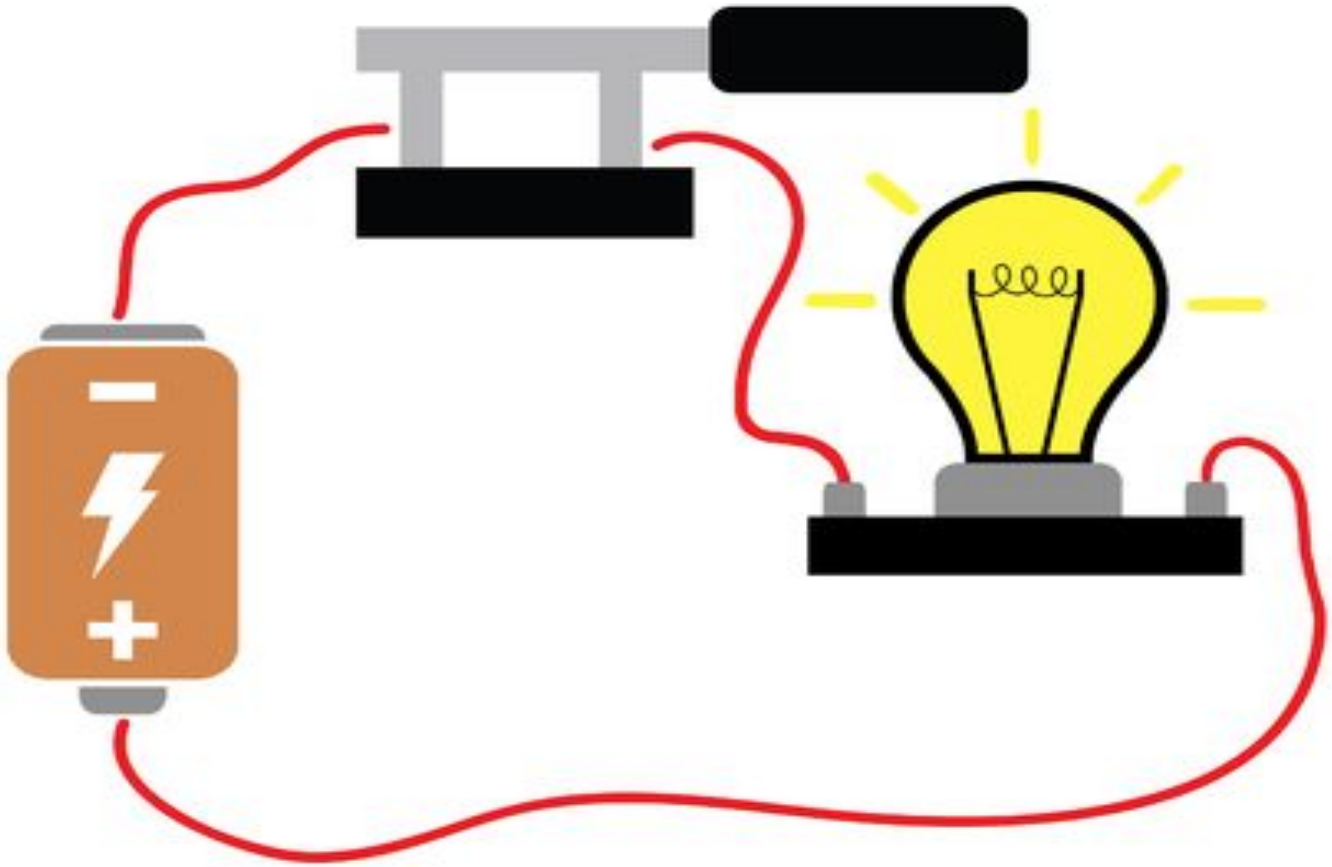
Look, the bulb is shining!

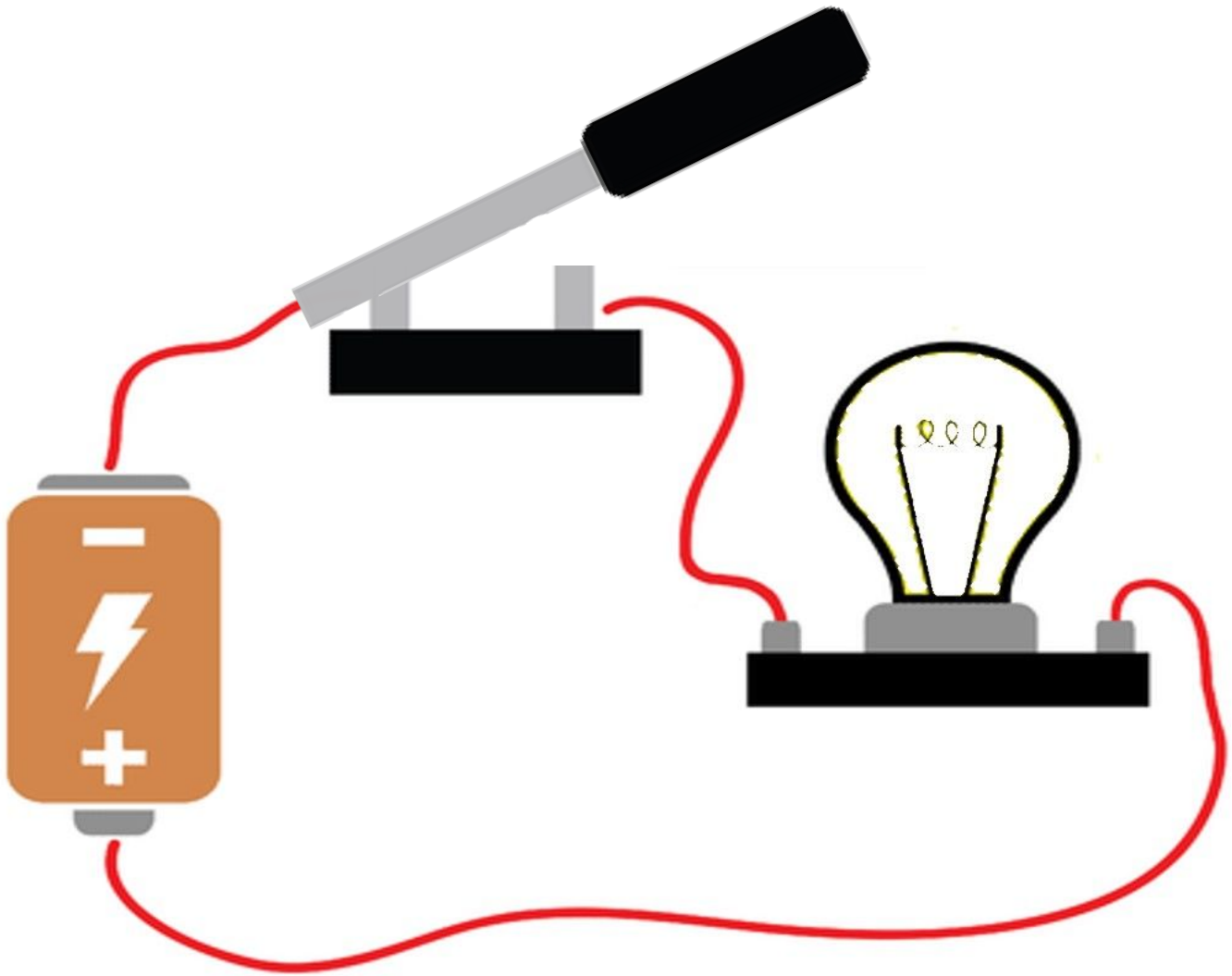


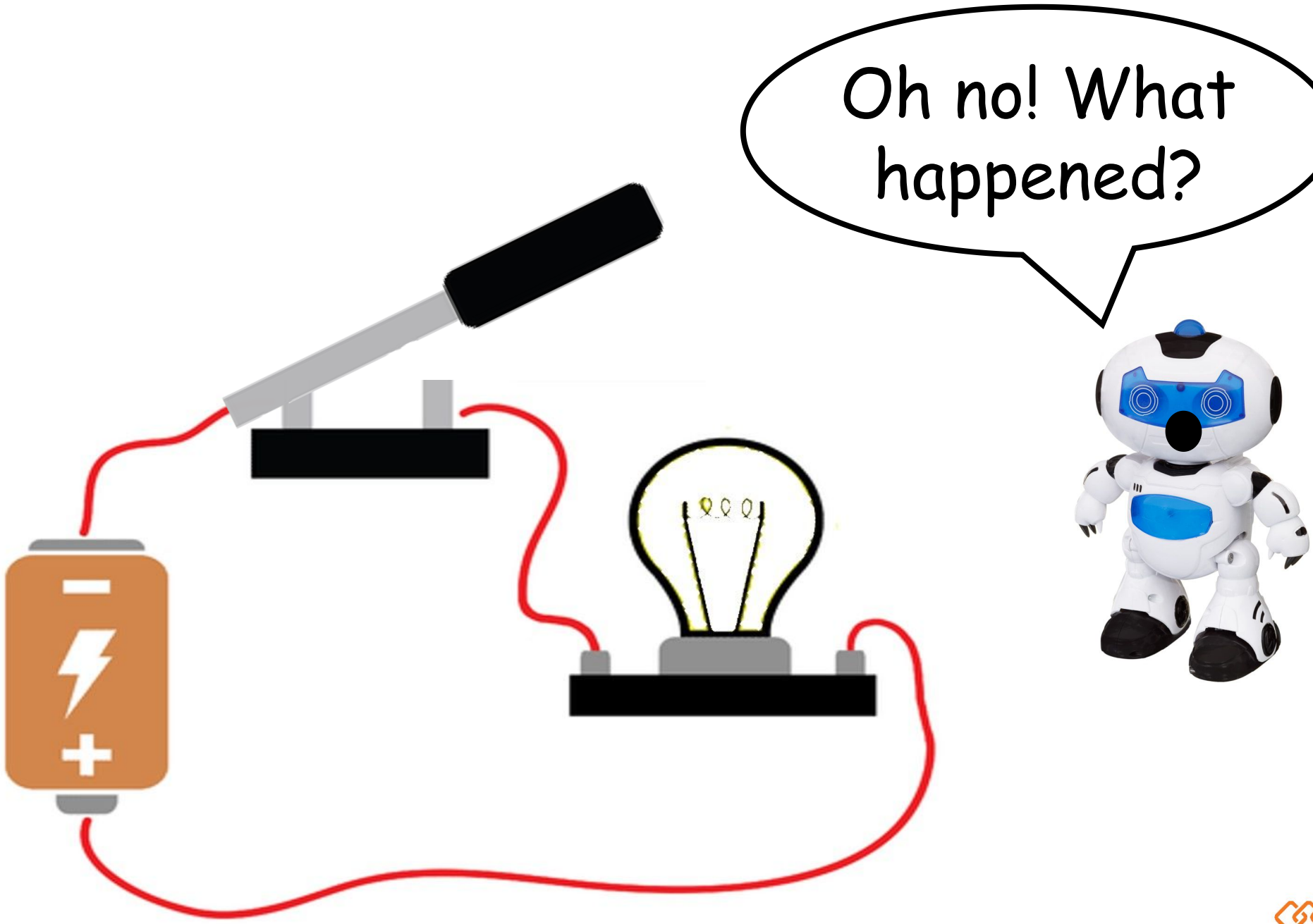
The circuit is complete.



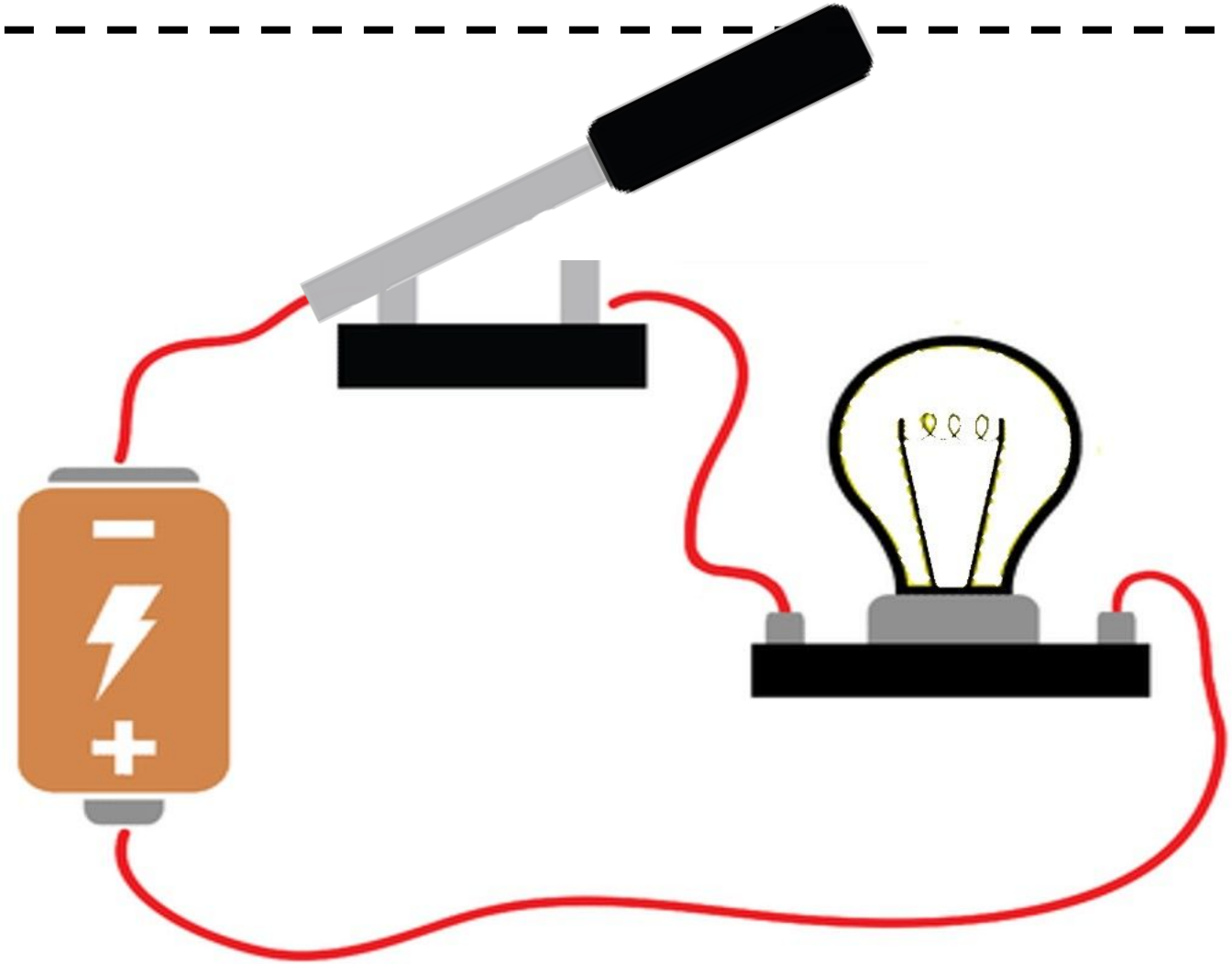
Electricity can flow.



