Series Circuit:
- Current is the same
- Total resistance is the sum of all resistors
- One path for Current flow

Analogies – Water flowing through a pipe

Instrumentation
- Ohmmeter – Test equipment used to measure resistance

Power distribution in Series – Proportional to voltage drops

Voltage sources in series
- Aiding – Sources in the same direction (Add)
- Opposing – Sources in opposite directions (Subtract)

Kirchhoff's Voltage Law – The algebraic sum of voltages in any loop equal zero.

Voltage dividers – A way to calculate voltage drops without knowing the current.

Interchanging series elements – Voltage drops change as components are interchanged.

Voltage Sources and Ground
- Double Subscript notation – First letter tells where positive test lead will be, second letter tells where ground or negative test lead will be.
- Single Subscript notation – Assumed to be measured in reference to ground

Loading effects of instrumentation

Troubleshooting Parallel Circuits
- Opens – Current ceases to flow
- Shorts – Excessive current

Protoboards (Breadboards)

Applications: Christmas lights
- Microwave Ovens