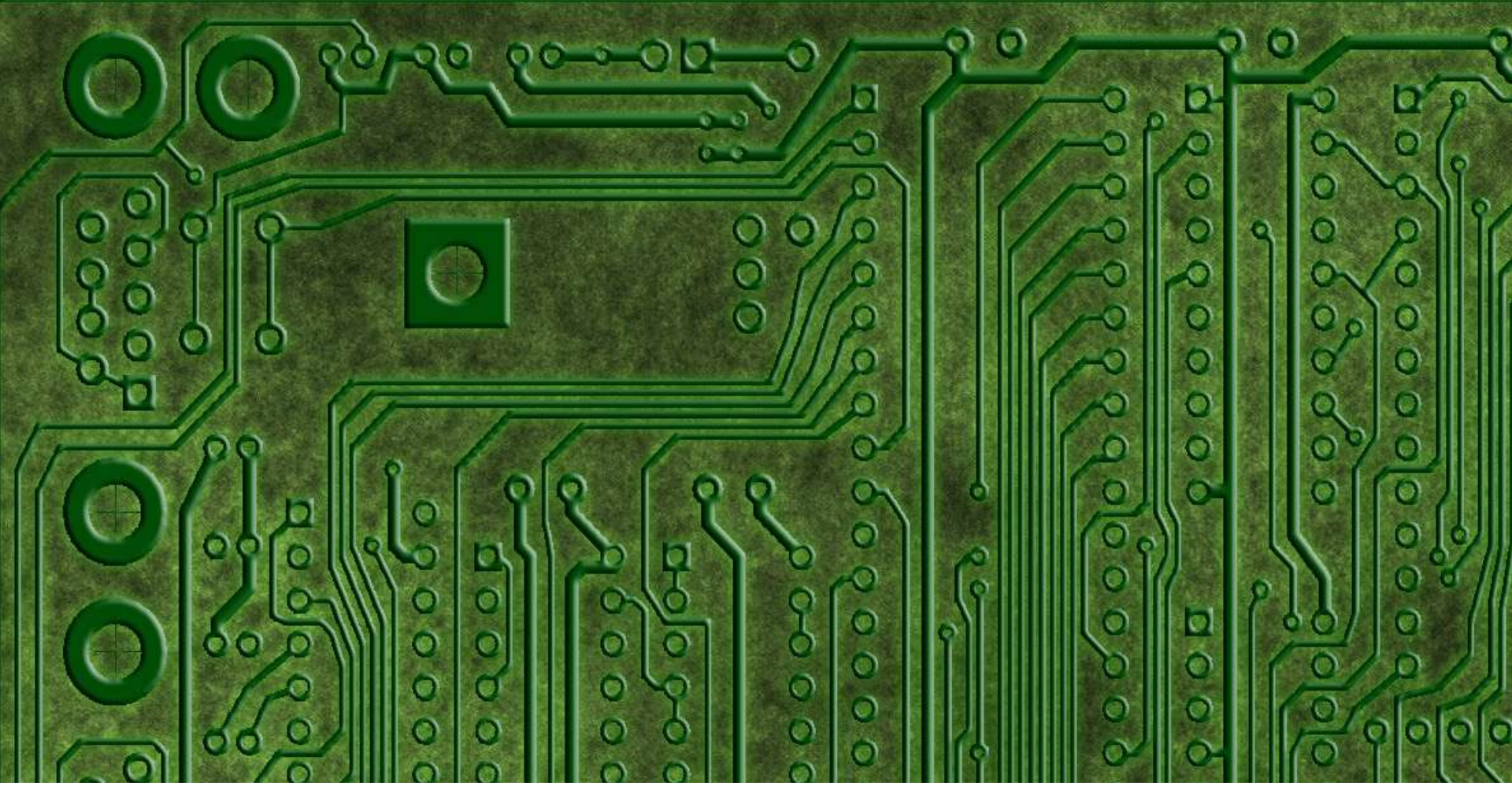


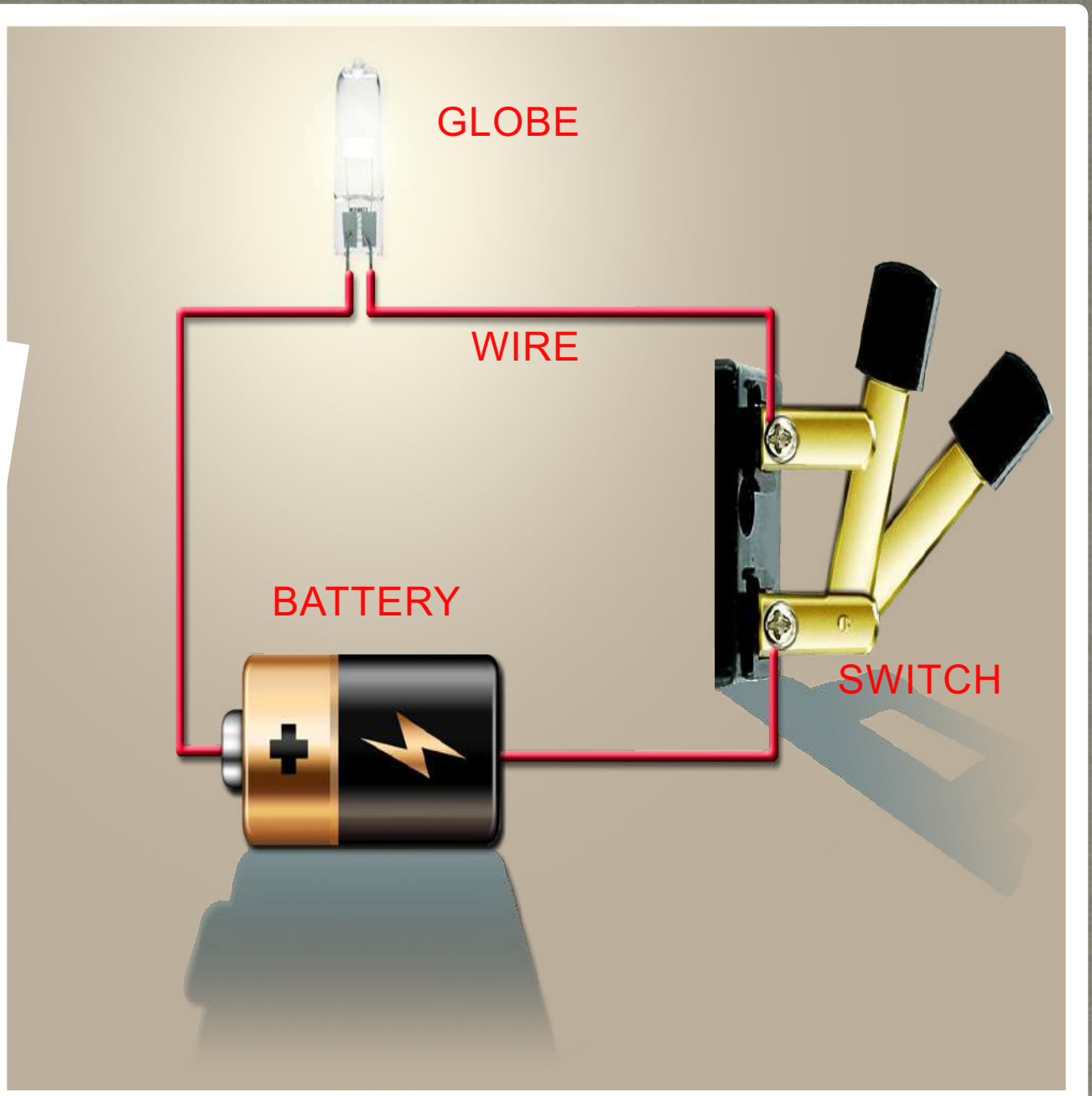
Introduction to
ELECTRICAL CIRCUIT DIAGRAMS

SciencePoint

A SIMPLE ELECTRICAL CIRCUIT

Teacher Guide

Click on the light switch to turn the globe on and off.