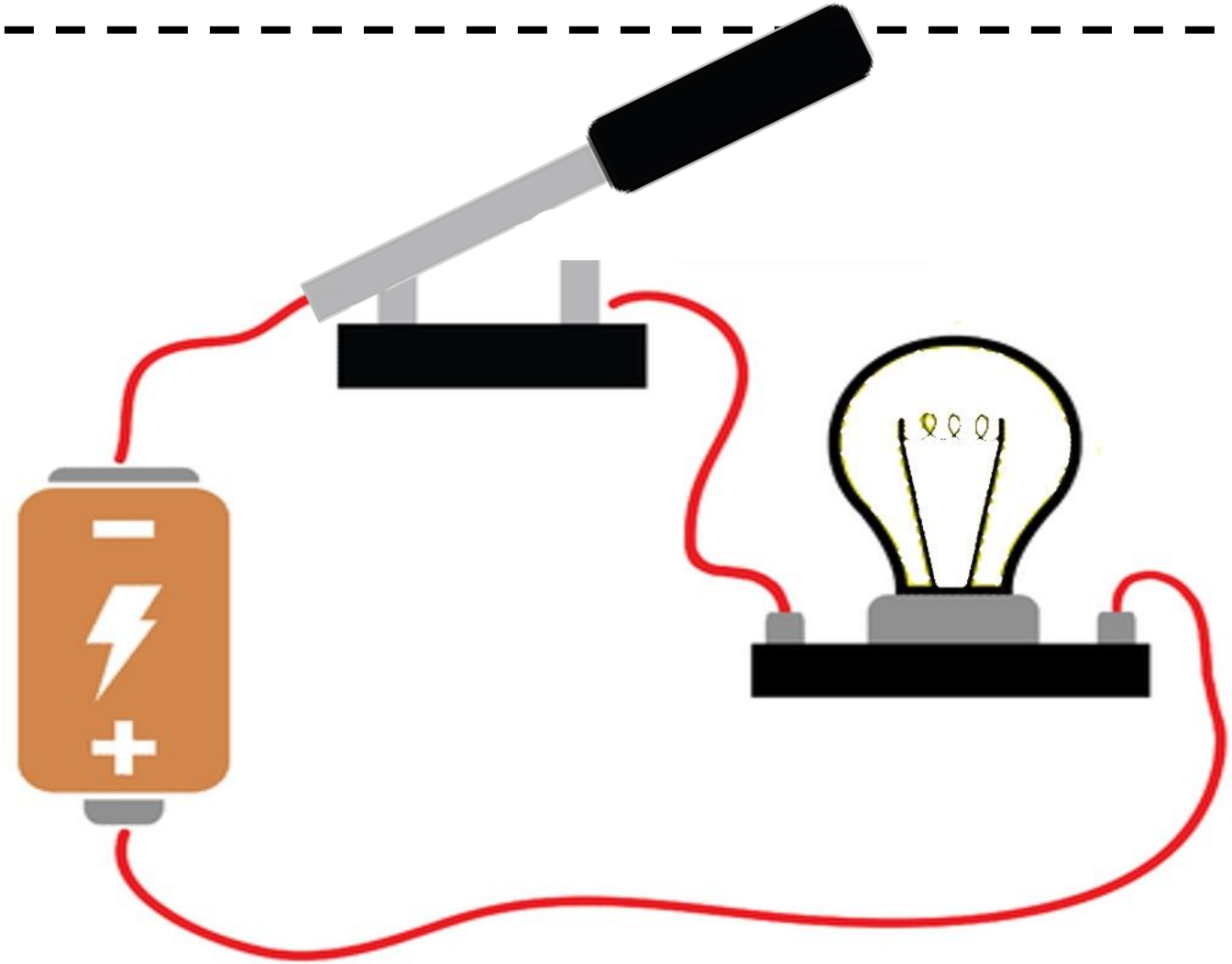




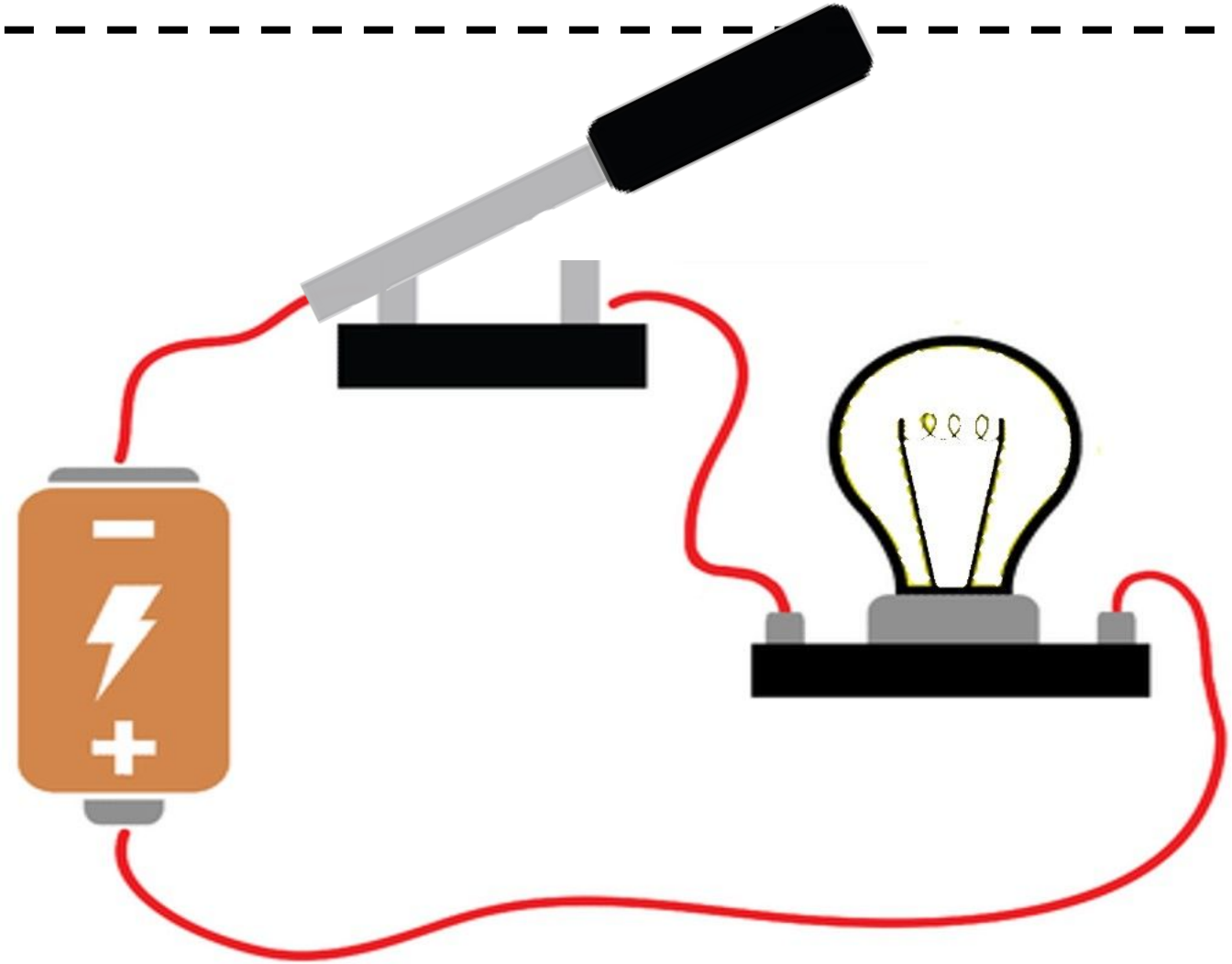
The switch is open.

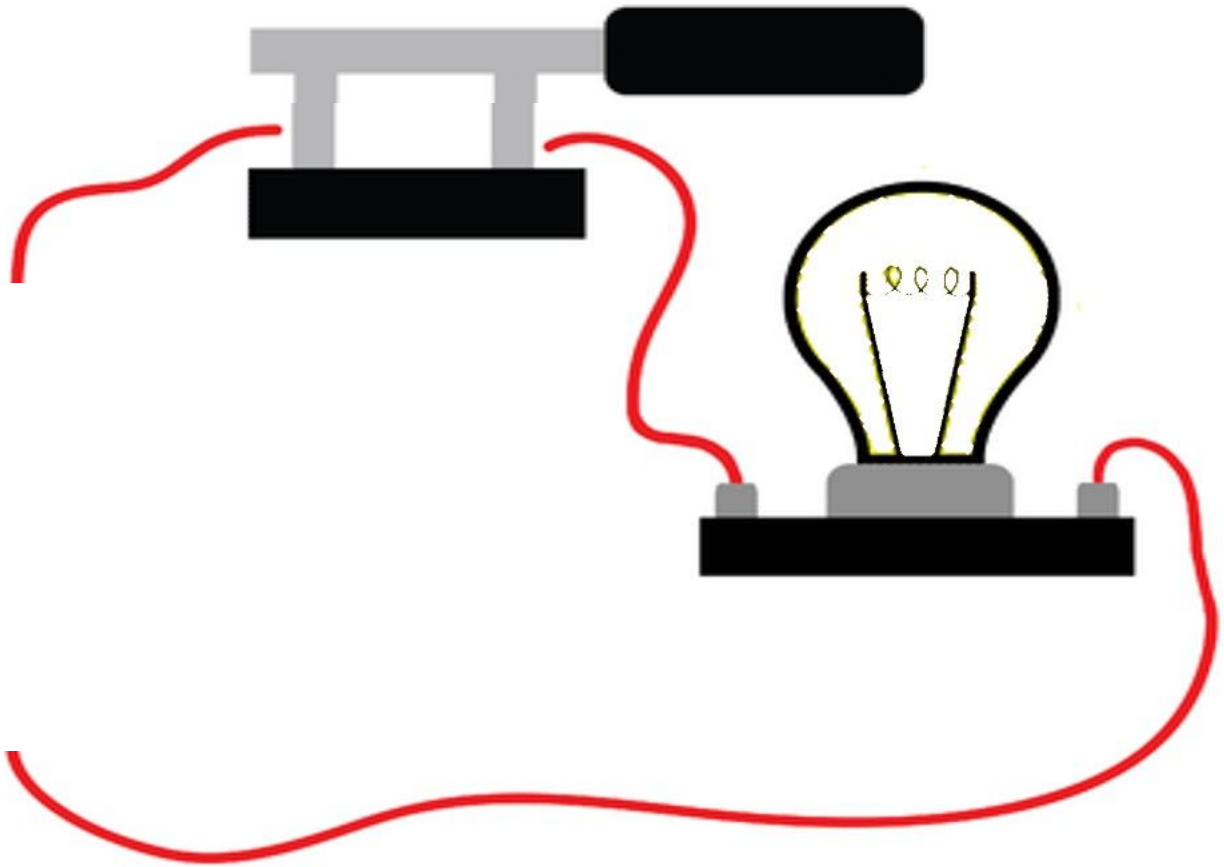


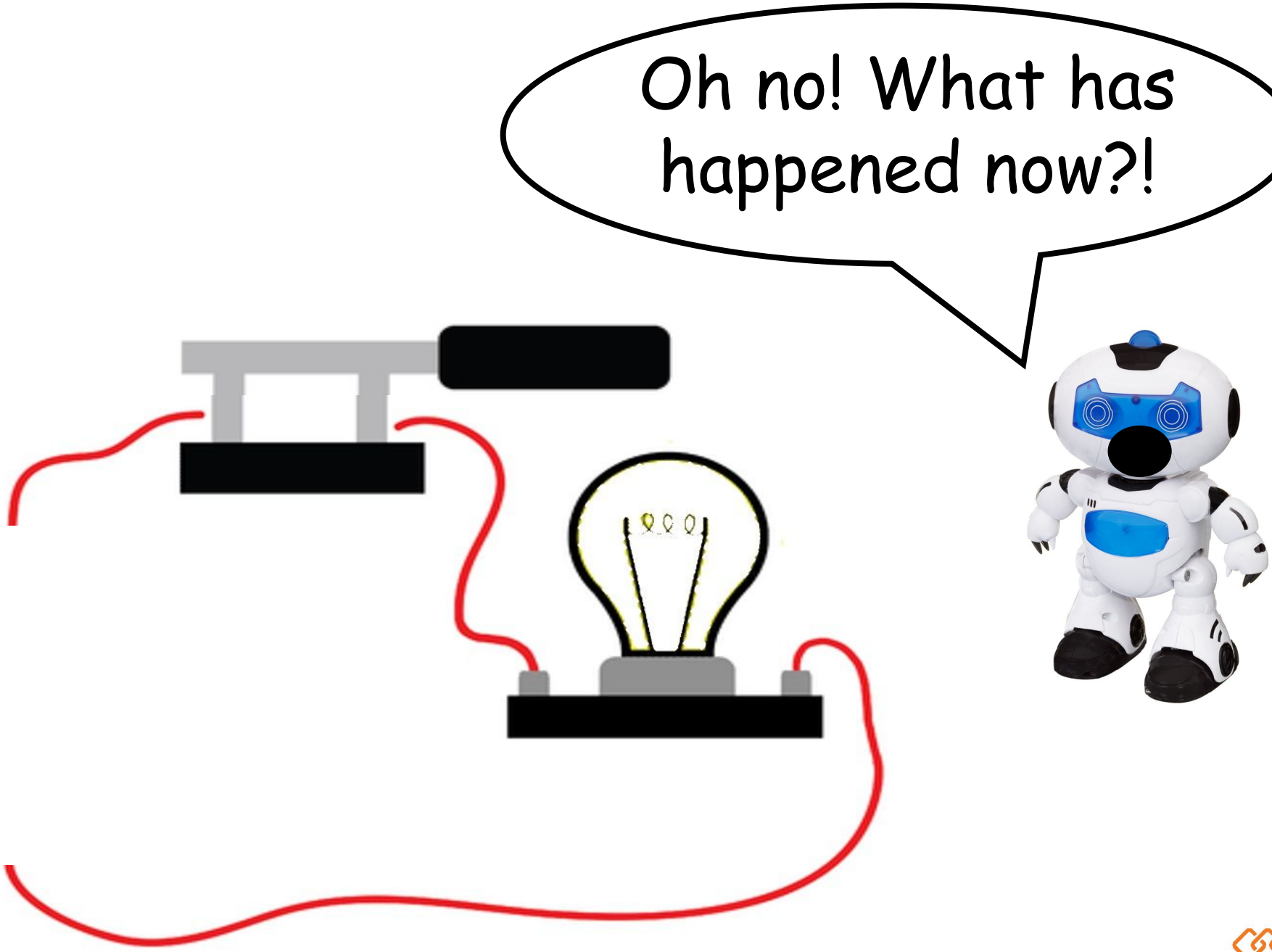
The circuit is incomplete.



