

Name: _____

Class: _____

Grade 9 Science **Parallel and Series Circuit Lab #1**

Outcome Covered

- rephrase questions in a testable form related to series and parallel circuits

Purpose: For this lab activity you will use an online circuit simulator to practice building series and parallel circuits and investigate the similarities and differences between them.

Directions

Go to Mr Fifield's Corner Page <http://www.mrfifieldcorner.weebly.com>

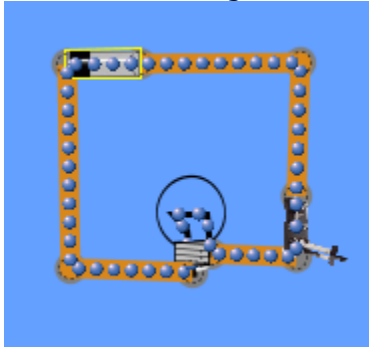
Then on "Circuit Construction"

When the page open click on "Run Now" to open the simulator.

PART A – SERIES CIRCUITS

Step 1

Build the following Series Circuit



Series Circuit
#1 – One Bulb

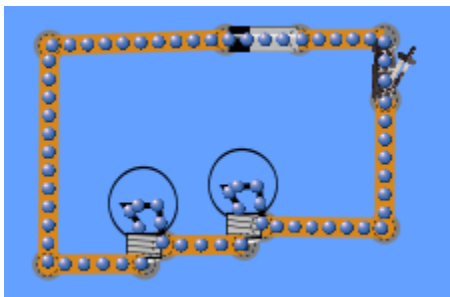
* Double check that the Battery Voltage is set to 9V and the Light Bulb to 10 Ω

Step 2

Turn the switch to the on position and observe the brightness of the light bulb.

Step 3

Build another series circuit, this one containing two bulbs. **Do not delete the first circuit.** You may have to move your first circuit to the side so you have room for the next circuit.



Series Circuit #2 –
Two Bulbs

Step 4

Observe the brightness of the two bulbs, and compare them to the brightness of the bulb in series circuit #1.

Step 5

Build another series circuit, this one containing three bulbs. **Do not delete the first or second circuits.** You may have to change the size to small on the right hand side of the simulator.

Observe the brightness of the three bulbs, and compare them to the brightness of the bulbs in series circuit #1 and #2.

Question #1

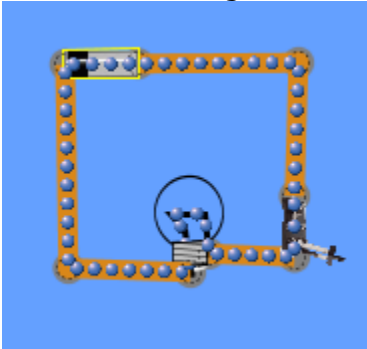
Write a statement comparing the bulb brightness in series circuits to the number of light bulbs in the circuit.

PART B – PARALLEL CIRCUITS

*** Reset The Simulator before beginning this section**

Step 1

Build the following Parallel Circuit



Parallel Circuit
#1 – One Bulb

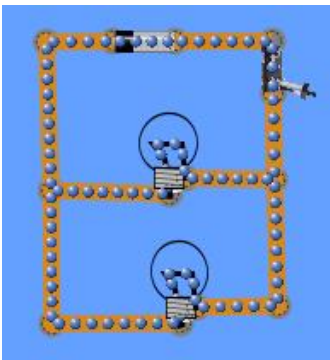
* Double check that the Battery Voltage is set to 9V and the Light Bulb to 10V

Step 2

Turn the switch to the on position and observe the brightness of the light bulb.

Step 3

Build another parallel circuit, this one containing two bulbs. **Do not delete the first circuit.** You may have to move your first circuit to the side so you have room for the next circuit.



Parallel Circuit #2
– Two Bulbs

Step 4

Observe the brightness of the two bulbs, and compare them to the brightness of the bulb in parallel circuit #1.

Step 5

Build another series circuit, this one containing three bulbs. **Do not delete the first or second circuits.** You may have to change the size to small on the right hand side of the simulator.

Observe the brightness of the three bulbs, and compare them to the brightness of the bulbs in parallel circuit #1 and #2

Question #2

Write a statement comparing the bulb brightness in parallel circuits to the number of light bulbs in the circuit.

PART C – INVESTIGATING CIRCUITS

Design your own investigation. Think of a question that you have about circuits, build a circuit or circuits on the simulator that investigates this question and record your findings.

1) My question is:

2) The circuit(s) I built looks like this.

3) I found out that: