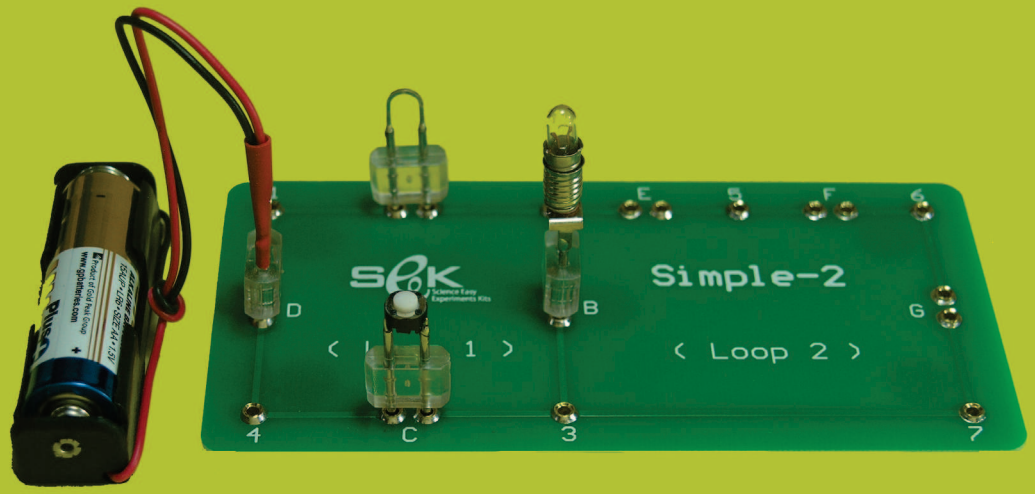
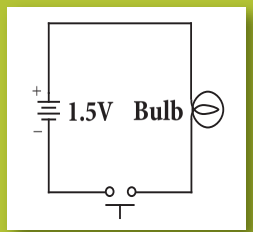
Experiment 1 Simple Circuits





Objectives

1. The student will determine the main components in a simple circuit.
2. The student will set up a simple electric circuit.
3. The student will differentiate between an open circuit and a closed circuit by experiment.
4. The student will determine and understand energy transformations in a simple circuit.

Apparatus

- Experiments Board (Simple-2)
- 1xAA Battery Holder w/AA battery
- 2xAA Battery Holder w/AA batteries
- bulb
- Buzzer
- Switch
- Jumpers

Procedure & Conclusions

1. Build a simple circuit as shown in the photo.

- The main components of a simple circuit are ……., ……., ……. and …….

2. Press the switch button and determine if the bulb glows.

- The closed circuit is an electric circuit through which an electric current … can / can't …

flow in an uninterrupted path.

- The open circuit is an incomplete electric circuit in which … an electric current flows / … no electric current flows.
- You can test the above circuit for the presence of current through observing ……
- The function of the switch in the electric circuit is to … open / close … the circuit.
- When we press the switch button, the electric circuit becomes … closed / open …, and when we release the switch button the electric circuit becomes … closed / open ….

3. Remove the jumper at the pair (A) then press the switch button and see if the bulb glows.

- When you remove the jumper at the pair (A) the bulb doesn't glow because the electric circuit becomes … closed / open …

4. Put back the jumper at the pair (A)
5. Use 2xAA battery holder instead of 1xAA battery holder to connect 3V at the pair (D), press the switch button and see if the bulb glows, compare this result with the result you got in step 2

- As we increase the voltage applied to the above closed electric circuit, the bulb gets … brighter / fainter …

6. Invert the polarity of the voltage source in the above electric circuit through reversing

the connection wire of the 2xAA battery holder at the pair (D).

- Inverting the polarity of the voltage source in the above closed electric circuit … affects / doesn't affect … the function of the bulb.
- In this circuit, you have two elements, the first one is …….. which is considered as the power source, and the second element is …….. which is considered as the power consumer.
- The light bulb changes the ..... energy into ..... energy and ..... energy.

7. Insert the buzzer at the pair (B) instead of the bulb then press the switch button.
8. Invert the buzzer at the pair (B), again press the switch button, what you get?

- Inverting the polarity of the voltage source in the above closed electric circuit … affects / doesn't affect … the function of the buzzer.
- This electric circuit is an example of transformation of ..... energy to ..... energy.

Discussion

1. Why is the bulb made up of thin glass?