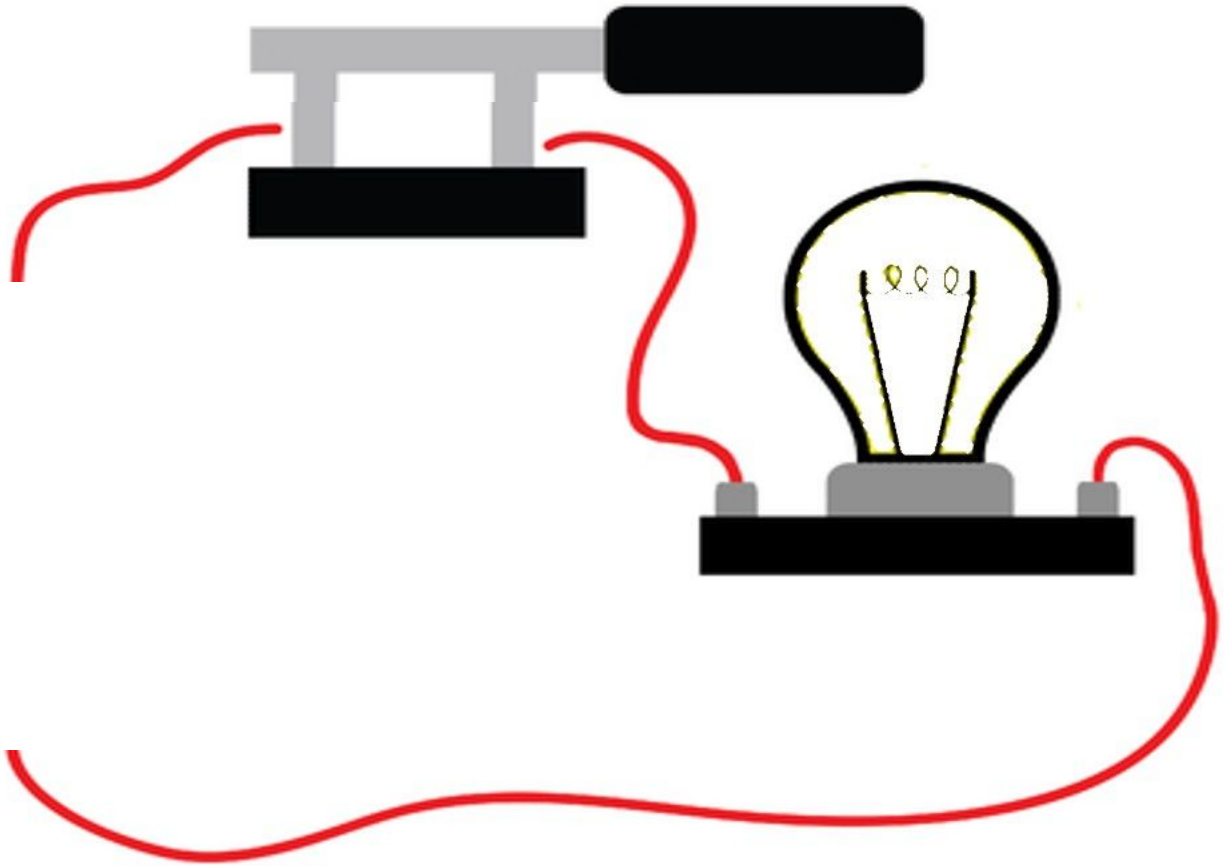
Electricity can't flow.



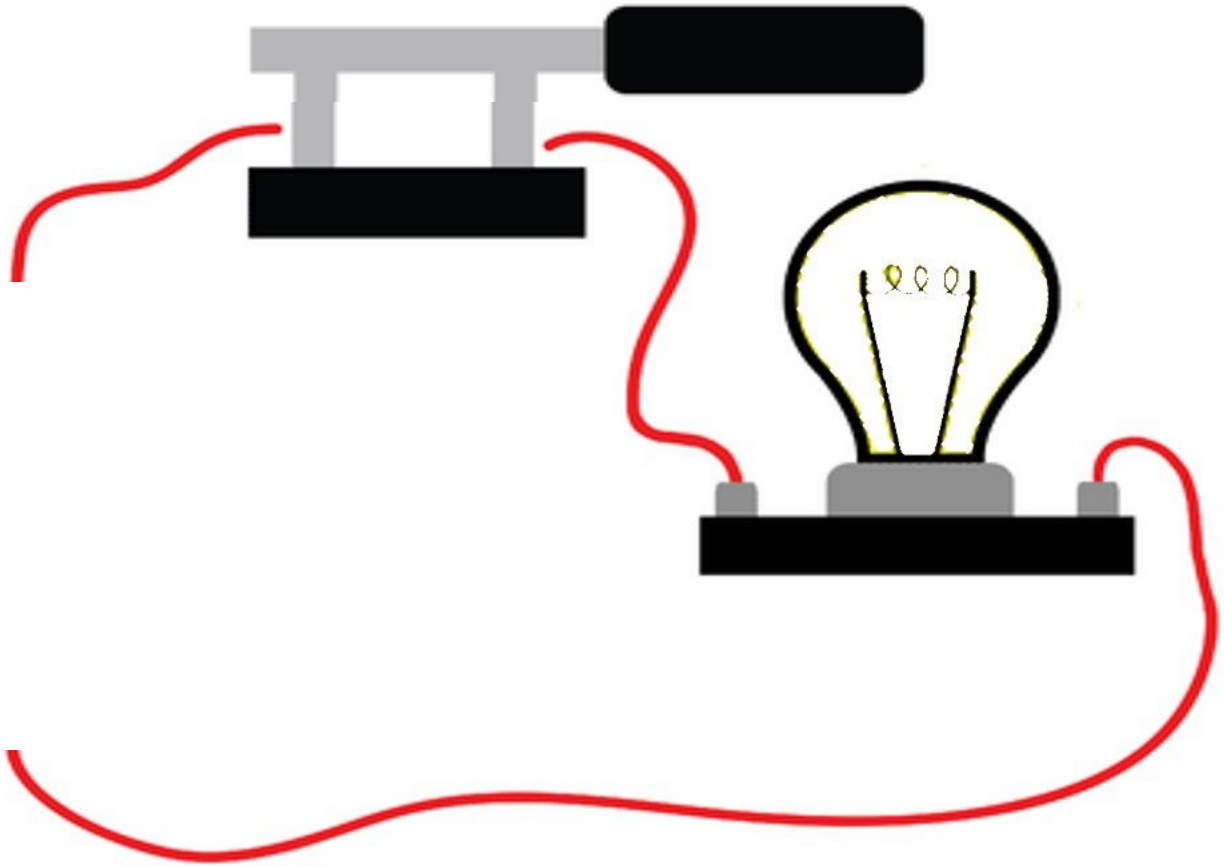




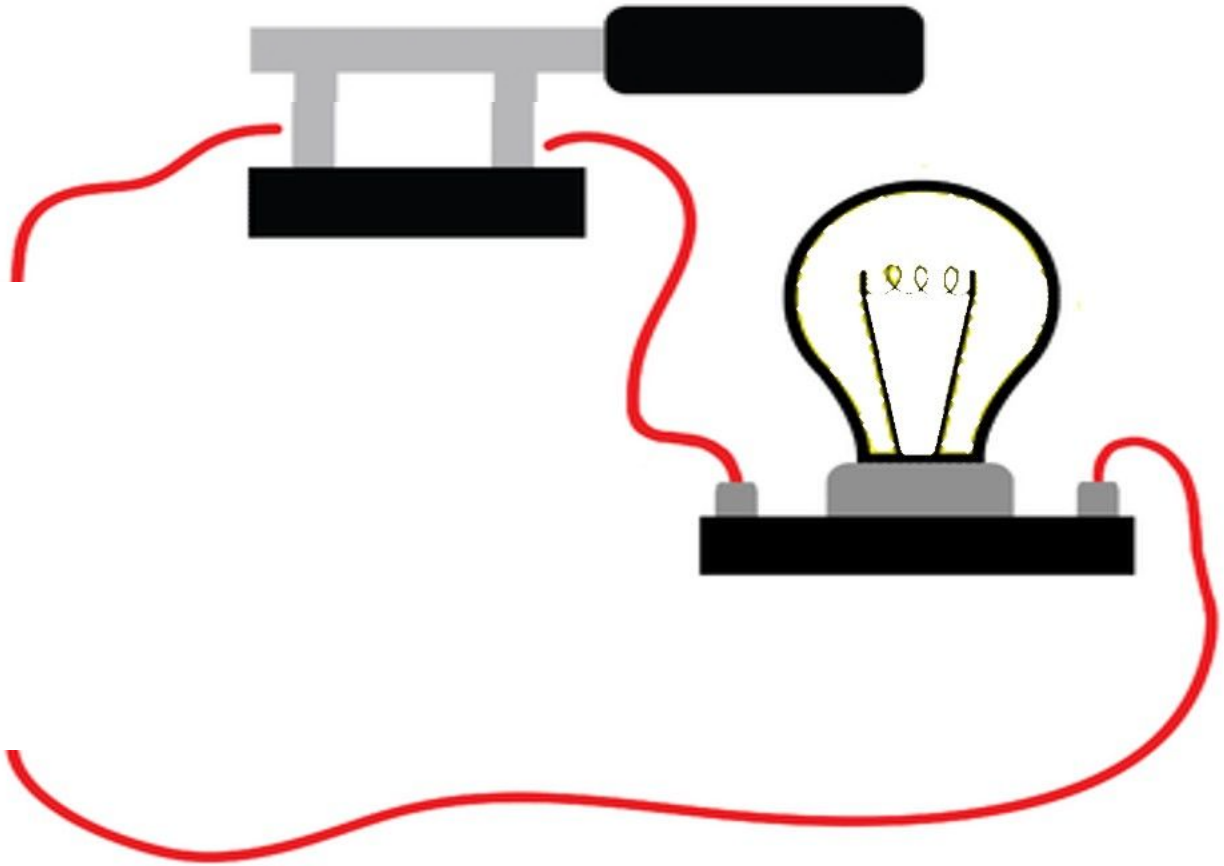
There is no battery.



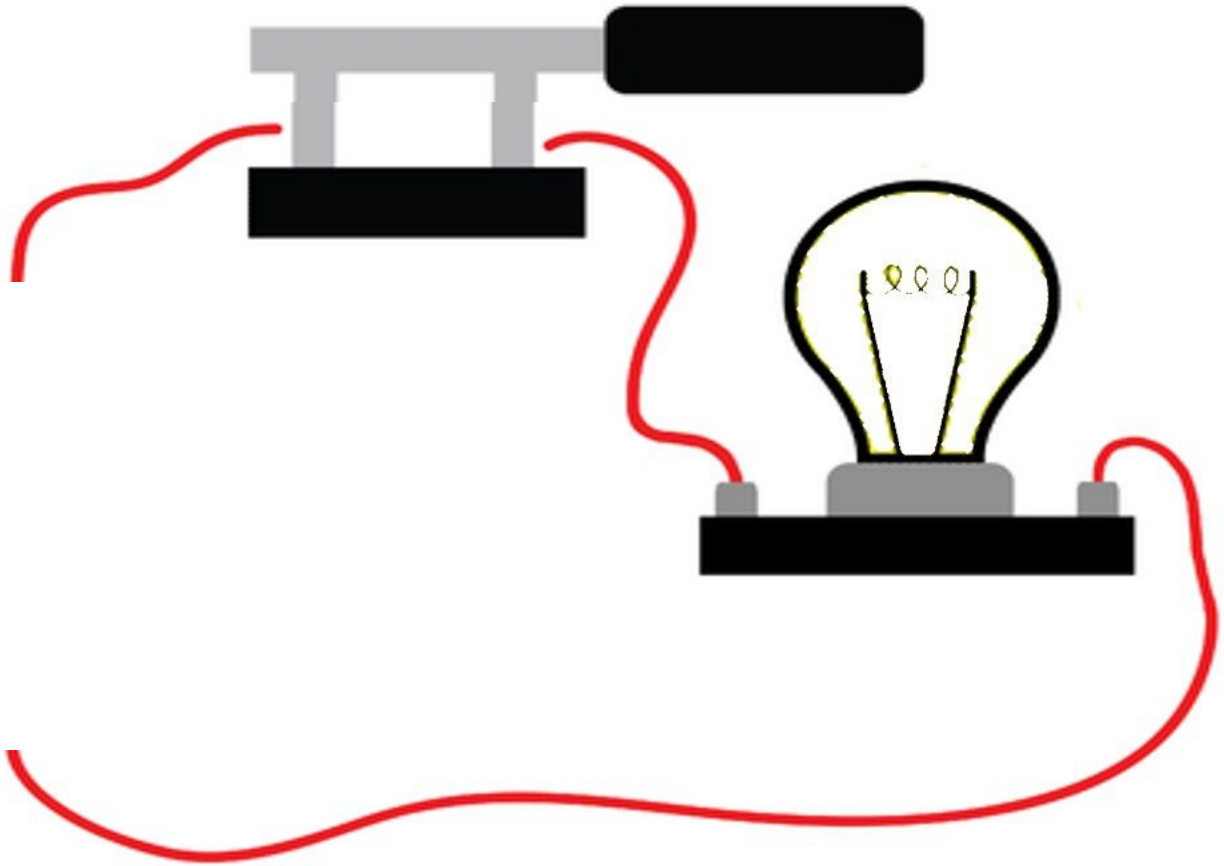
No battery = no power source and no energy.

