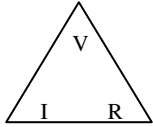


Name: \_\_\_\_\_ Date : \_\_\_\_\_

# Ohm's Law

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First published by German physicist, Georg Simon Ohm (1787-1854), (*his name is spelled correctly here... there is no final "e" in "Georg."*) in 1827, this law shows the mathematical relationship between **voltage**, **current**, and **resistance** in a circuit.

The concepts:	<i>voltage = current × resistance</i>
The abbreviations:	$V = I \times R$ 
The SI Units:	volts (V) = amperes (A) × ohms (Ω)

## Ohm's Law in Series Circuits

Ohm's Law applies to each device on a circuit as well as to the circuit as a whole.

Remember: the current throughout a series circuit is the same. This includes for each device.

### ***Using Ohm's Law with a Single Device***

With a single device on a series circuit, Ohm's law will make use of the voltage drop of the device, the current flowing through the device, the device's resistance.

$$V_{drop} = I \times R_{device}$$

### ***Using Ohm's Law with a Whole Series Circuit***

With the whole series circuit, Ohm's law will make use of the total circuit voltage, the current flowing through the circuit, and the total resistance of the circuit.

$$V_{total} = I \times R_{total}$$