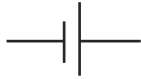


Circuits

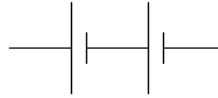
IB PHYSICS | ELECTRICITY

Circuits

cell



battery



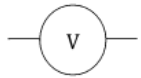
ac supply



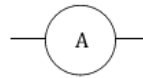
switch



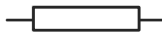
voltmeter



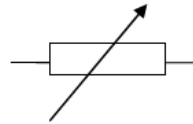
ammeter



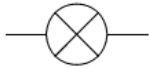
resistor



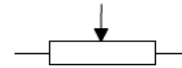
variable resistor



lamp



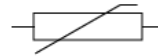
potentiometer



light-dependent resistor (LDR)



thermistor



transformer



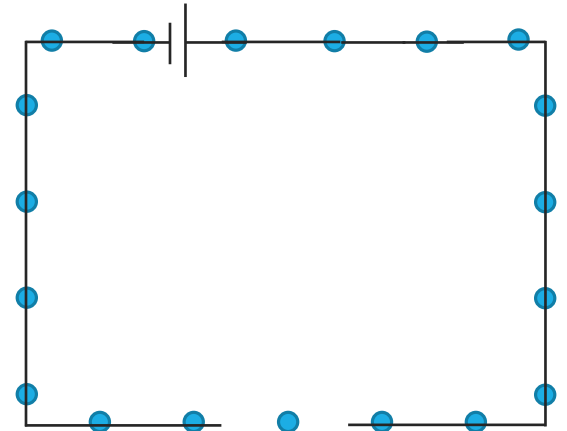
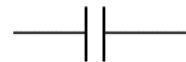
heating element



diode

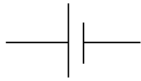


capacitor

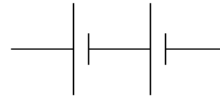


Resistance in a Circuit

cell



battery



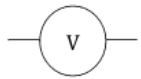
ac supply



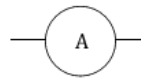
switch



voltmeter

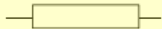


ammeter

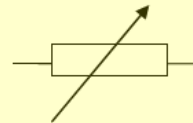


There are many different components that act as resistors when placed in a circuit

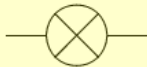
resistor



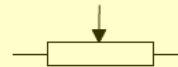
variable resistor



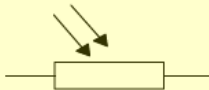
lamp



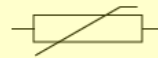
potentiometer



light-dependent resistor (LDR)



