

Ohms Law

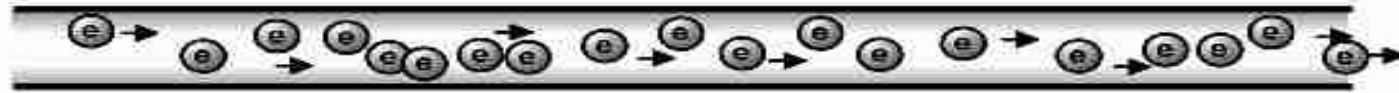
- Current: The path an electric current follows
- Unit for current is amp
- An **ammeter** measures the amount of current flowing past a certain point

Understanding Ohm's Law

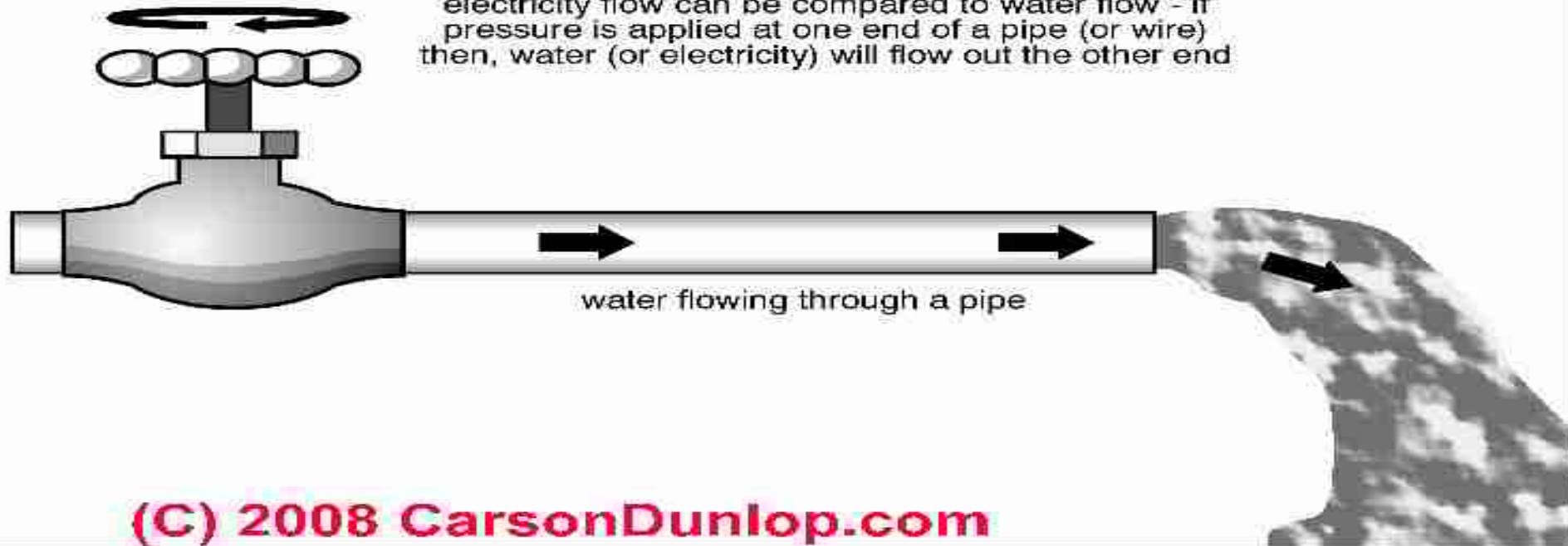
Ohm's law may be easier to understand with an analogy. Current flowing through a wire is like water flowing through a hose.

Electricity - basic concepts

electrons (electricity) travelling along a wire



electricity flow can be compared to water flow - if pressure is applied at one end of a pipe (or wire) then, water (or electricity) will flow out the other end



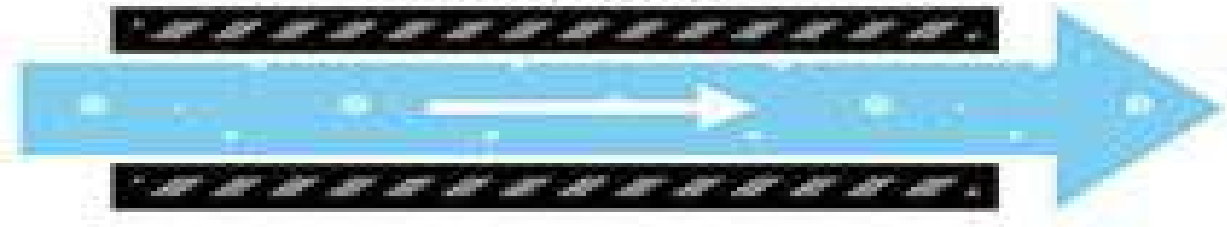
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Increasing voltage with a higher-volt battery increases the current. This is like opening the tap wider so more water flows through the hose.

