

Know your switches



Background knowledge

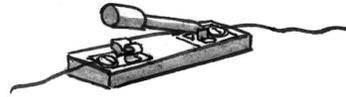
Electricity will only flow through a circuit that has no gaps in it. A switch is a useful device because it allows you to open or close a circuit. When a circuit is open, electricity cannot flow through the circuit to run a load in it. When a switch is turned on, it closes the circuit so that loads in the circuit can operate. Loads such as light bulbs and appliances in your home are turned on and off with switches.

This is the symbol for an open switch.  It is off.
This is the symbol for a closed switch.  It is on.

There are different types of switches.



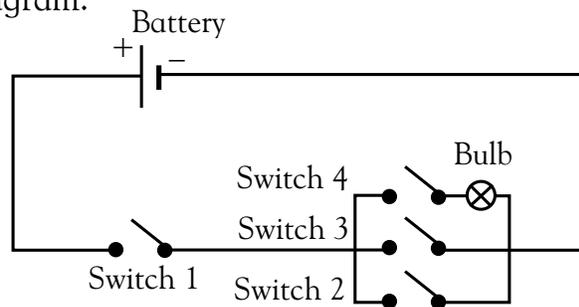
This switch is closed by pressing down the metal bar



This one is closed by turning the lever and slotting it into the clip.

Science activity

Look at this circuit diagram.

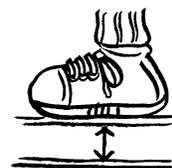


What is the least number of switches you would need to light up the bulb ?

Identify the switches you would need.

Science investigation

One type of switch is called a *pressure switch*. You have to press the switch to close it. Design and build your own pressure switch and then connect it to a circuit with a load on it, such as a buzzer or light bulb. Some pressure switches work by stepping on them. Can you name any common pressure switches in your home?



Know your switches

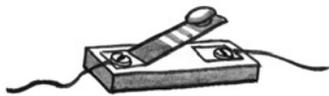


Background knowledge

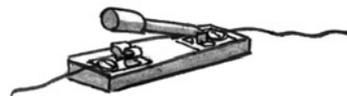
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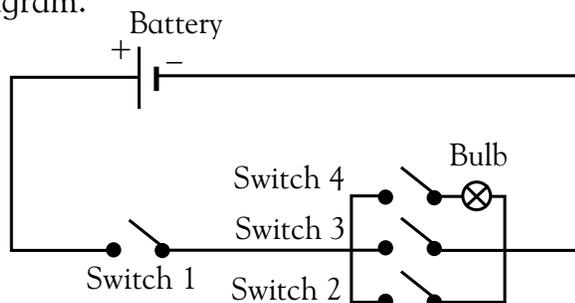
This switch is closed by pressing down the metal bar



This one is closed by turning the lever and slotting it into the clip.

Science activity

Look at this circuit diagram.



What is the least number of switches you would need to light up the bulb ? *Two switches*

Identify the switches you would need. *Switches 1 and 4*

Science investigation

Homes have many pressure switches, such as the doorbell. Remind the child that switches must be made of metal. One simple pressure switch is made with cotton balls separating two metal strips. The circuit is closed when the metal strips touch.