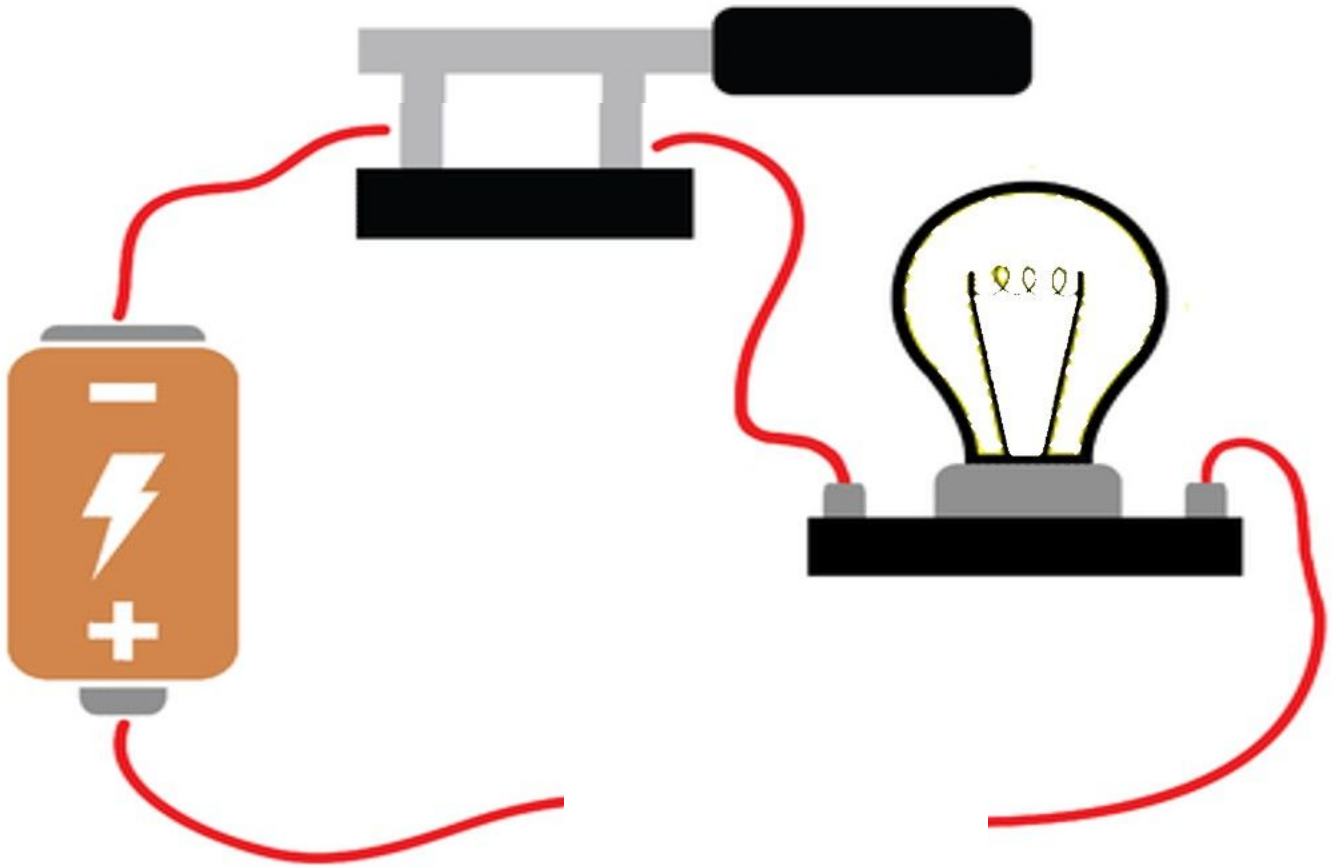


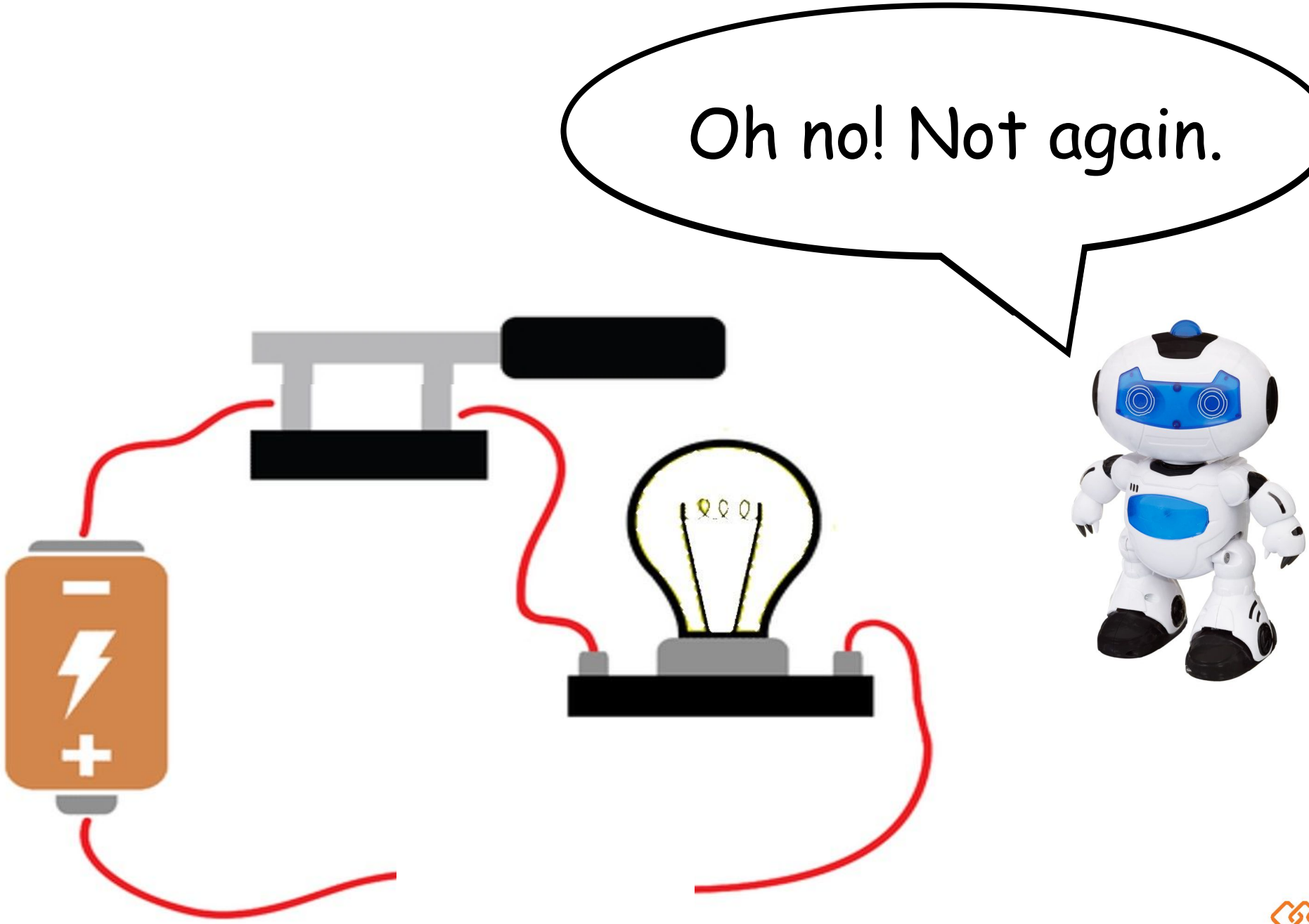
The circuit is incomplete.



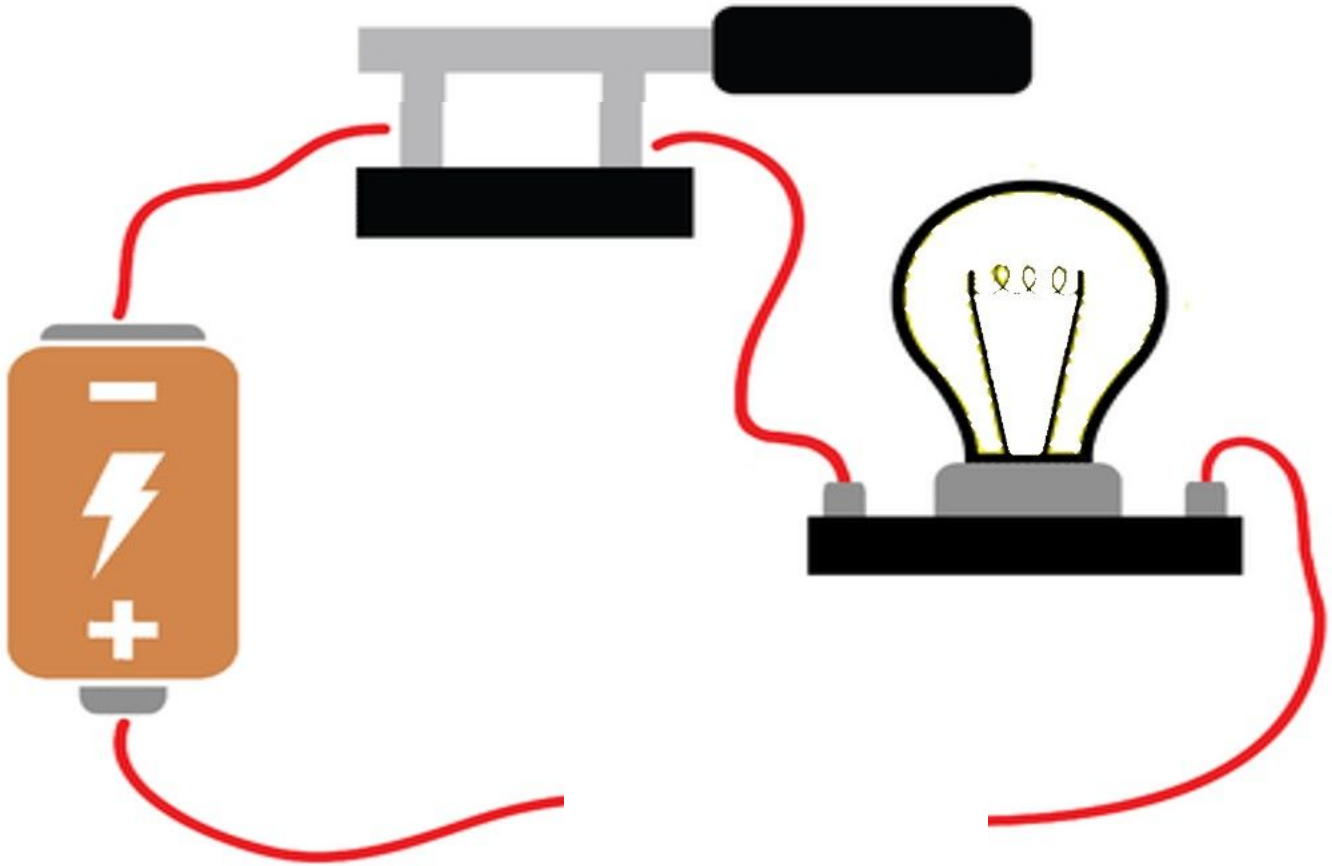
Electricity can't flow.



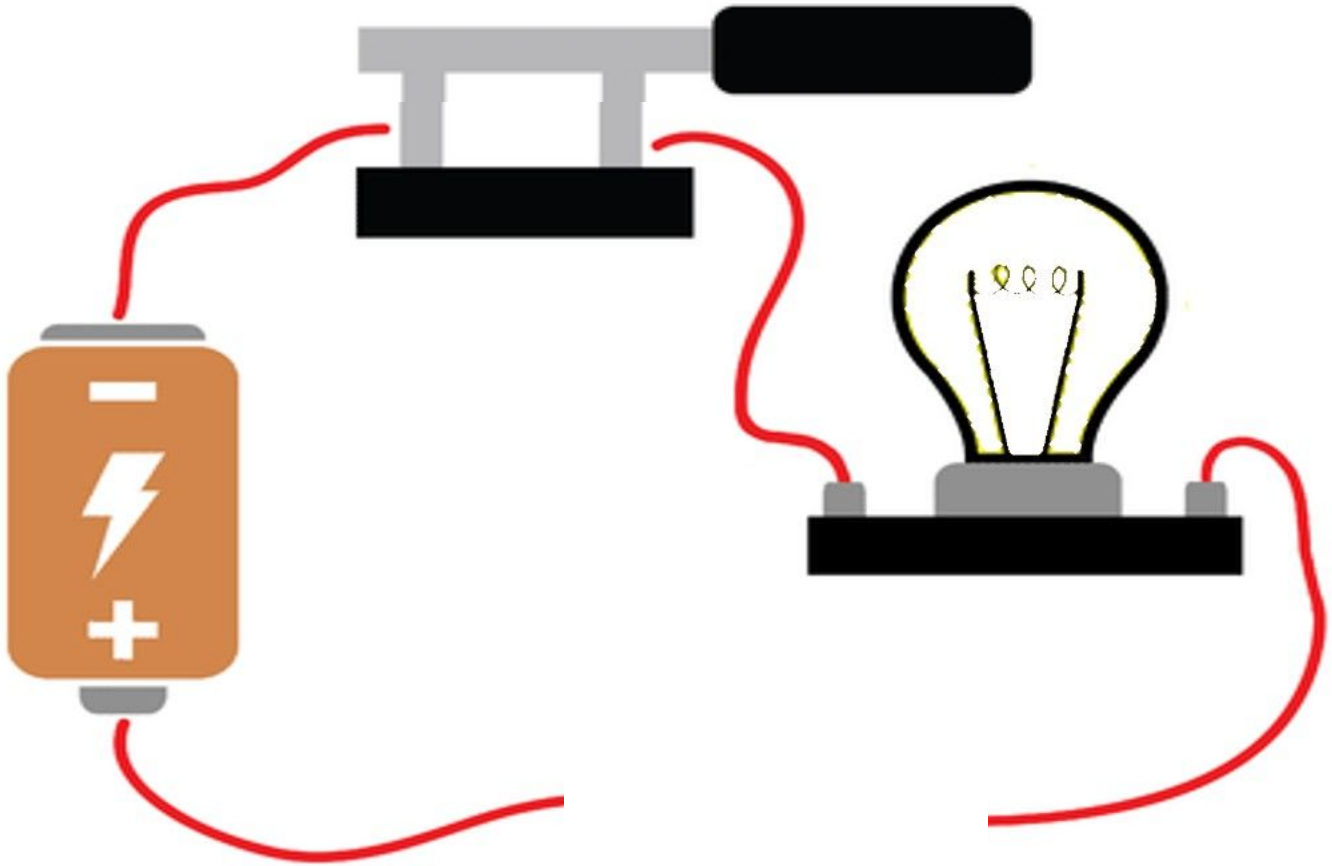




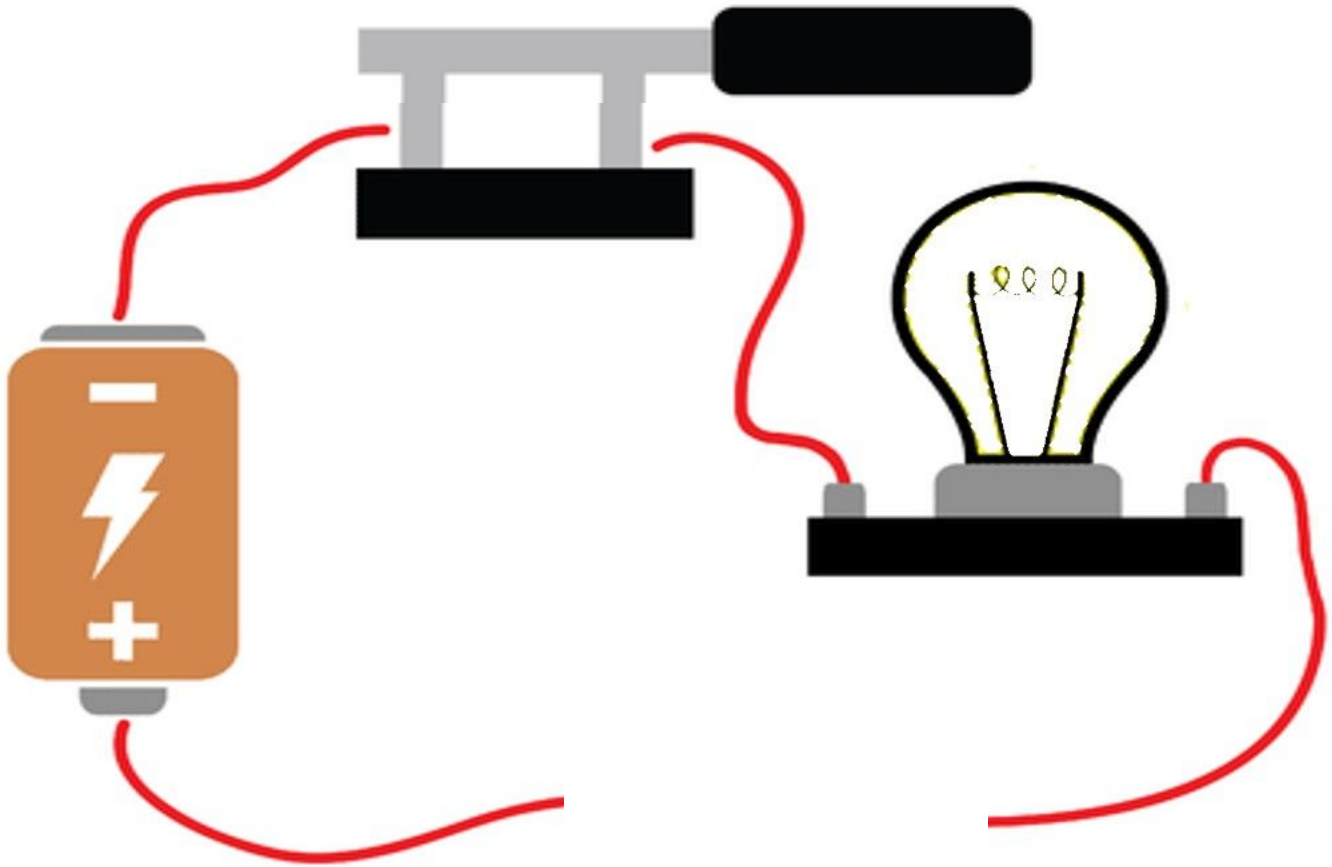
The wire is broken.