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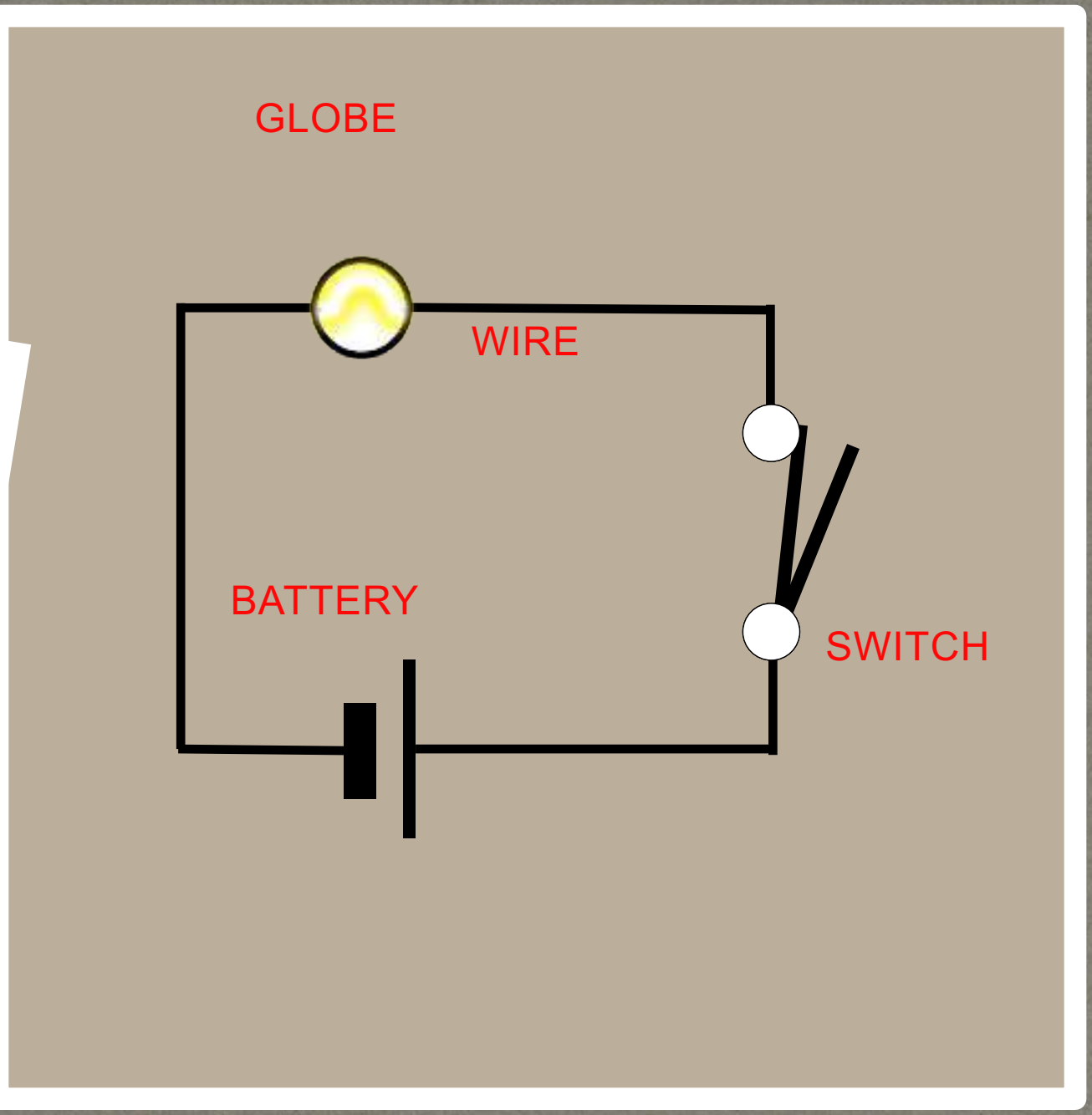
A SIMPLE ELECTRICAL CIRCUIT

Teacher Guide

Click on the round white terminals of the switch or the black bar of the switch to light switch to turn the globe on and off.



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COMMON ELECTRICAL SYMBOLS

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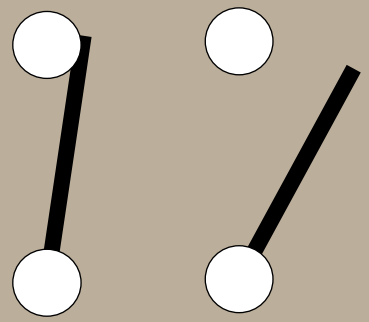
Click to display each component.

GLOBE

BATTERY x1

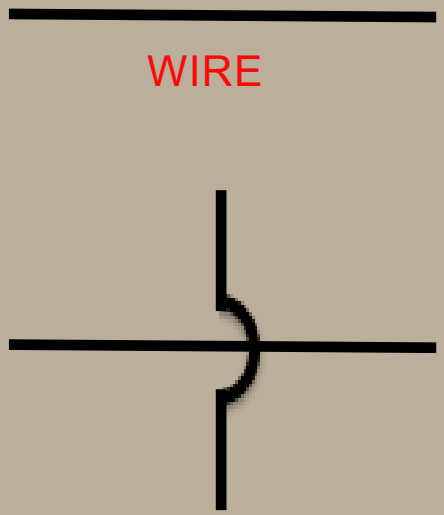
BATTERIES x2

BATTERIES x3



SWITCH CLOSED (ON)

SWITCH OPEN (OFF)