thermistor



transformer



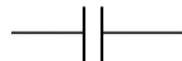
heating element



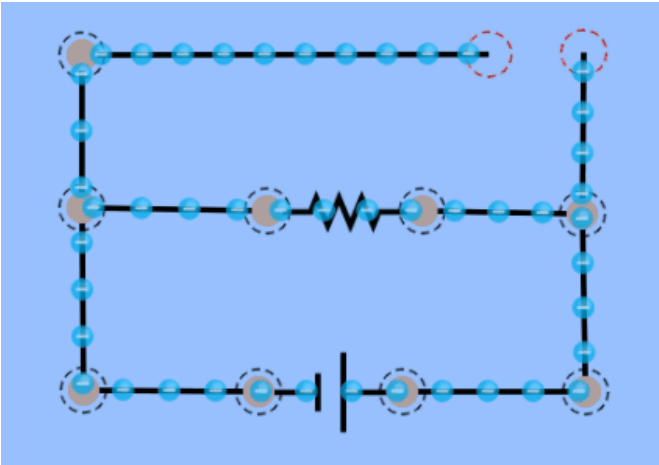
diode



capacitor

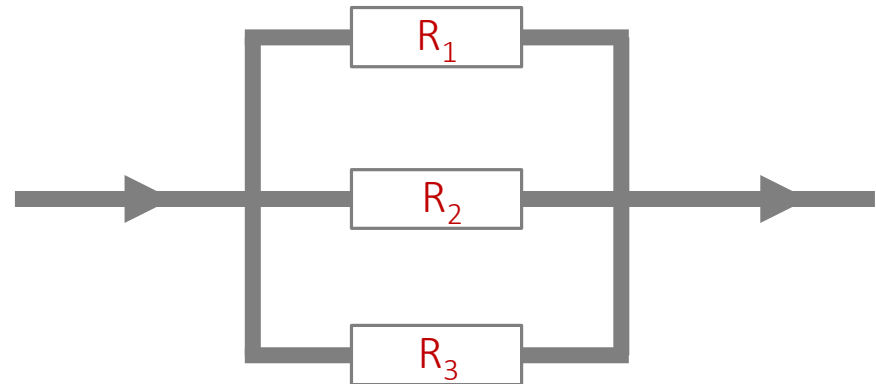
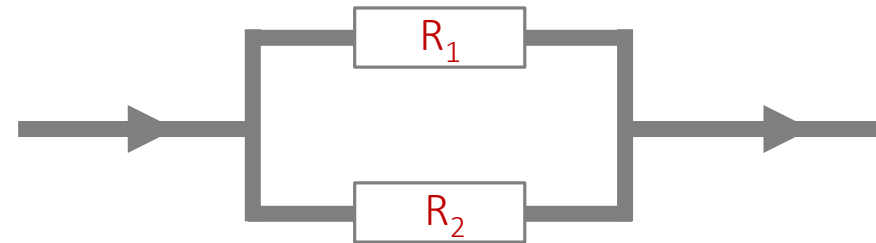
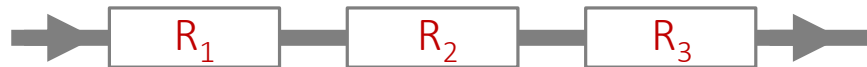