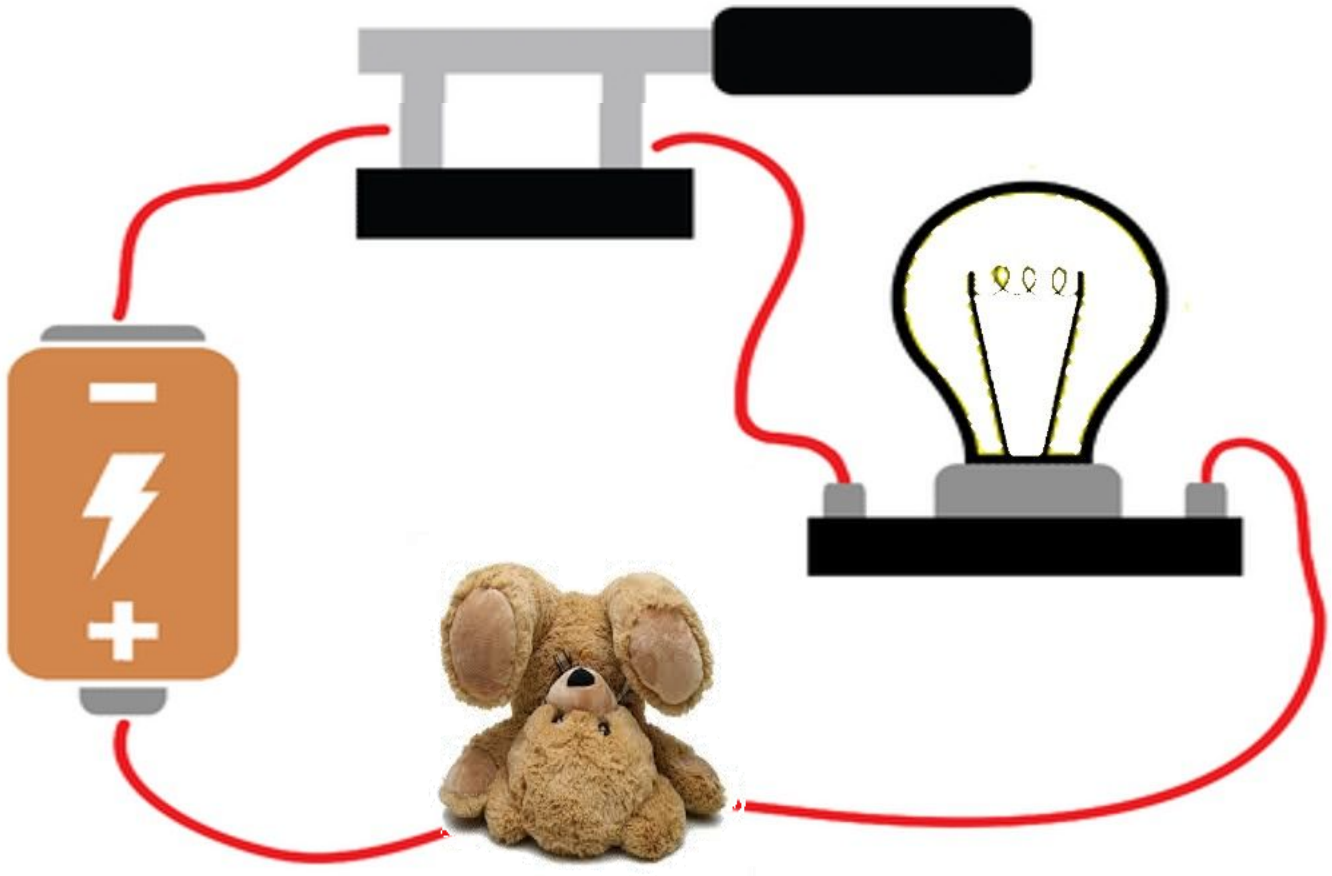


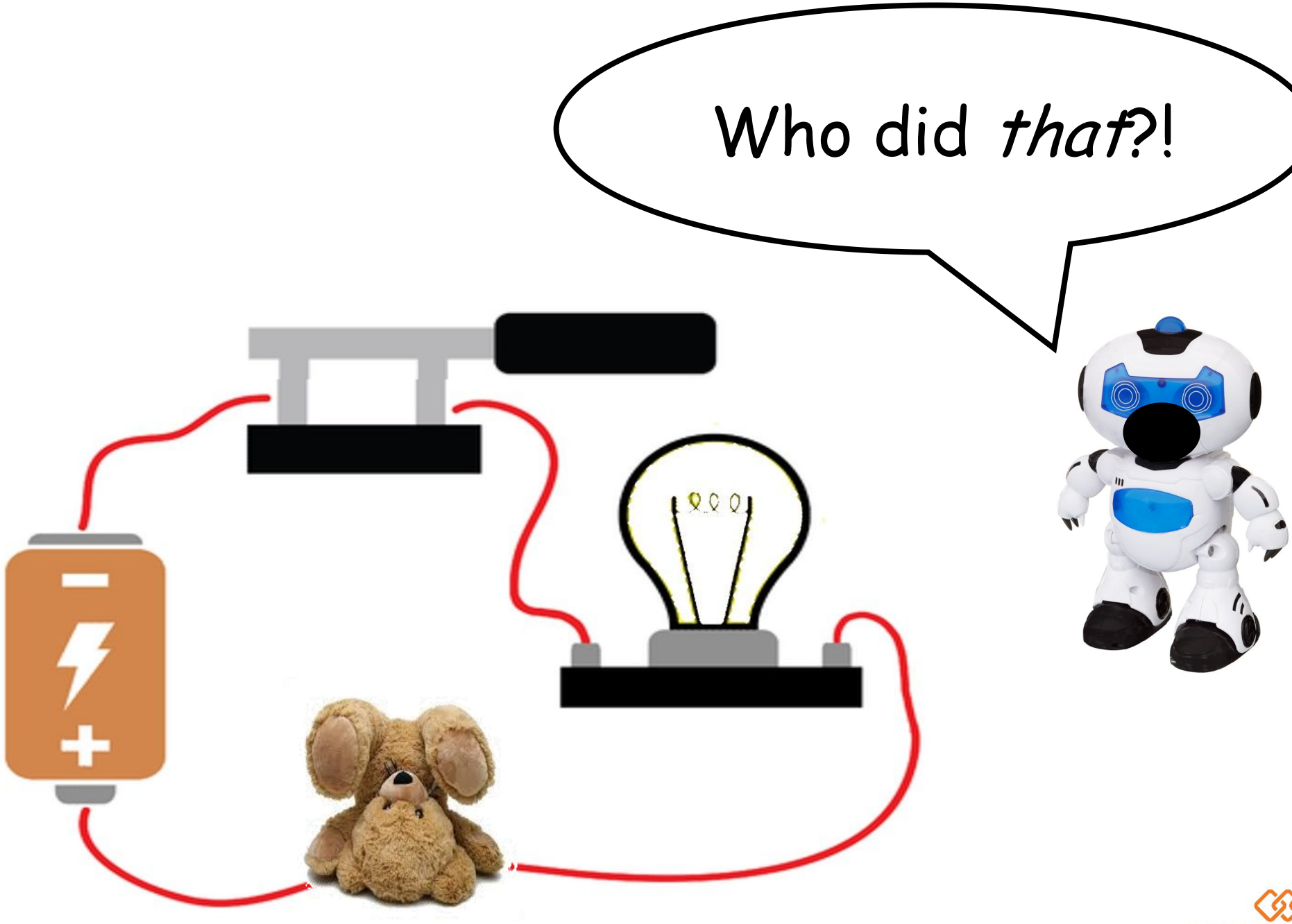
The circuit is incomplete.



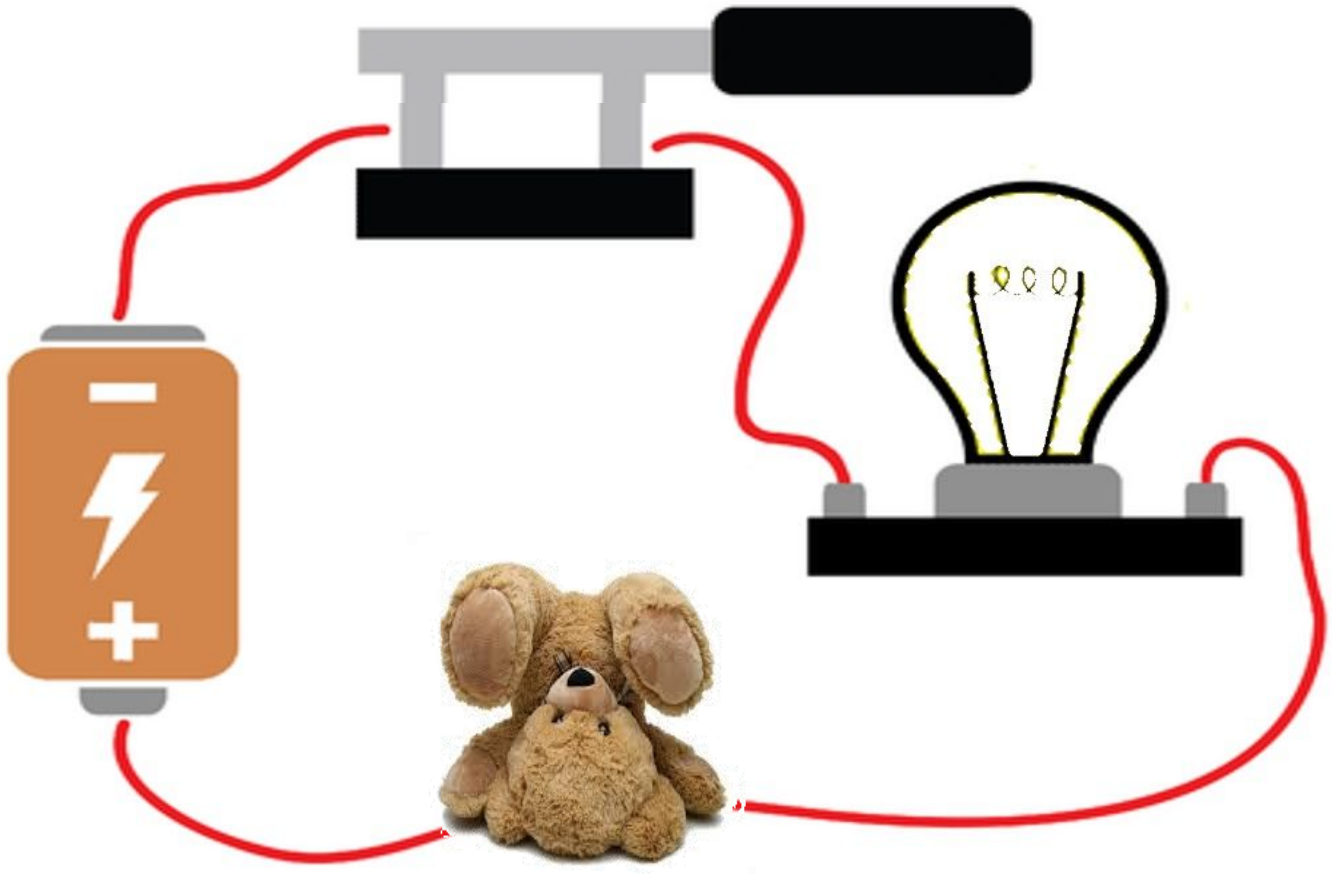
Electricity can't flow.