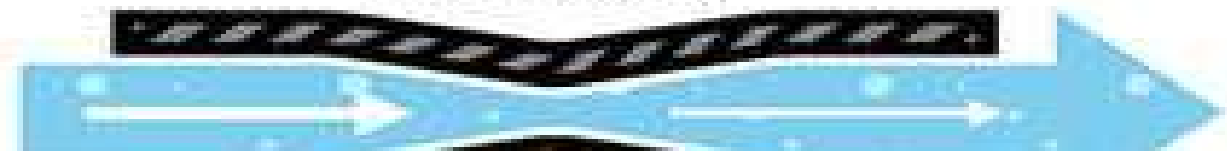
Increasing resistance reduces the current.
This is like stepping on the hose so less
water can flow through it.

Resistance

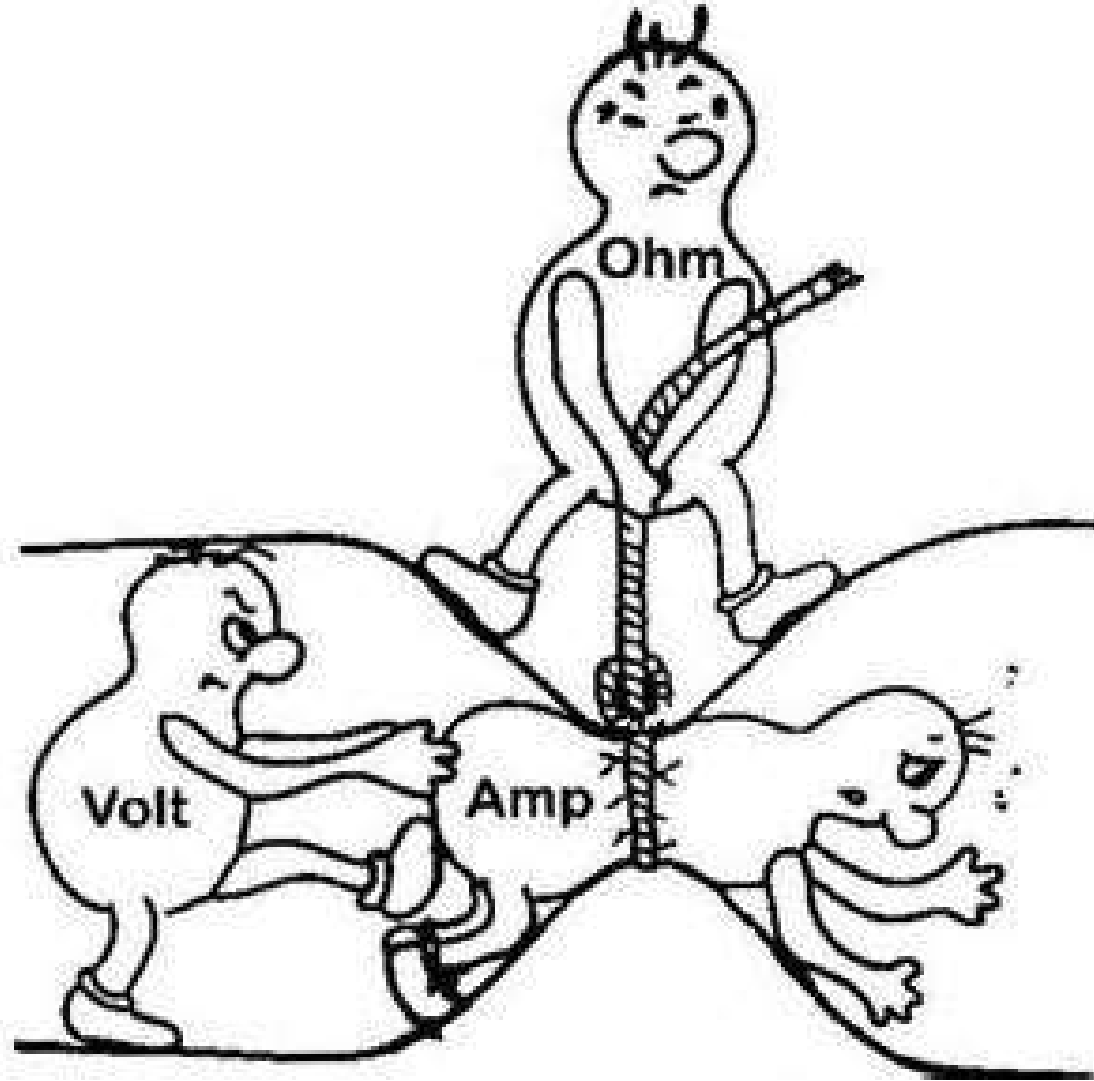
Less resistance



More resistance



Increasing the resistance, decreases the flow of current...