WIRE

WIRES CROSSING BUT NOT CONNECTED

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COMMON ELECTRICAL SYMBOLS

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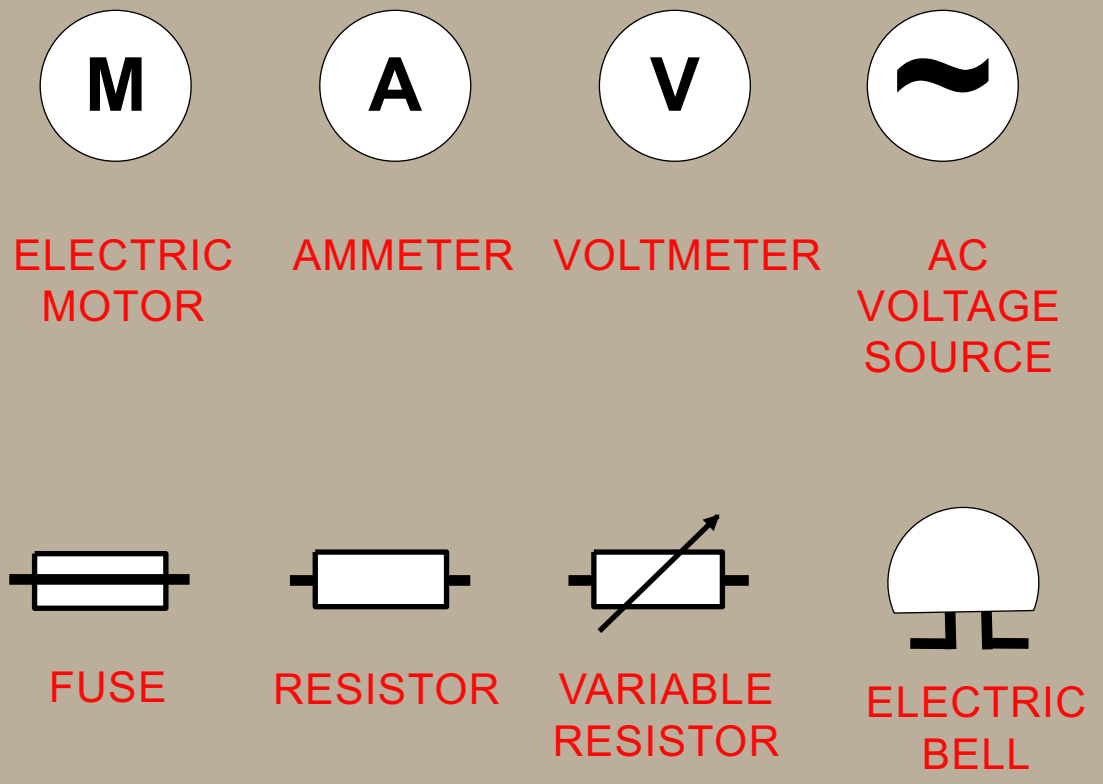
This is a static slide.
There are no animations.



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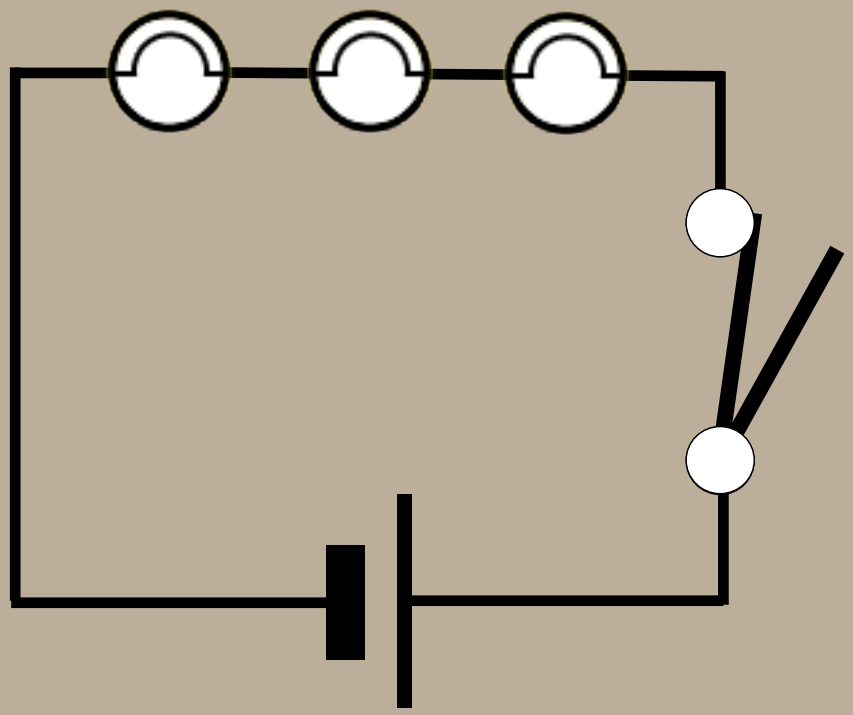
ELECTRICAL CIRCUITS
SERIES

Teacher Guide

Click on the light switch to turn the globe on and off.