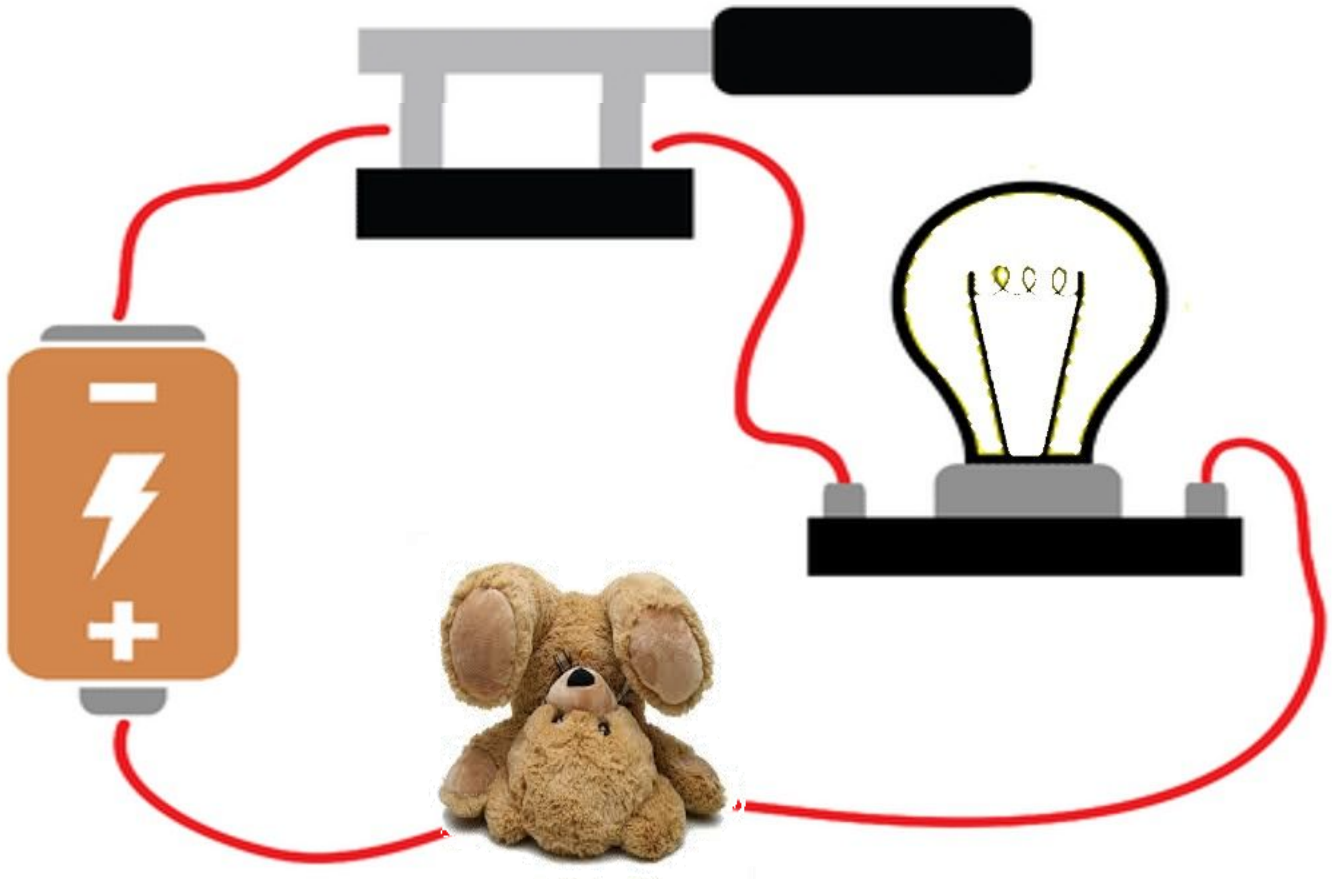




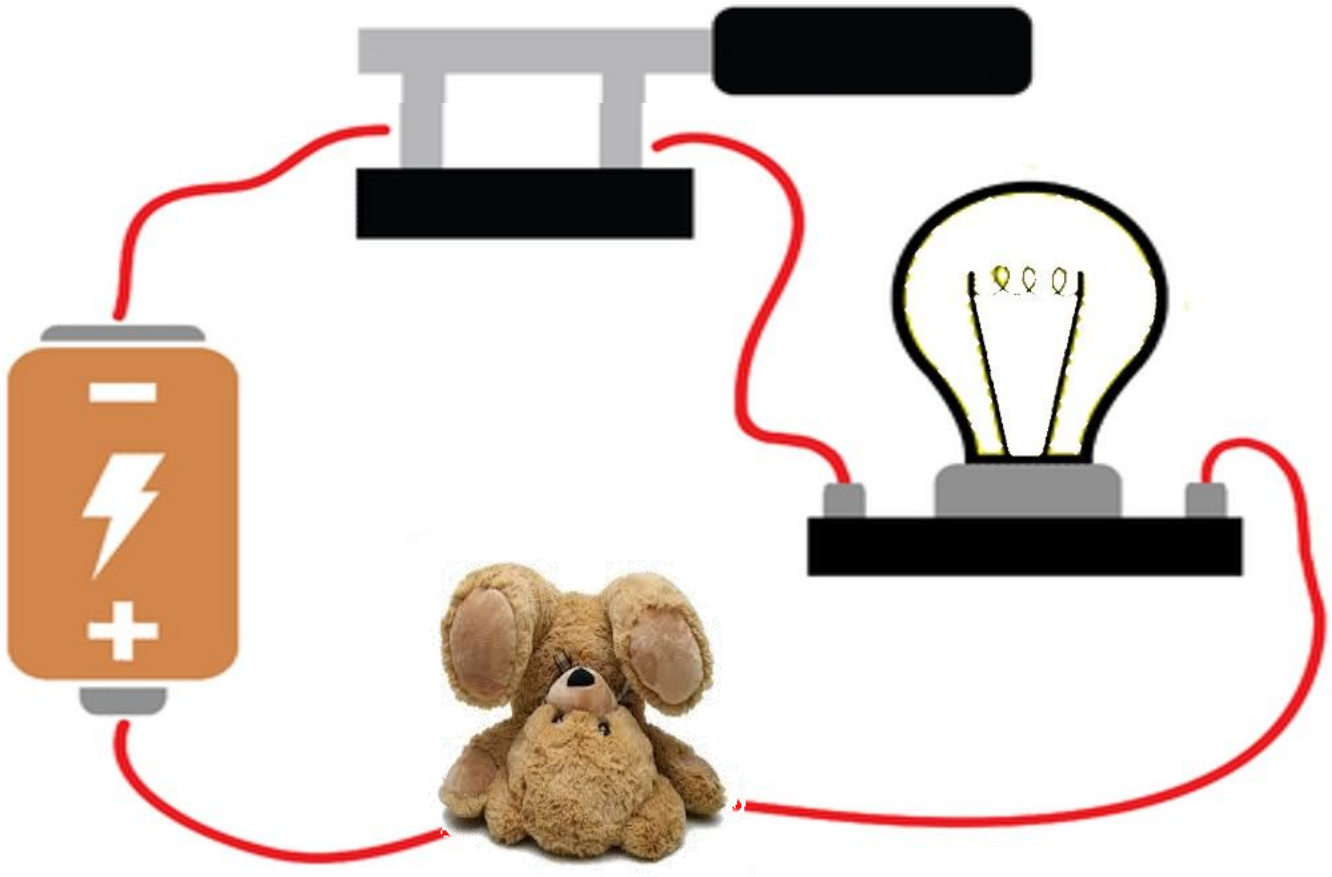
The teddy bear is an insulator.



The circuit is incomplete.



Electricity can't flow.

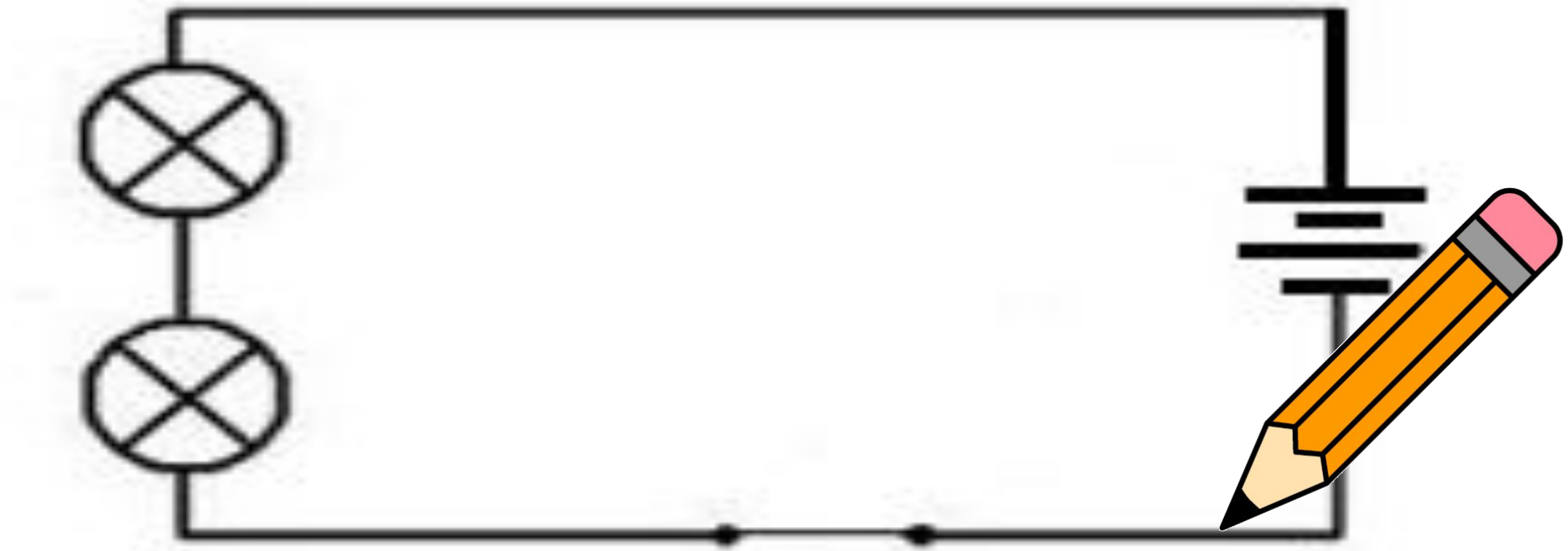


What have we learned so far?

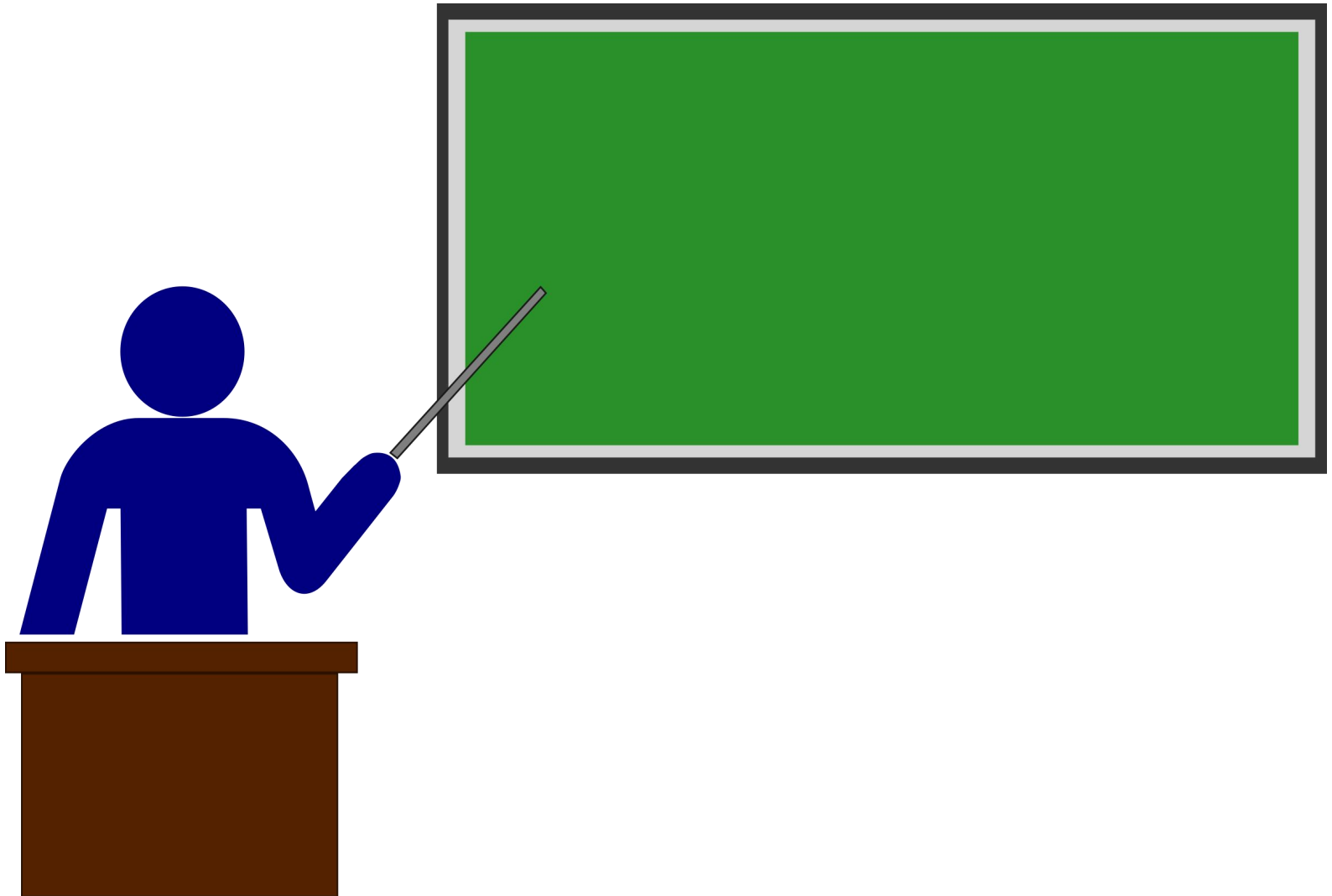
The **components** of a circuit (*review*).

When a circuit is **complete** and when a circuit is **incomplete**.