Resistance and Electron Flow

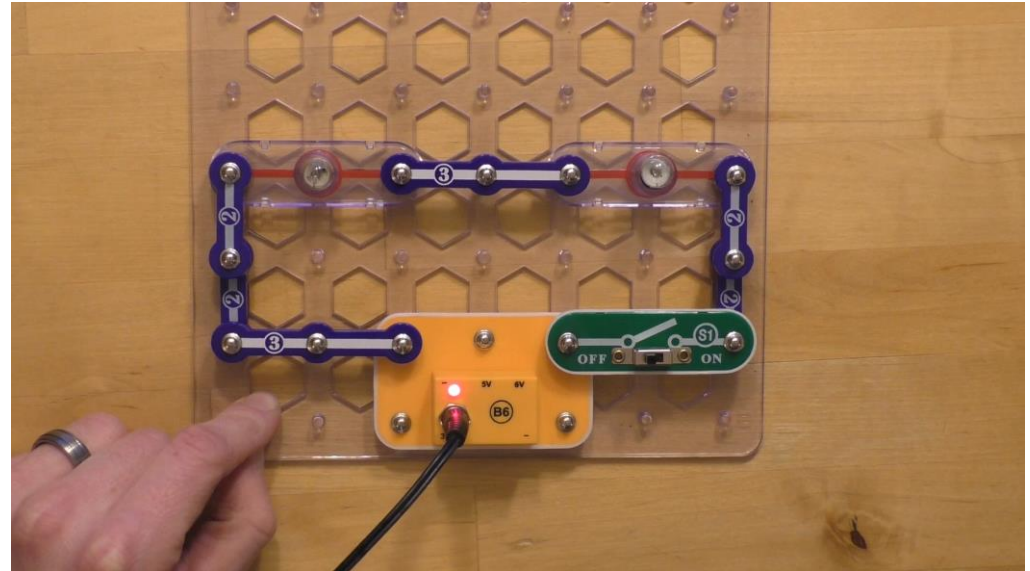


Electrons will
follow the path of

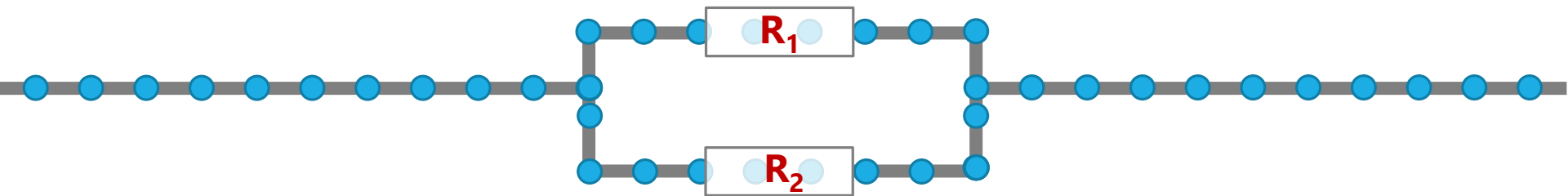
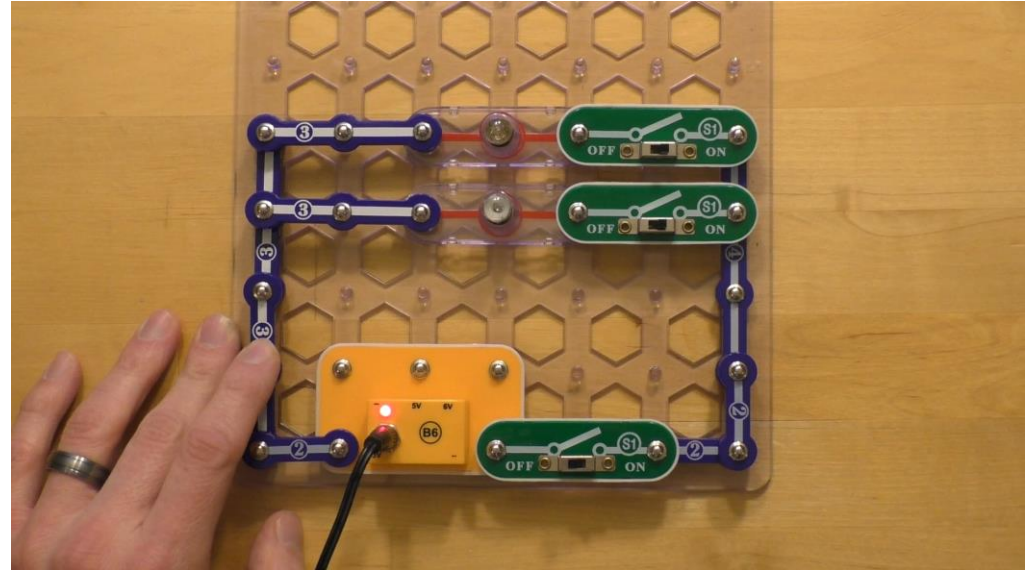
Combining Components