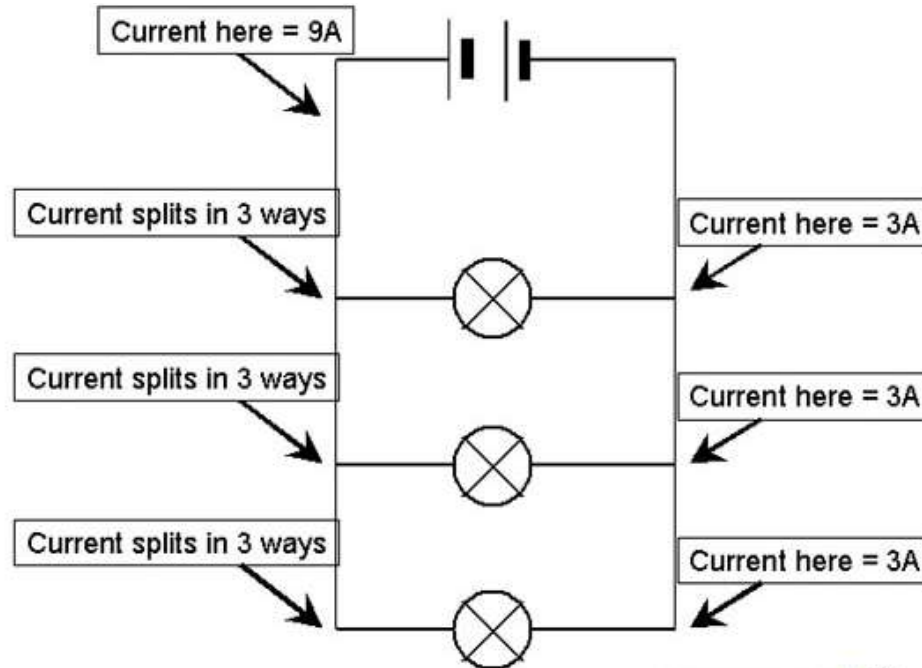


A series circuit is a circuit in which resistors are arranged in a chain, so the current has only one path to take. The current is the same through each resistor.

You need to be aware of the following rules to work through the next questions.

- Current in a **series** circuit is the **same** at all parts in a circuit.
In a series circuit, the **total, or sum of the voltages** across **all** the components will **equal** the voltage across the cell/battery.
- The total voltage supplied by the cell is 12V. There are three lamps connected in series, so $12/3 = 4\text{V}$.

- The parallel circuit splits into each routes;
- Example:

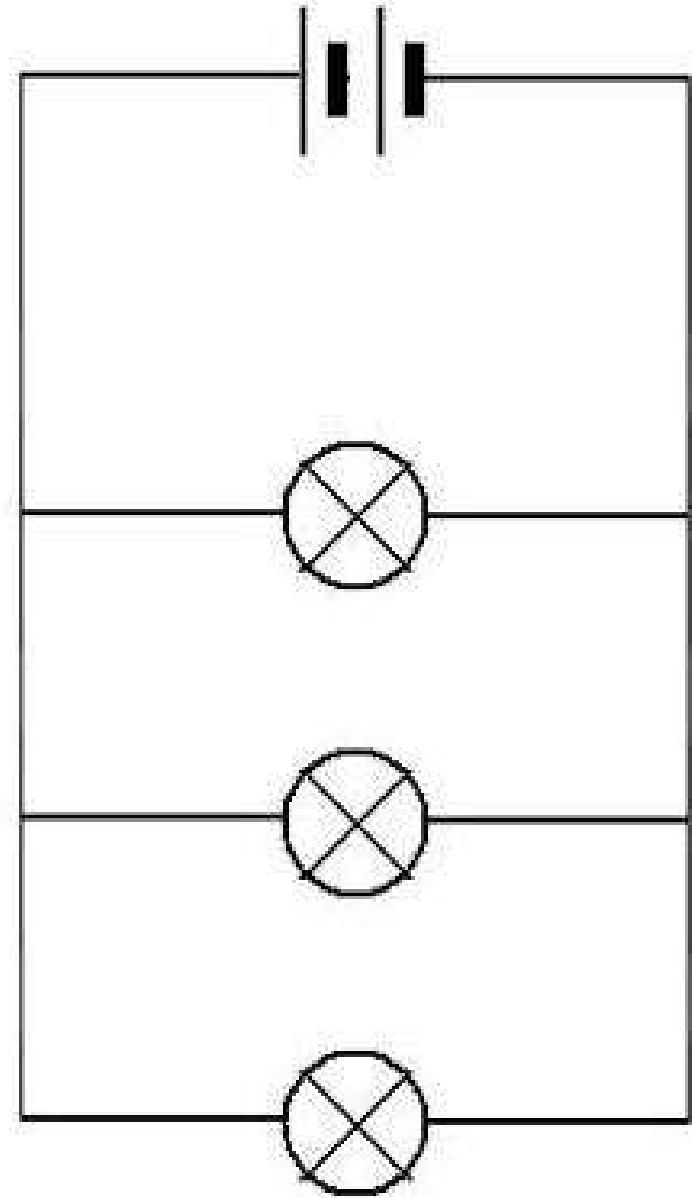


- This means the current also splits into 3 equal amounts. Therefore, $9/3 = 3\text{Amps}$
- The voltage will be the same everywhere

Questions:

- The label on the battery says 6V. If we connected a voltmeter across each lamp, what would the readings be?

- At lamp 1 - _____ V
- At lamp 2- _____ V
- At lamp 3- _____ V



Questions

- What type of circuit is this?
- What voltage will load 1, 2 and 3 have ?
- What current will Load 1, 2 and 3 have?

