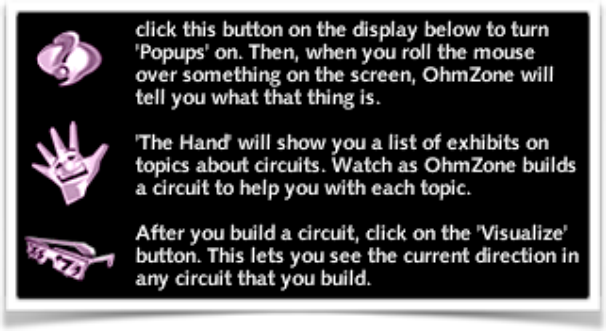
Electric Circuits

Follow these directions to go with the OhmZone web site.

http://www.article19.com/shockwave/oz.htm



For each part of the lab you should use these three tools to help you with the circuits.

You will have many components to choose from for your circuits. Each will start with a 10V battery. Also included are;

two 100 ohm resistors (blue)

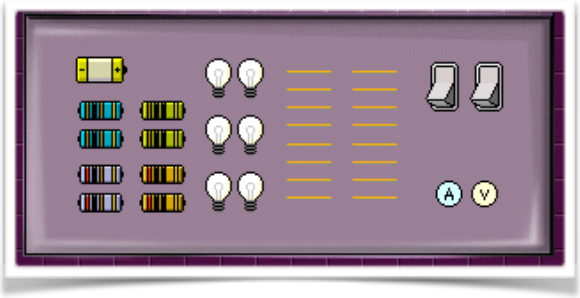
two 200 ohm resistors (violet)

two 10 ohm resistors (green)

two 20 ohm resistors (orange)

six 10 ohm light bulbs

an ammeter and a a voltmeter



As in a real circuit, the ammeter will measure the current when it is placed in series with a component.

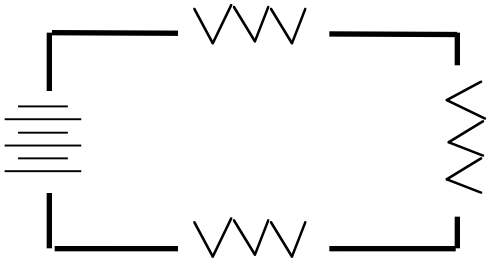
The voltmeter measures the voltage difference from one side of a component to another.

The values for each are above the circuit board.

In each part of the lab, use the voltmeter, and the ammeter to complete the table for the circuit. Calculate the power in each component using **P= IV**

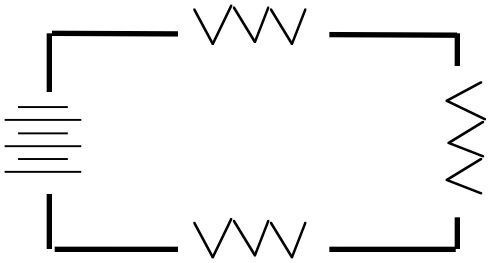
Part 1 - Series Circuits

Take a minute to get a hand with your circuit... click on the hand, and follow the tutorial for “Building a series circuit” and “ Current in a series circuit”. When you understand series circuits, complete your own circuit board to match the schematic.



Show the path of the current

#1	V	I	R	P
			light bulb (10)	
			light bulb (10)	
			light bulb (10)	
Total Circuit	**10 V**			



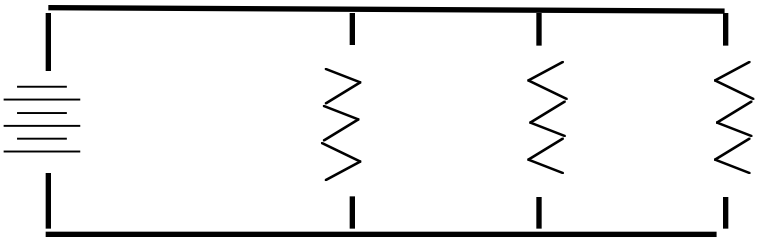
#2	V	I	R	P
			20 ohm	
			100 ohm	
			200 ohm	
Total Circuit	**10 V**			

What did you observe about series circuits?

What can you say about the larger resistors in the second circuit?

Part 2 - Building a parallel circuit

Take a minute to get a hand with your circuit... click on the hand, and follow the tutorial for “Building a parallel circuit” and “ Current in a parallel circuit”. When you understand parallel circuits, complete your own circuit board to match the schematic.



Draw the path of the currents on the schematic

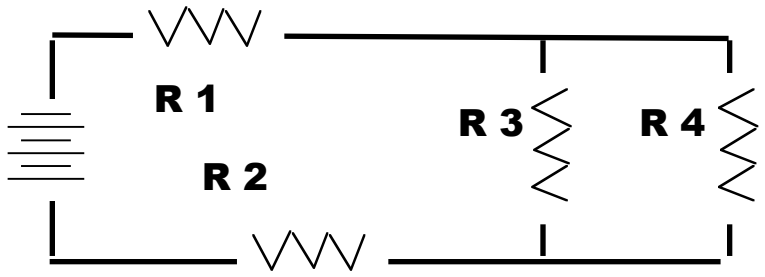
Circuit 3	V	I	R	P
			10 ohm bulb	
			10 ohm bulb	
			10 ohm bulb	
Total Circuit	**10 V**			

Circuit 4	V	I	R	P
			20 ohm	
			10 ohm	
			100 ohm	
Total Circuit	**10 V**			

In a parallel circuit, describe the current and power in the smaller resistor.

Part 3 - Building a combination circuit

Take a minute to get a hand with your circuit... click on the hand, and follow the tutorial for “Building a combination circuit”. When you understand combination circuits, complete your own circuit board to match the schematic.



Circuit 5	V	I	R	P
			20 ohm	
			10 ohm	
			100 ohm	
			100 ohm	
Total Circuit	10 V			

What can be said about the voltage for R3 and R4?

What did you observe to be different about the current in this circuit?