Click on page to display text.



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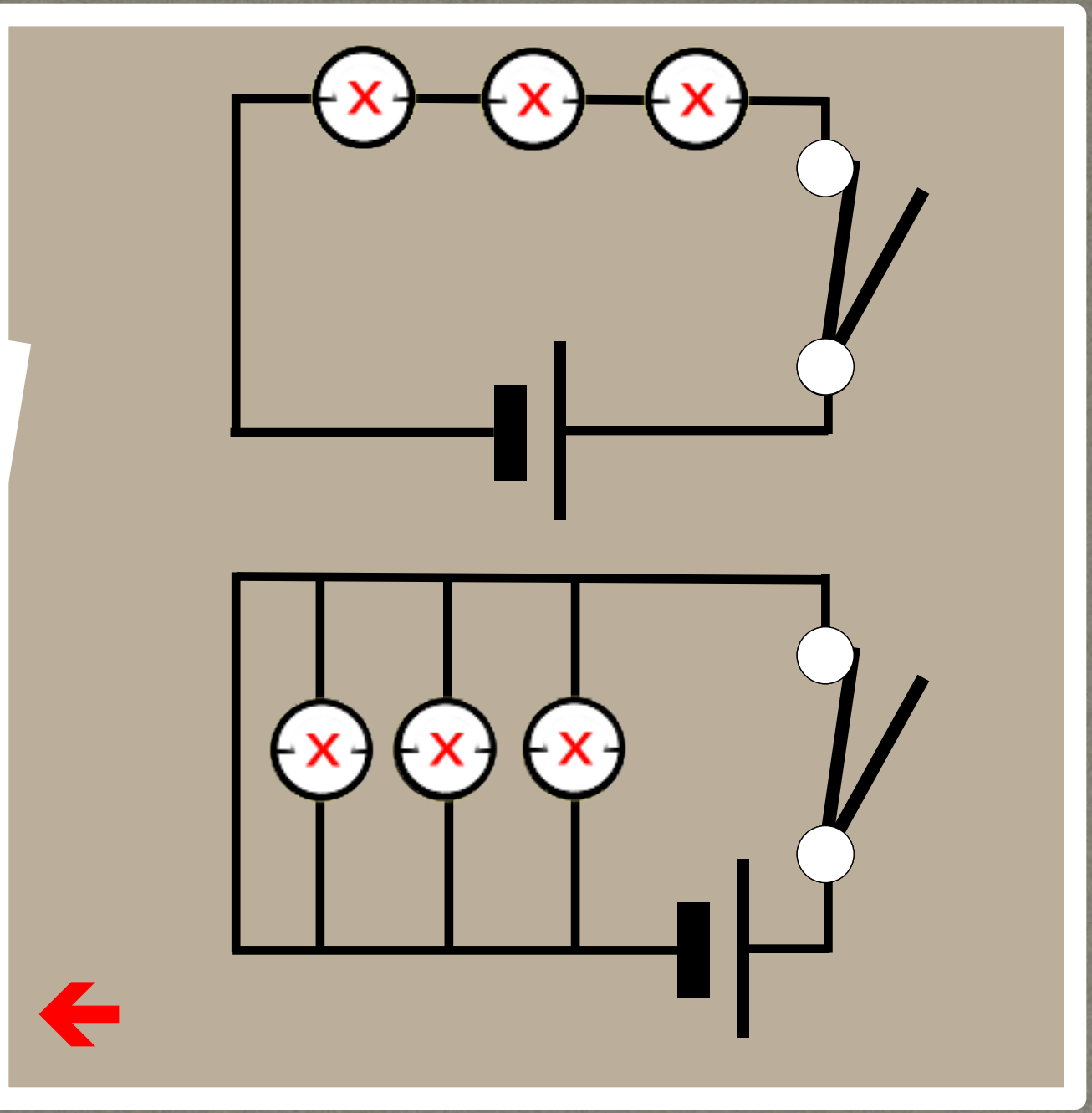
DIFFERENCES BETWEEN SERIES & PARALLEL CIRCUITS

Teacher Guide

Click on the light switches to turn the globes on and off.
Note the relative brightness of globes.
Click on an **illuminated** globe to “break” it. Note the effect.
Click red arrow to reset (repair globes).
Click elsewhere to proceed to next slide.