Connecting in Series

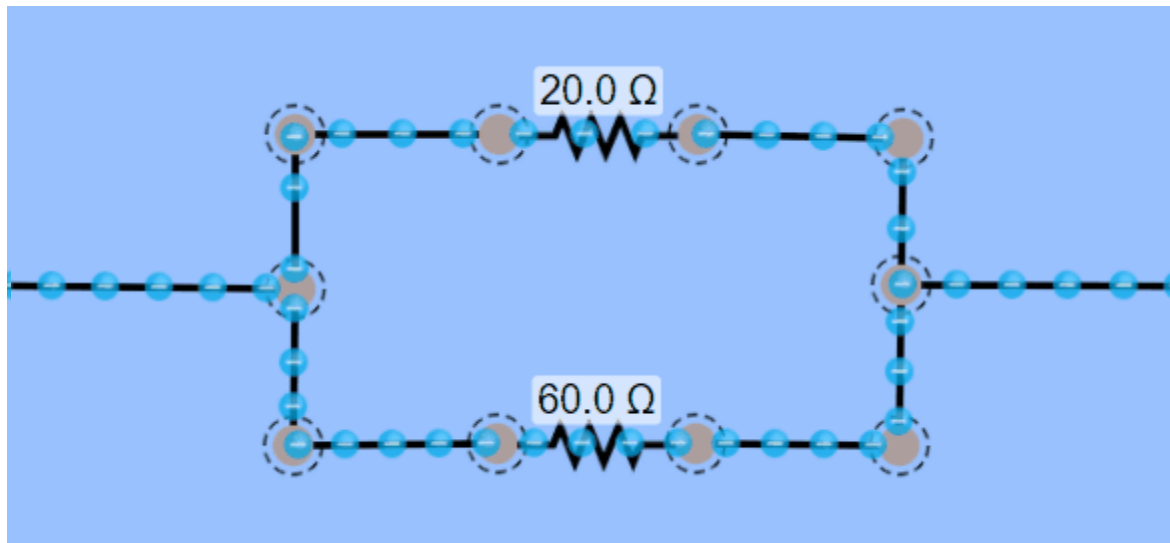


Connecting in Parallel

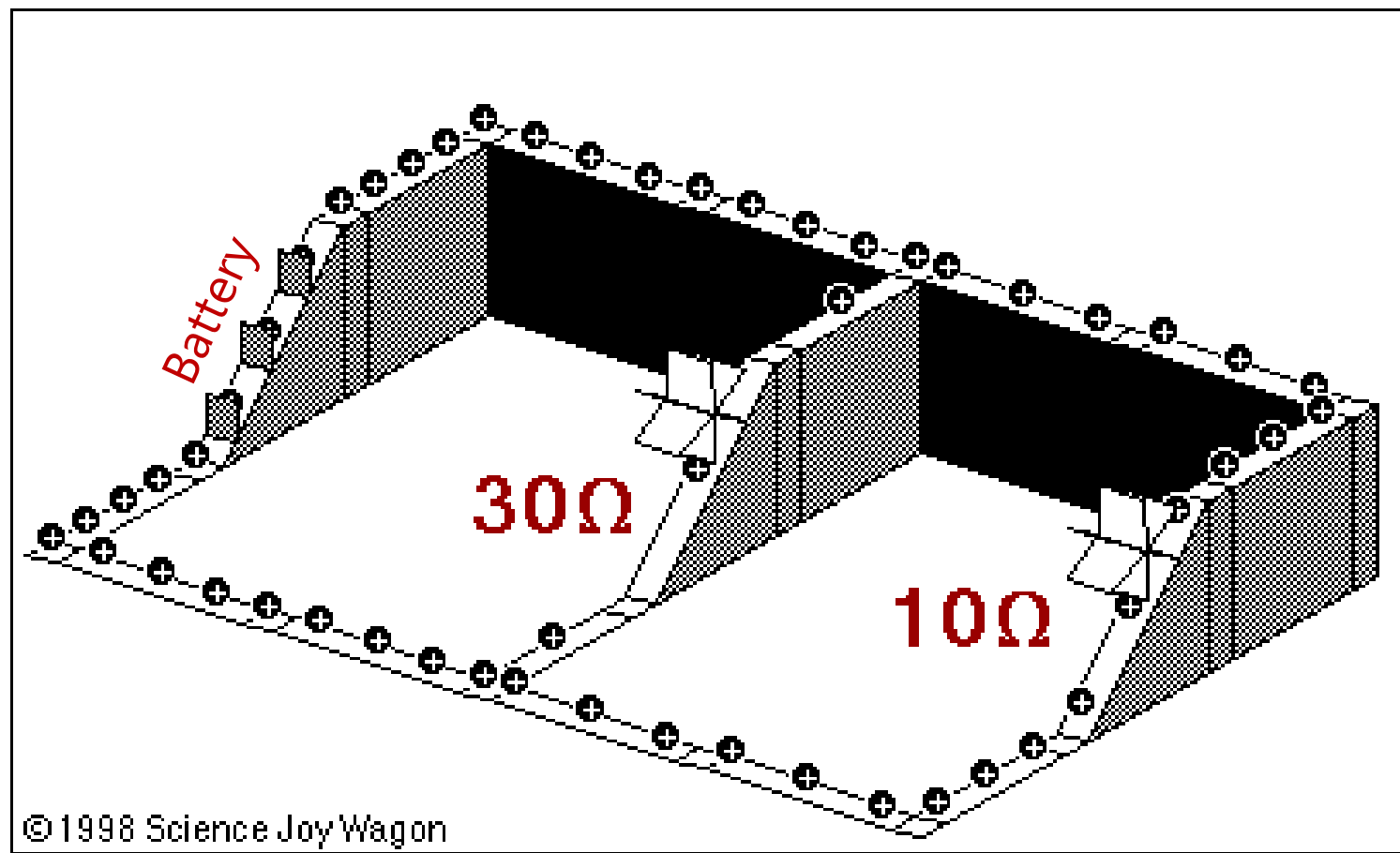


Connecting in Parallel

Which resistor has less resistance?