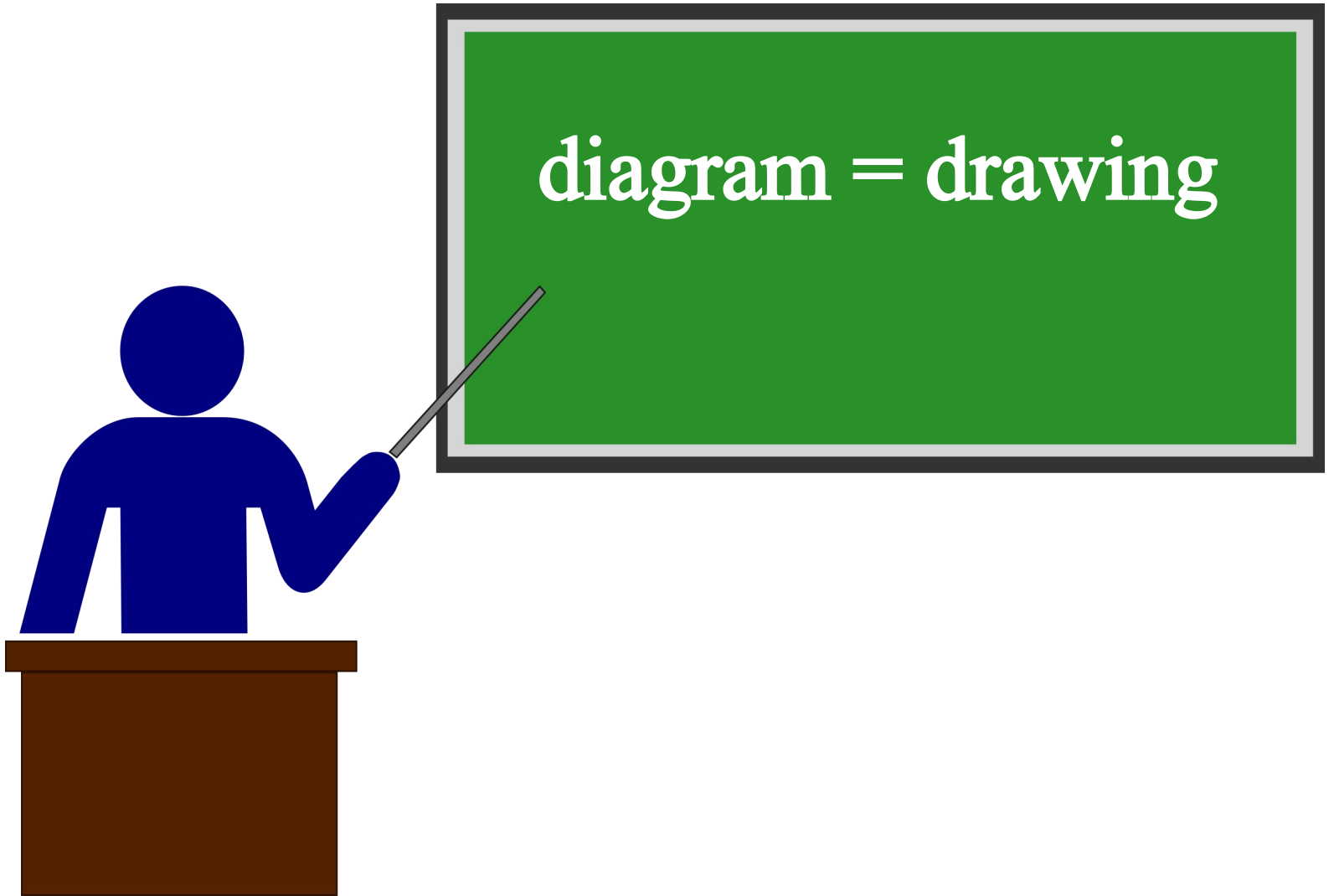
Drawing circuits



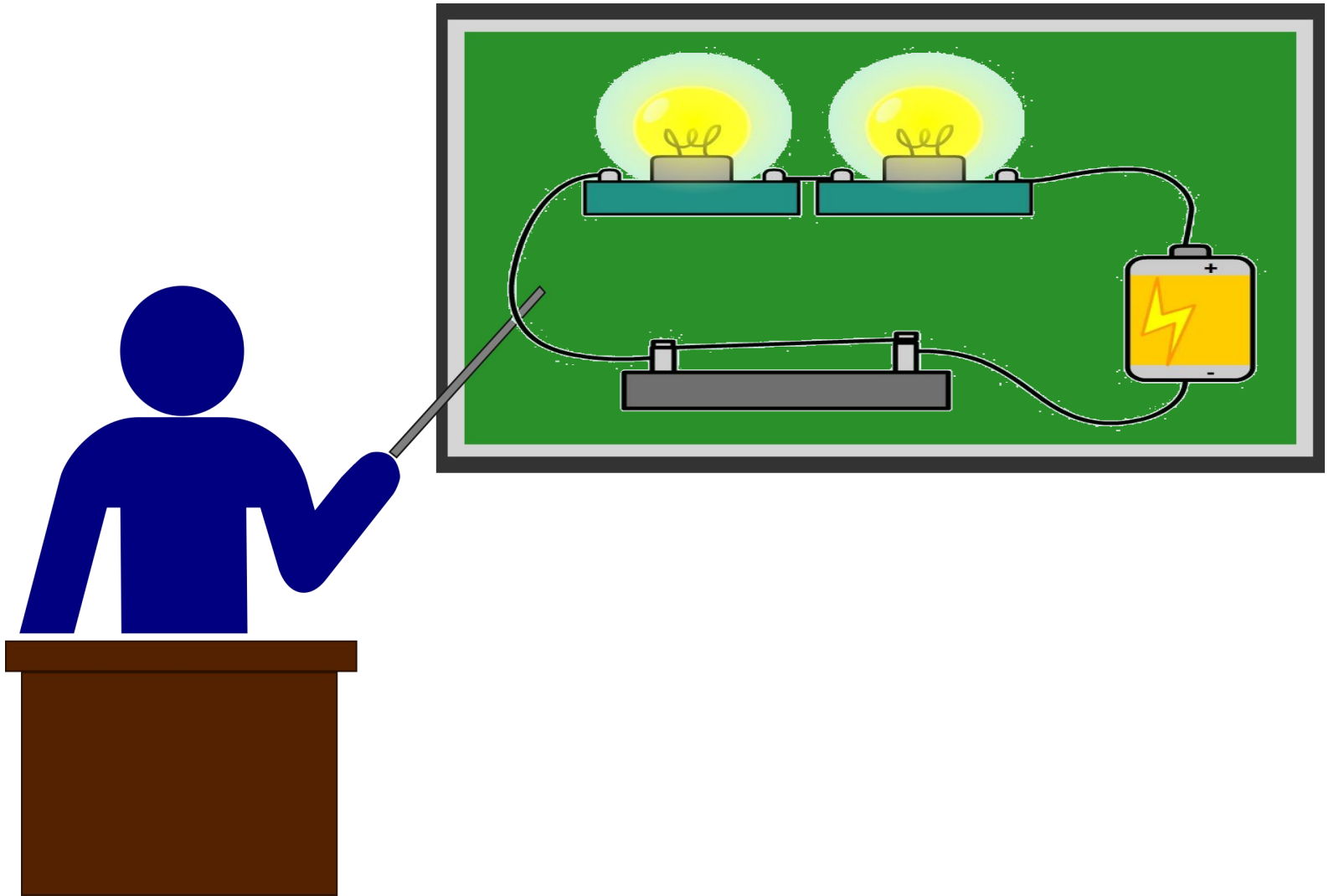
Now imagine your teacher wants *you* to make a circuit.



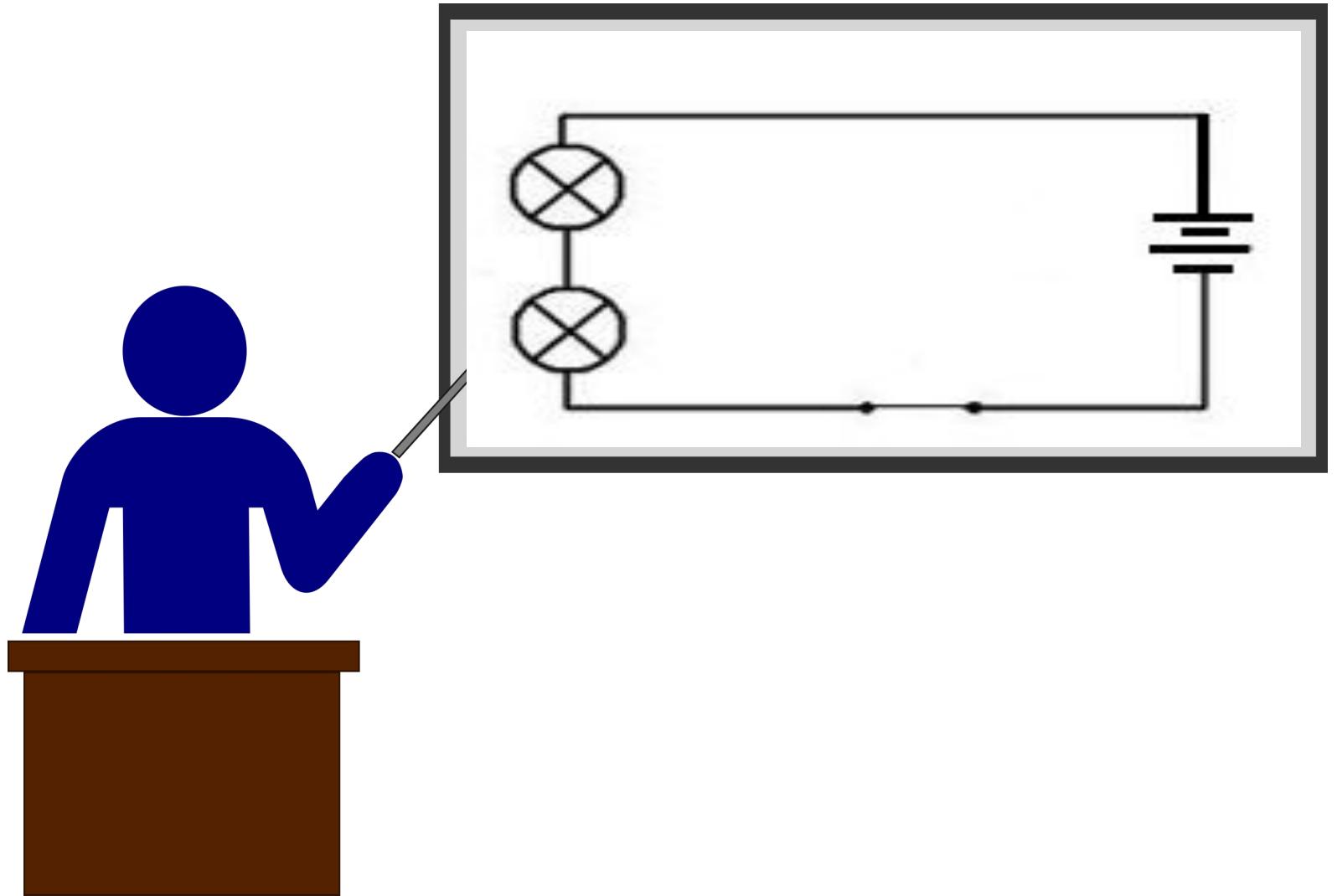
Your teacher would need to show you a diagram of what to make.



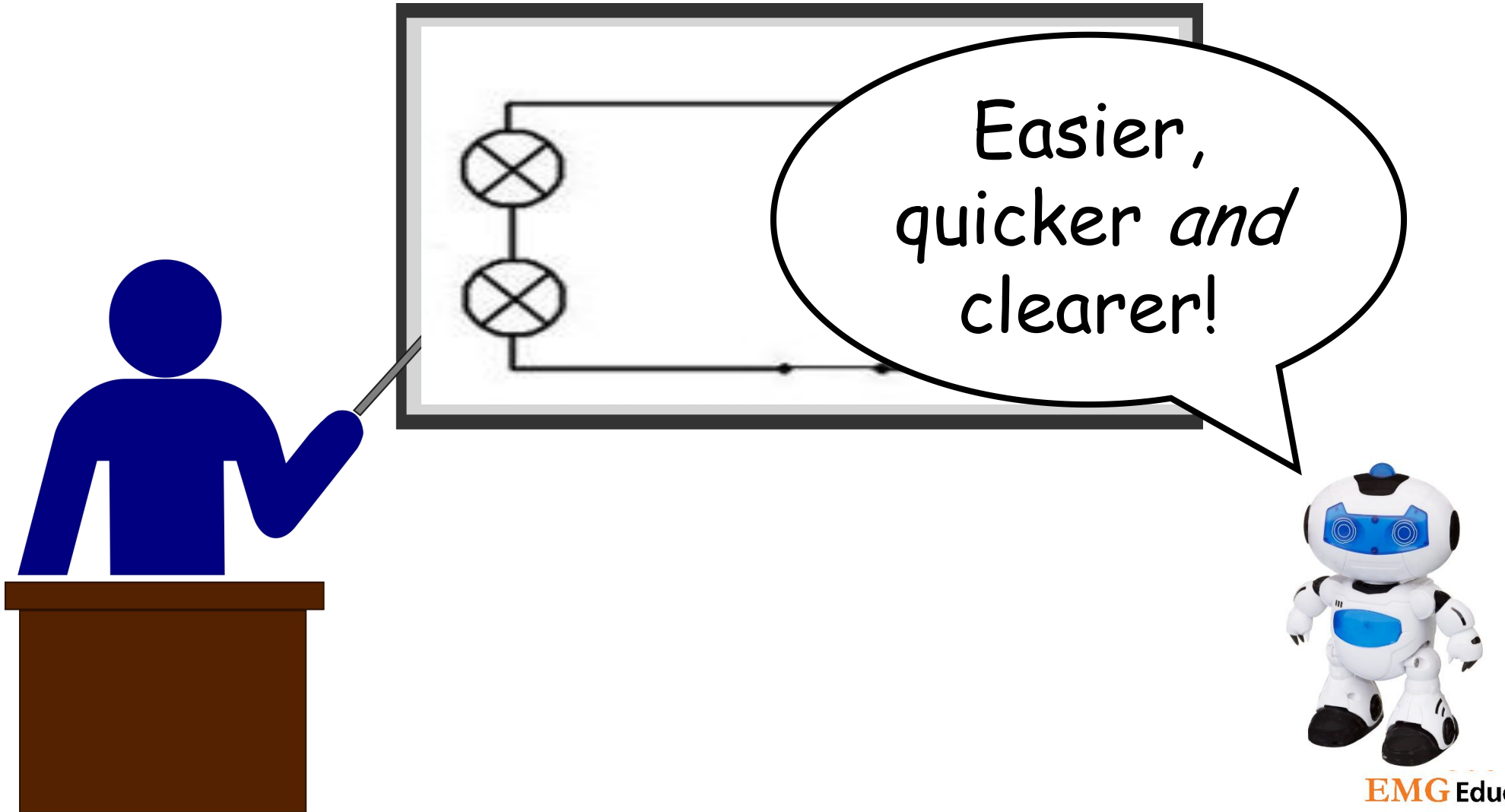
Does your teacher need to draw like this?



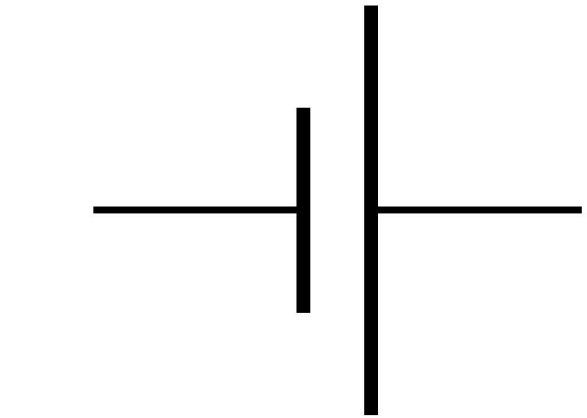
... or is it easier and quicker to draw like this?

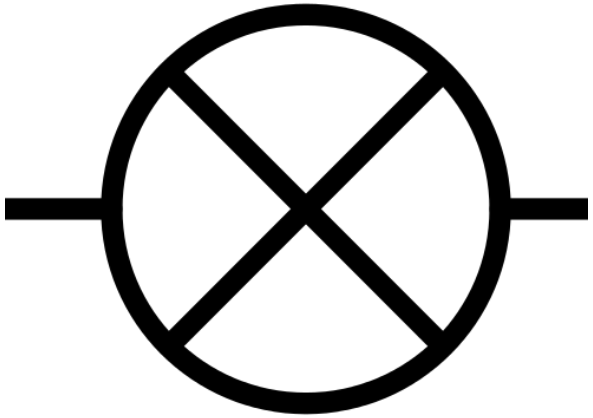


... or is it <u>easier</u> and <u>quicker</u> to draw like this?

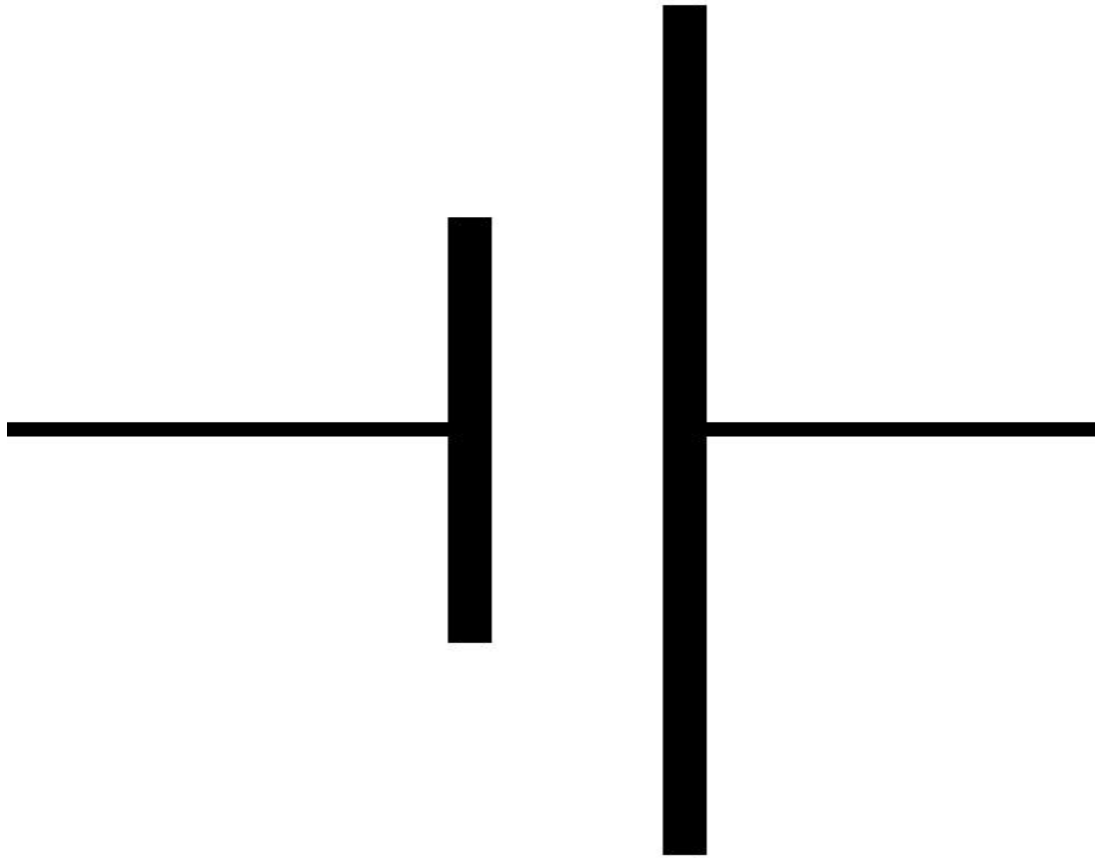


To draw circuits, we use symbols.