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DIFFERENCES BETWEEN SERIES & PARALLEL CIRCUITS

Teacher Guide

Click to display textboxes.

SERIES	PARALLEL
If one globe burns out or is removed, all globes will stop working.	If one globe burns out or is removed, all other globes will continue working.
The voltage is shared between each globe, resulting in reduced brightness.	Each globe receives the full voltage of the source, resulting in all globes burning at the same brightness regardless of the number of globes.
Serial circuits are cheap and easy to construct.	Parallel circuits require more effort to construct.

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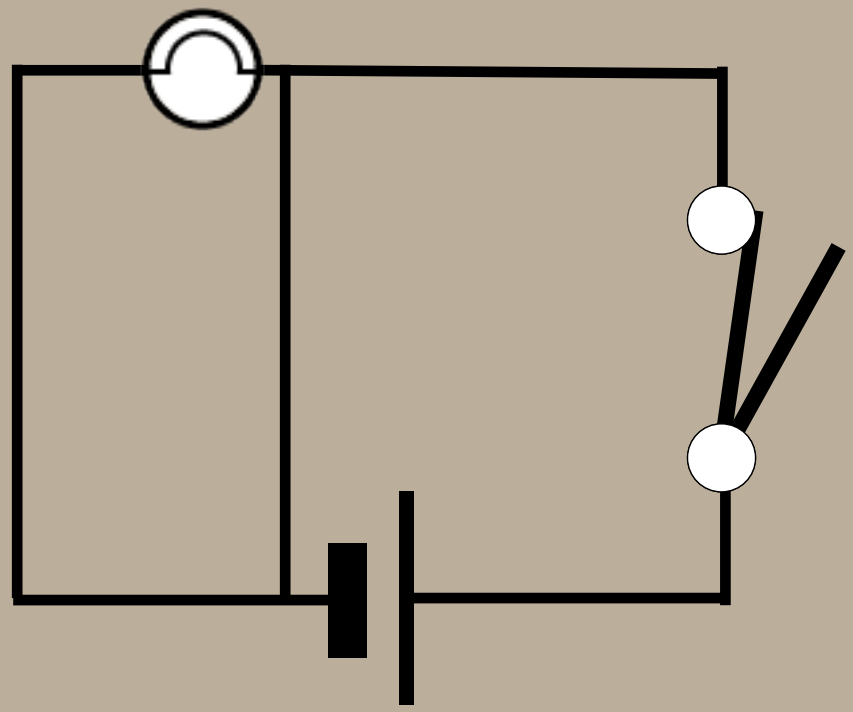
PREDICT WHAT WILL HAPPEN WHEN THE SWITCH IS

Teacher Guide

Click on the light switches to turn the globe on.

Nothing should happen.

Discuss short circuits.



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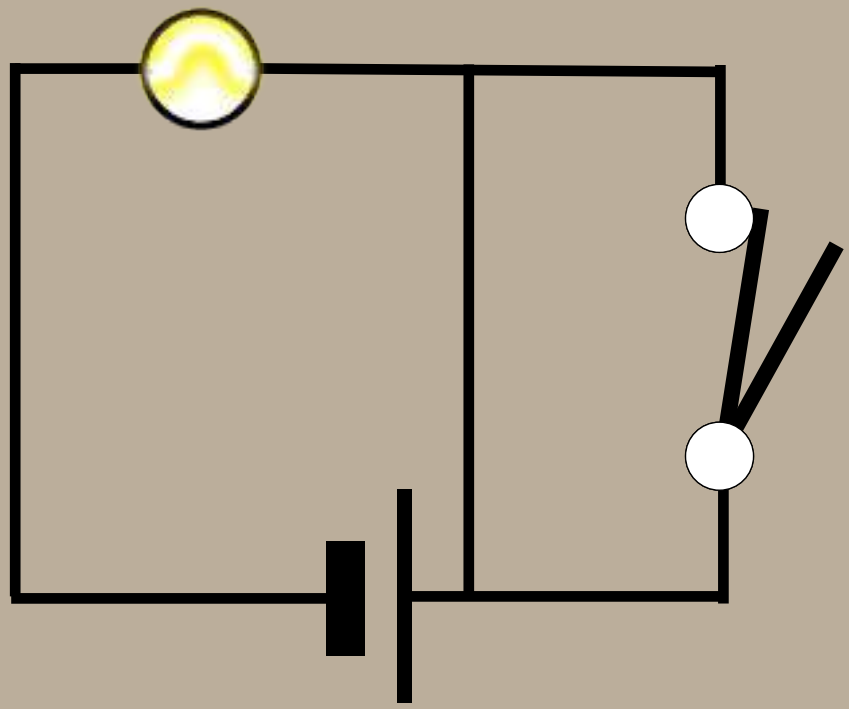
PREDICT WHAT WILL HAPPEN WHEN THE SWITCH IS

Teacher Guide

Click on the light switches to turn the globe off.