Water Flow Model



Measuring Circuits

When we measure **voltage** or **current** in a circuit, we need to connect our instrumentation in the right way



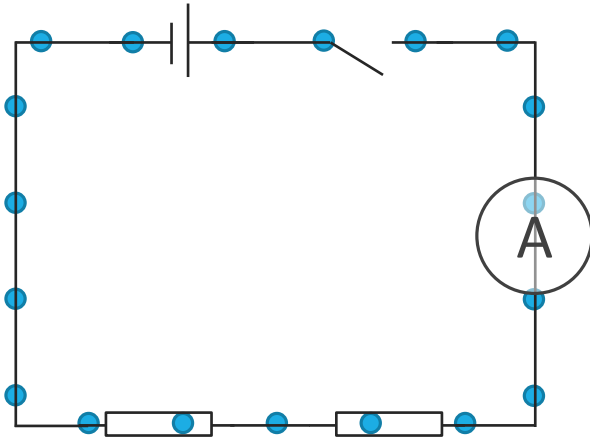
Voltmeter



Ammeter

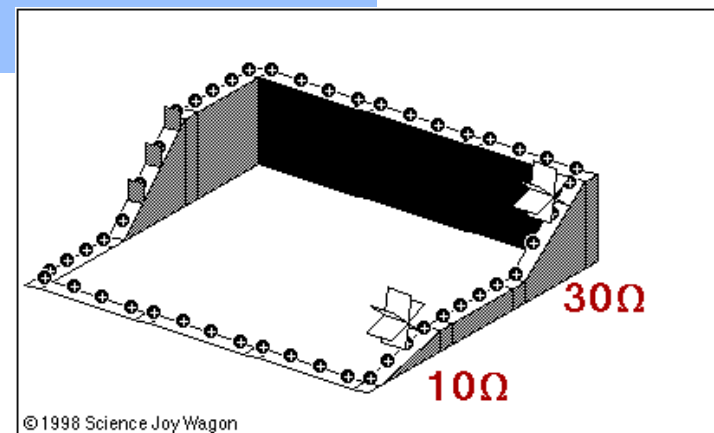
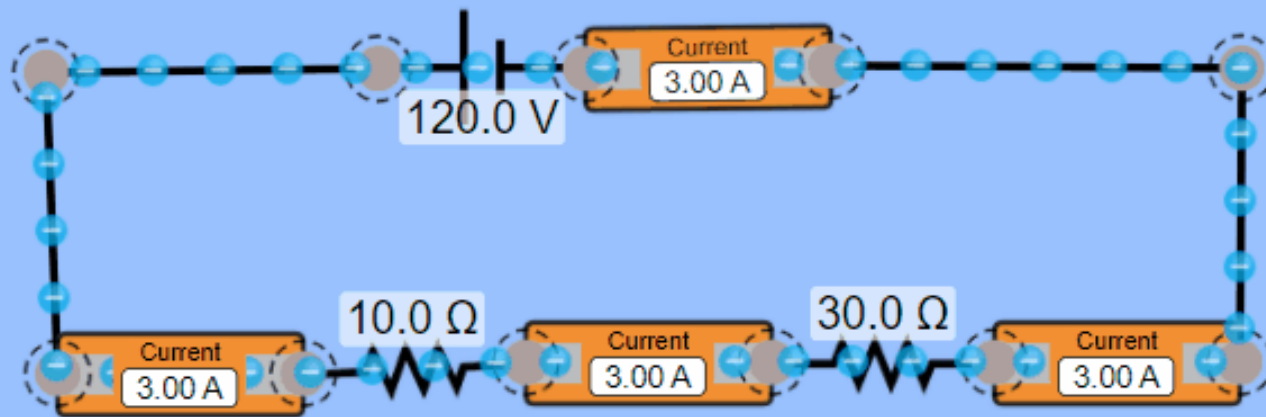
Ammeter

