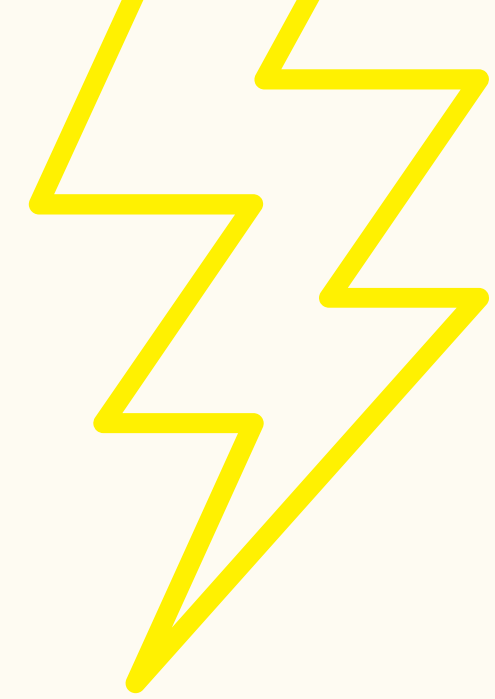
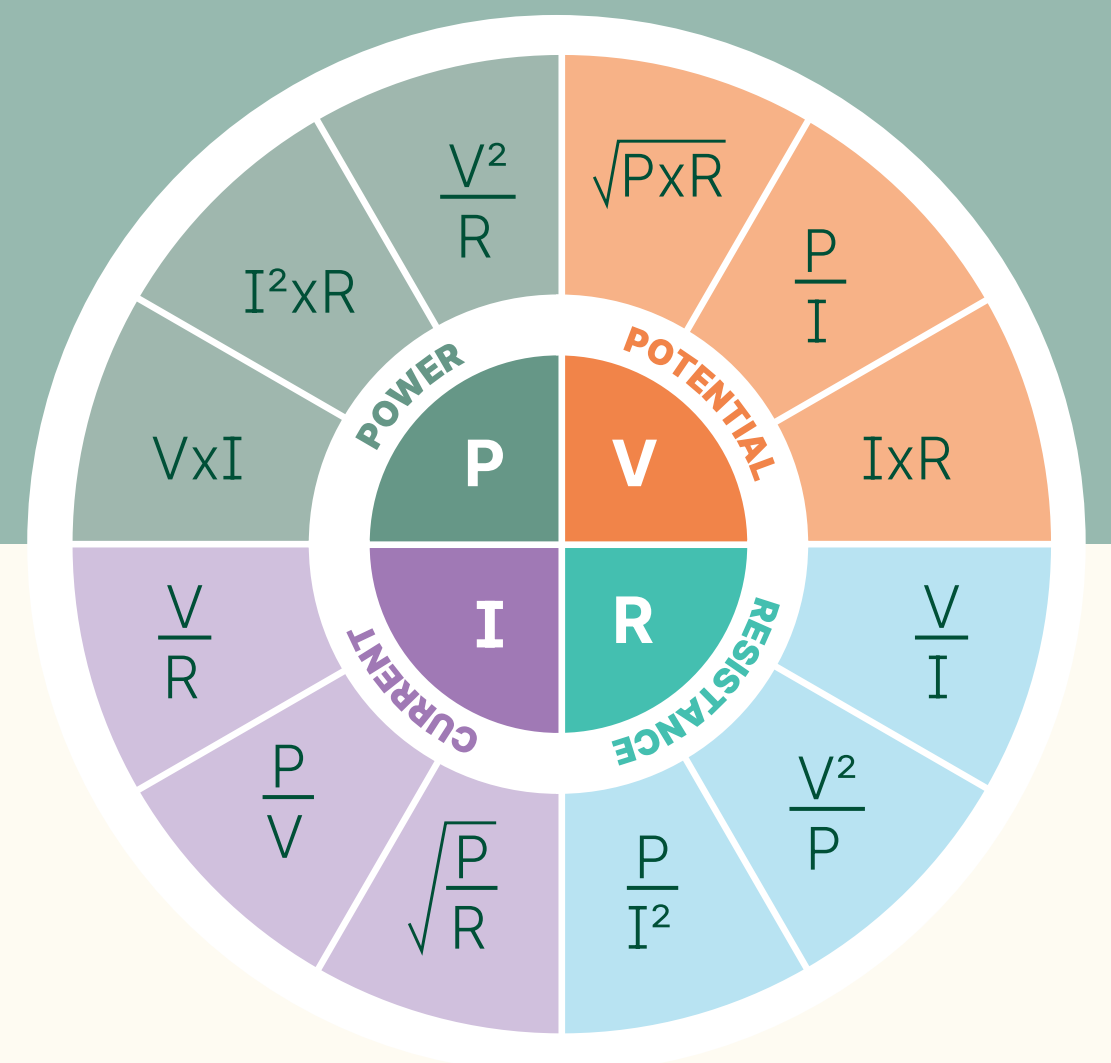