Nothing should happen.

on.



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WHERE WOULD YOU FIND THIS CIRCUIT?

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Click on the light switches to turn the globes on and off. Discuss household lighting circuits. Click elsewhere to proceed to next slide.

circuit with individual switches for each light.

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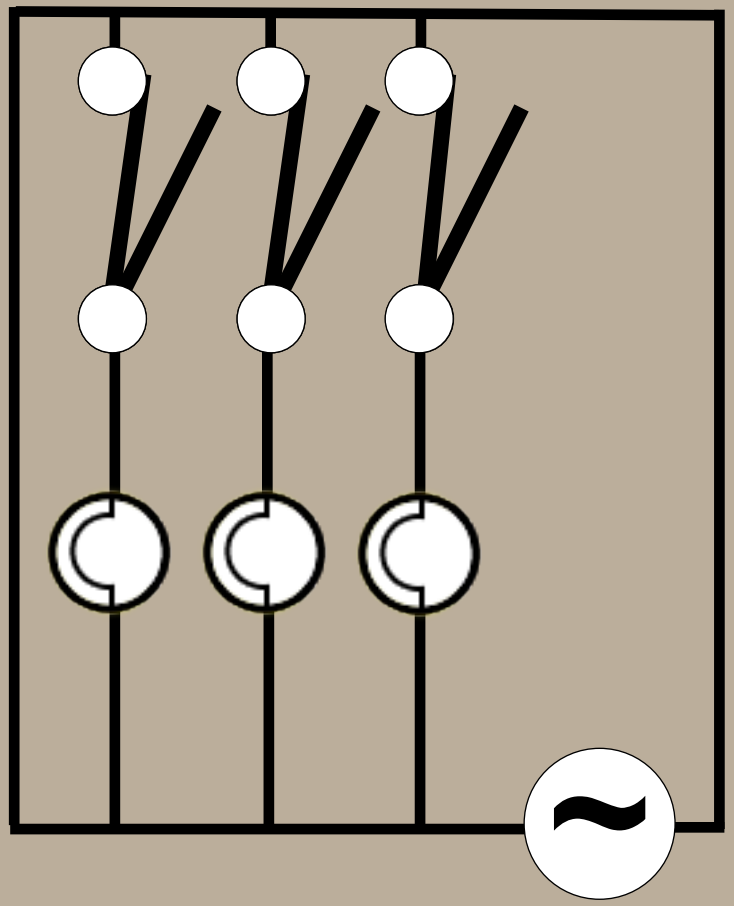
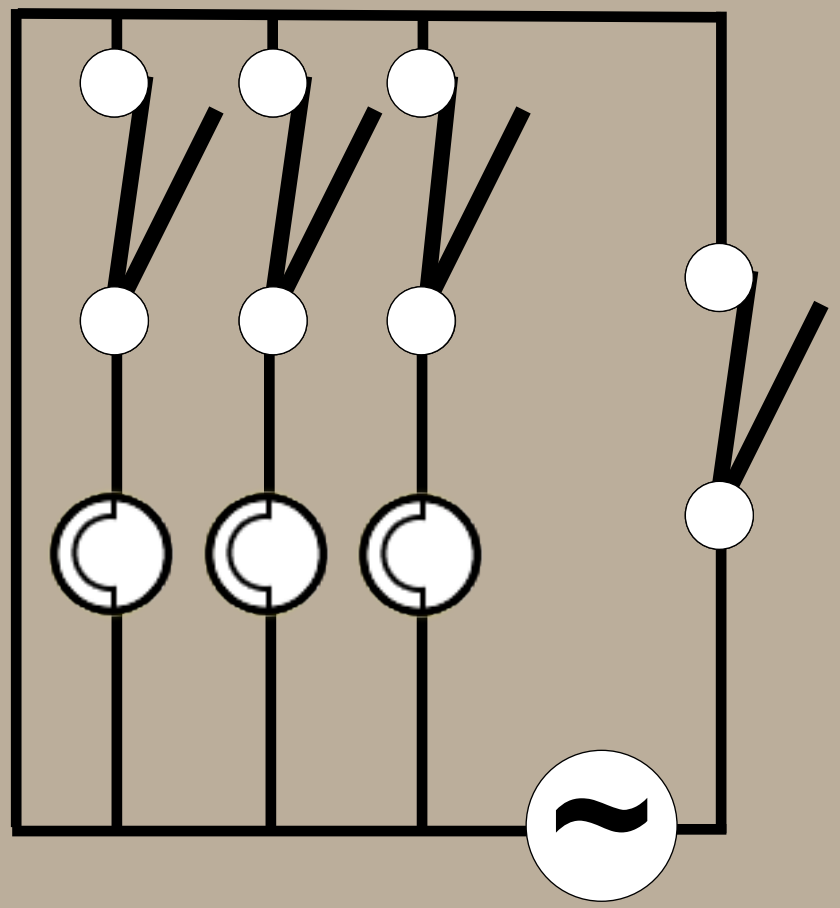