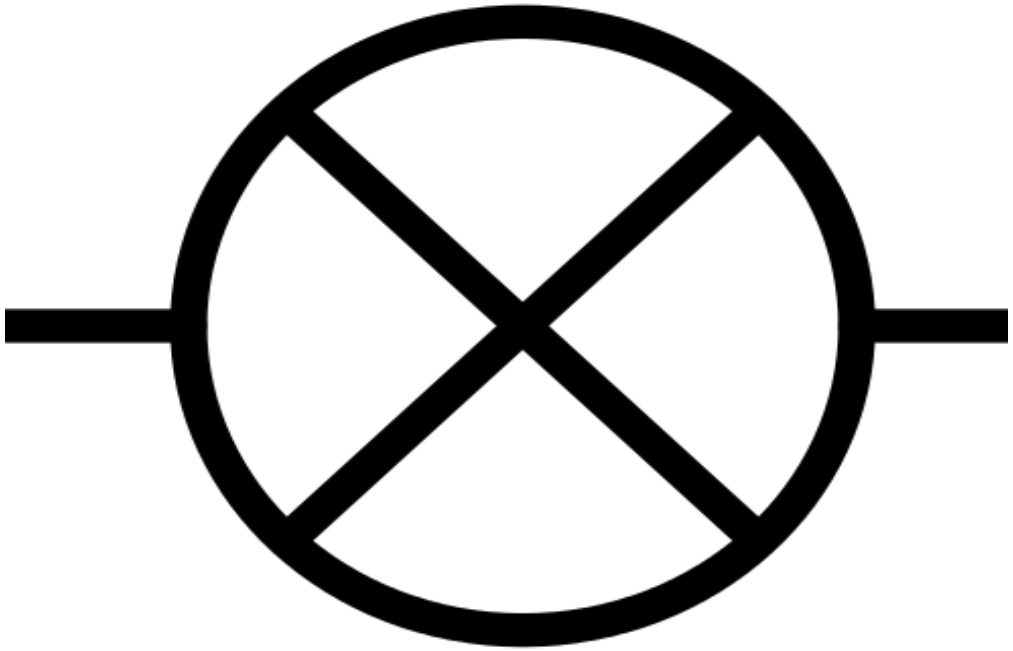




This is the symbol for a battery (cell).

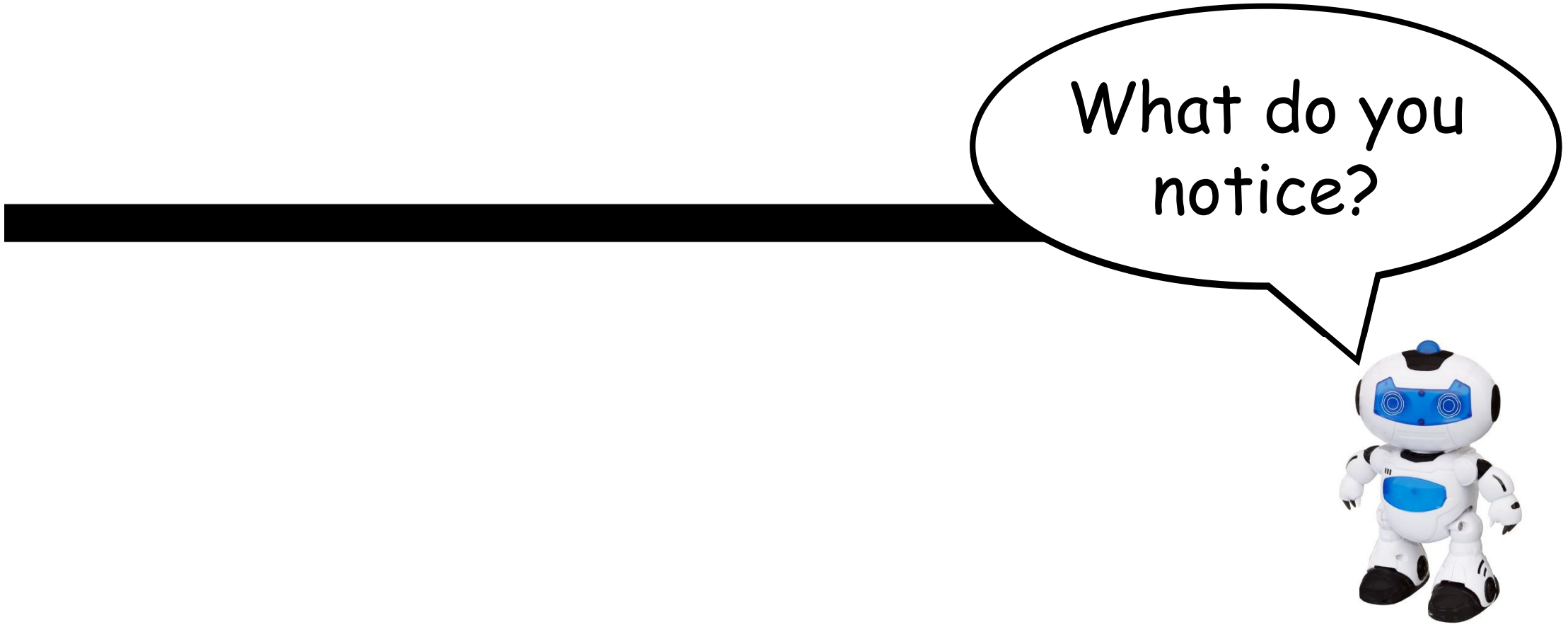


This is the symbol for a bulb (lamp).



This is the symbol for a wire.

This is the symbol for a wire.



This is the symbol for a wire.

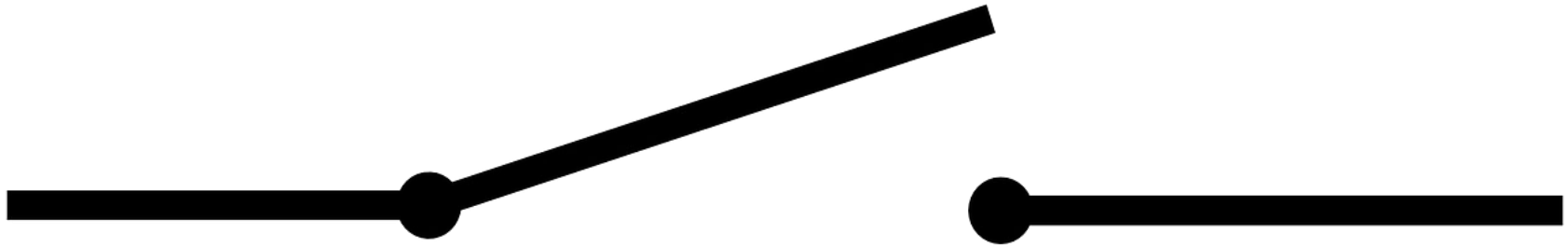
← *It's straight!* →

This is the symbol for a wire.

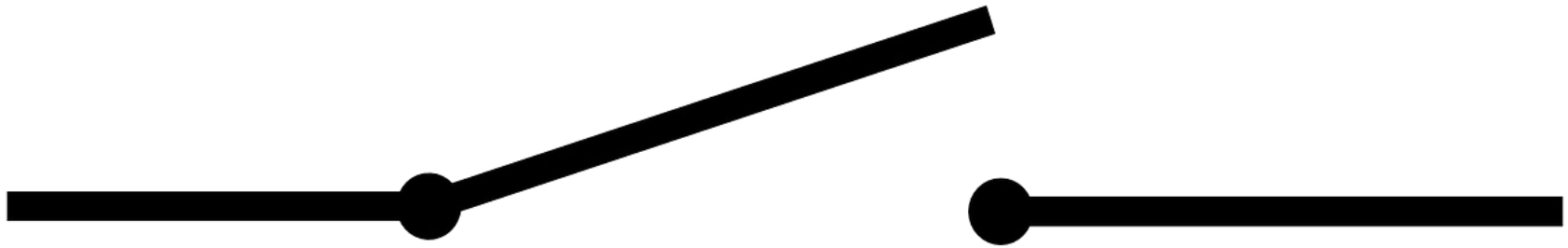
← *It's straight!* →

Use a *ruler*!

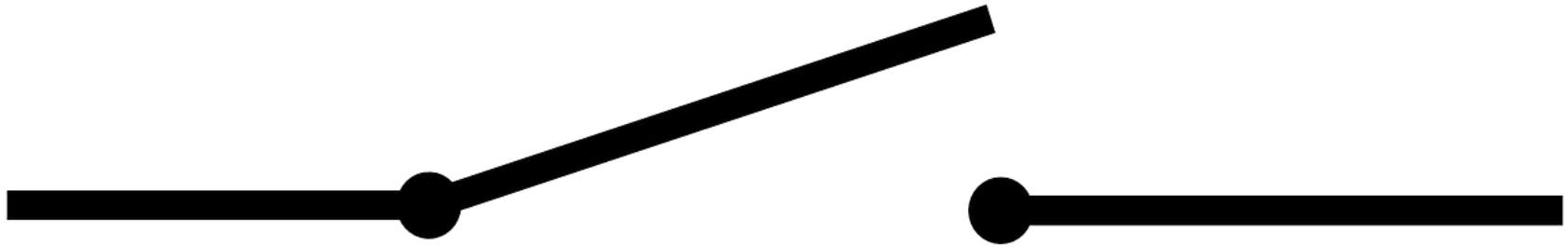
This is the symbol for a switch.



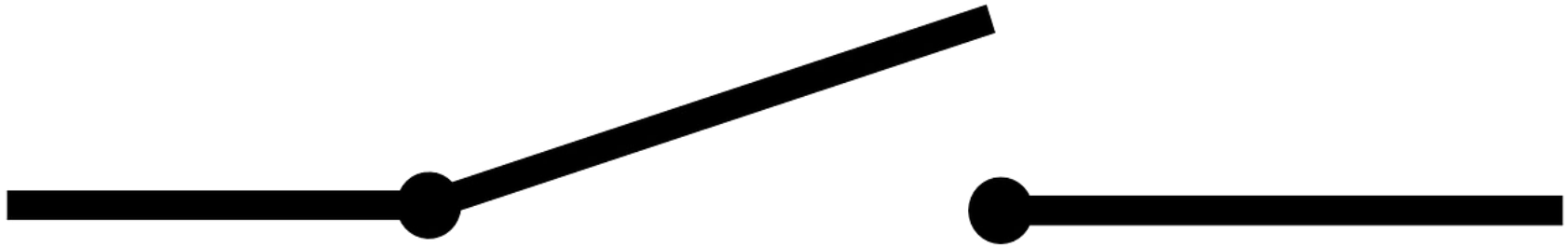
Here, the switch is open.



Because the switch is open,
electricity can't flow.



We can say the circuit is broken or incomplete.

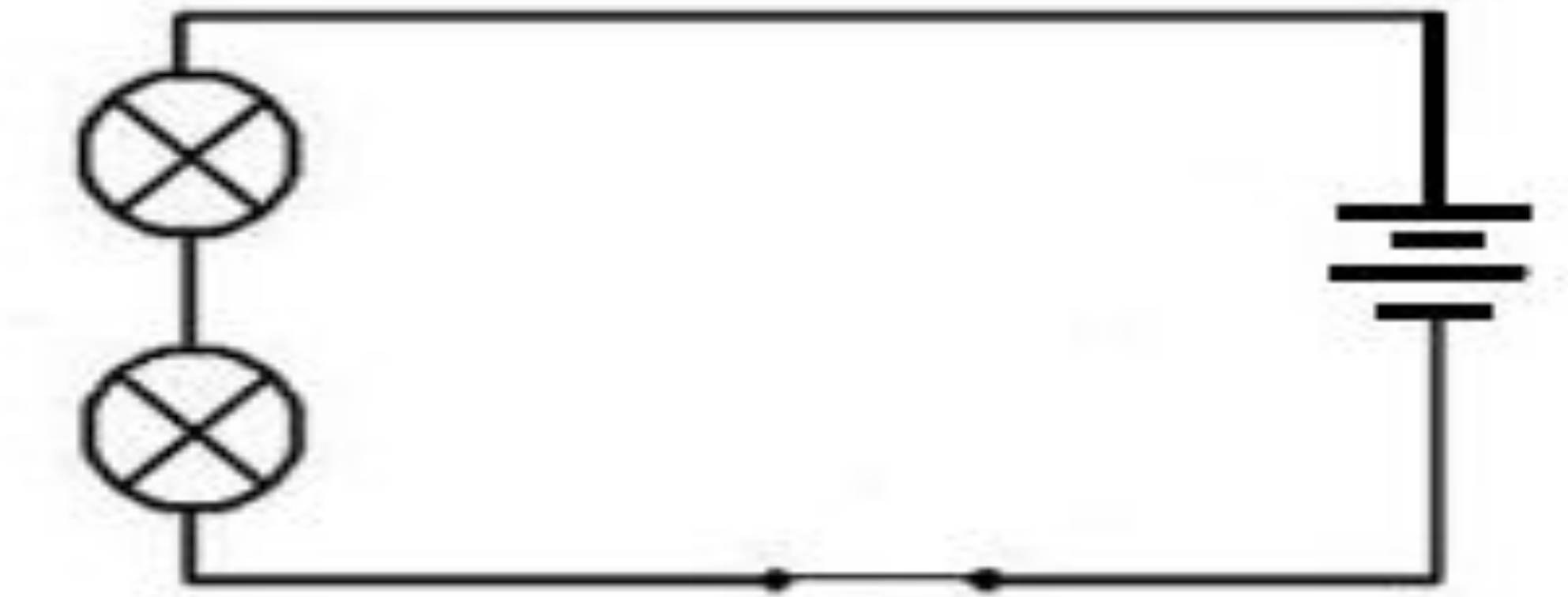


Now the switch is closed.

Because the switch is closed, electricity can flow.

We can say the circuit is complete.

Together, the components in a circuit may look like this.



What did we learn today?

- The **components** of a circuit (*review*).
- When a circuit is **complete** and when a circuit is **incomplete**.
- How to draw a **circuit diagram** using **symbols**.