# Ohm's Law



## — say watt?

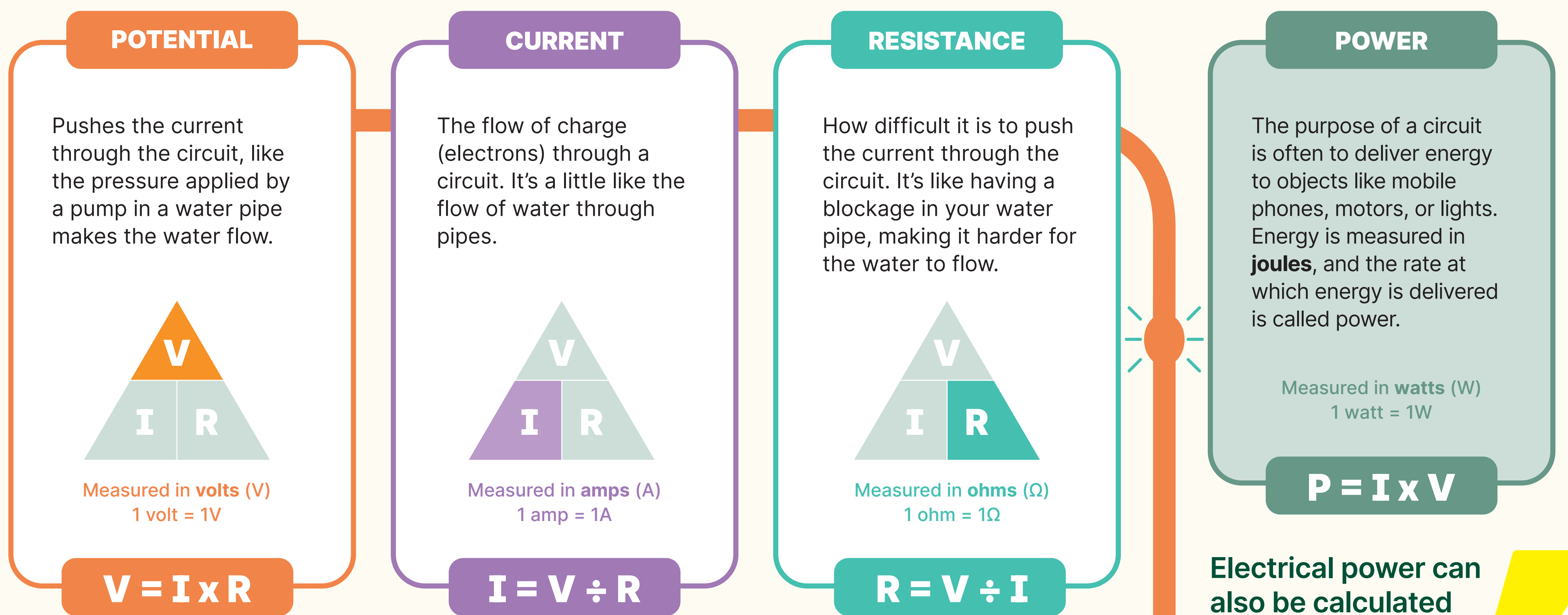
Electrical power can be calculated using one of the fundamental laws in electronics—developed by Georg Simon Ohm nearly 200 years ago.



## Ohm's Law



Describes the relationship between potential (V), current (I) and resistance (R) in an electrical circuit—the three basic units required to understand how electricity works.



A larger potential (voltage) pushes a bigger current.  
A larger resistance decreases the current.

**That's Ohm's Law:  $I = V/R$**

**Example**

An electrical circuit with a 12V power supply and 2Ω resistance will produce 6A of current (12V/2Ω), but if the resistance were increased to 4Ω, the current would go down to 3A (12V/4Ω).

**If you want to learn more about electrical and electronic engineering, come study with us.**



**Think it. Plan it. Build it.**

Te Wāhanga Ahunui Pūkaha  
Wellington Faculty of Engineering



### Fun Fact

A typical lightning bolt creates a potential difference (voltage) of several hundred million volts!

Electrical power can also be calculated using Ohm's Law.

### Watt power?

When a Pikachu uses thunderbolt, it generates 100,000 watts of power.

What would be the potential (voltage) of the thunderbolt if this was distributed at a current of 4 amps?\*

\*ANSWER: 25,000 volts