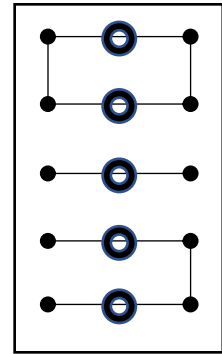


Materials:

- circuit board (wires should not be removed, only added)
- three 10 ohm (Ω) lamps,
- 6 alligator clip wires,
- three D cell (9V) batteries and holders,
- multimeter (x2 if possible) – voltmeter and ammeter

Board orientation:

- Parallel Section
- Flexible lamp
- Series Section



Circuit	Battery # and Voltage	Current (Amperes)	Light Description (qualitative)	Voltage Drop Lamp #1	Voltage Drop Lamp #2	Voltage Drop Lamp #3
Series 1 lamp	1 cell					
	2 cell					
	3 cell					
Series 2 lamps	1 cell					
	2 cell					
	3 cell					
Series 3 lamps	1 cell					
	2 cell					
	3 cell					

Observations and Notes from Series Circuits:

Circuit	Battery # and Voltage	Current (Amperes)	Light Description (qualitative)	Voltage Drop Lamp #1	Voltage Drop Lamp #2	Voltage Drop Lamp #3
Parallel 2 lamps	1 cell					
	2 cell					
	3 cell					
	1 cell					
	2 cell					
	3 cell					

Observations and Notes from Parallel Circuits:

Was there a connection between the current and the brightness of the light(s)?

Was there a connection between the voltage and the brightness of the light(s)?

Was there a connection between the voltage drops over each lamp and the initial battery voltage? Comment on any similarities and differences.