WHERE WOULD YOU FIND THIS CIRCUIT?

Teacher Guide

Click on the light switches to turn the globes on and off.
Safety switch will override all other switches.



but a safety switch can shut off all devices at once.

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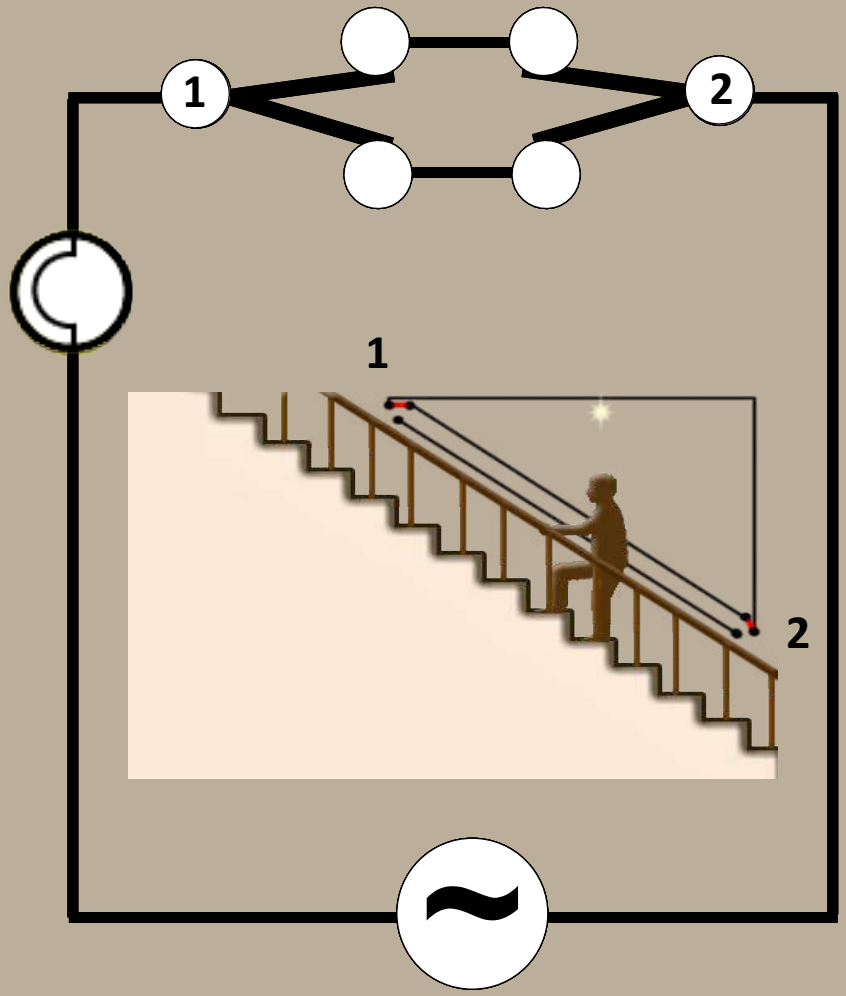
WHERE WOULD YOU FIND THIS CIRCUIT?

Teacher Guide

Click on the AC power source symbol to cycle through switching scenarios.
Click on slide to display image of staircase.
Discuss 2-way switches.

the stairs.



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CHRISTMAS TREE LIGHTS SERIES OR PARALLEL

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Click to fade Christmas tree to reveal series circuit.

Click to show parallel circuit.

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CHRISTMAS TREE LIGHTS SERIES

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Click on slide to “break” a globe.
Note all globes do not work.

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CHRISTMAS TREE LIGHTS PARALLEL

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Repeatedly click on the slide to break globes.
Note all other globes remain working.
Repeat until all globes are off.

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