Hooked up in _____ with
the component being measured



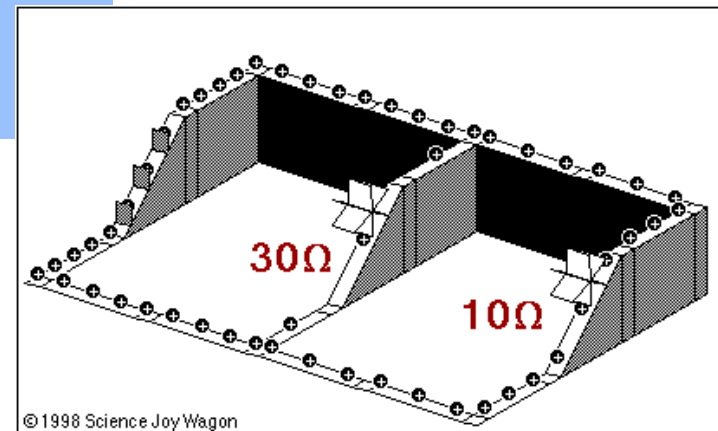
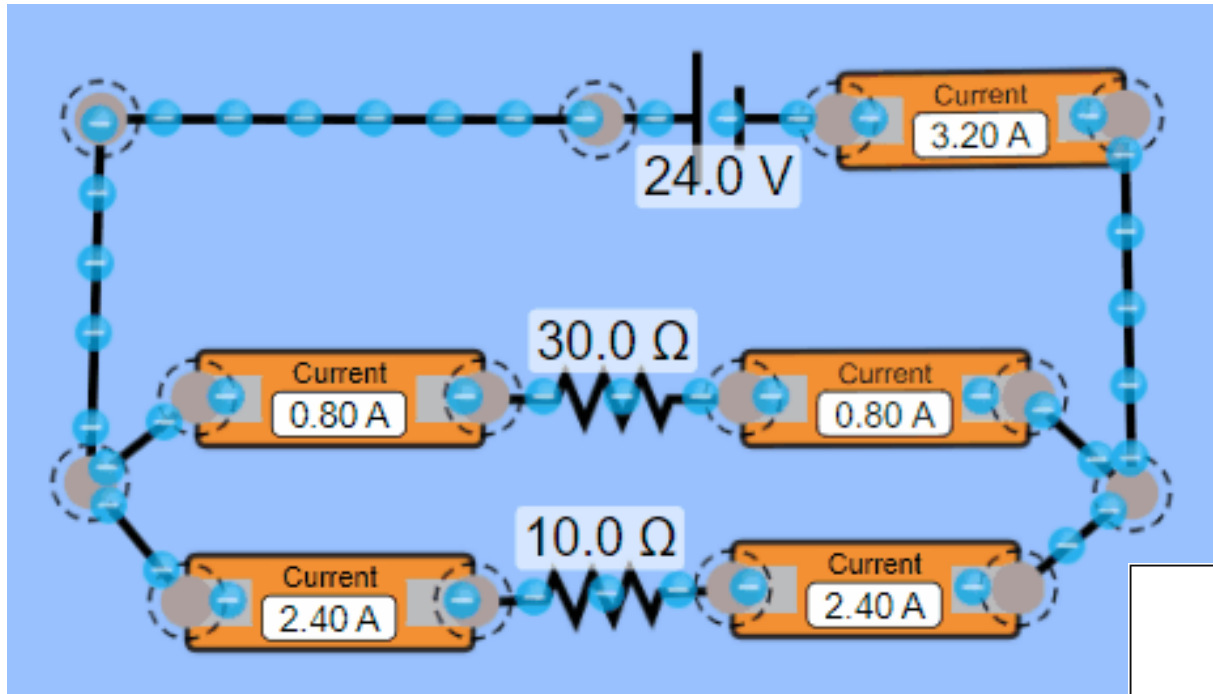
To measure the current,
the current must flow
through the ammeter

Measuring Current



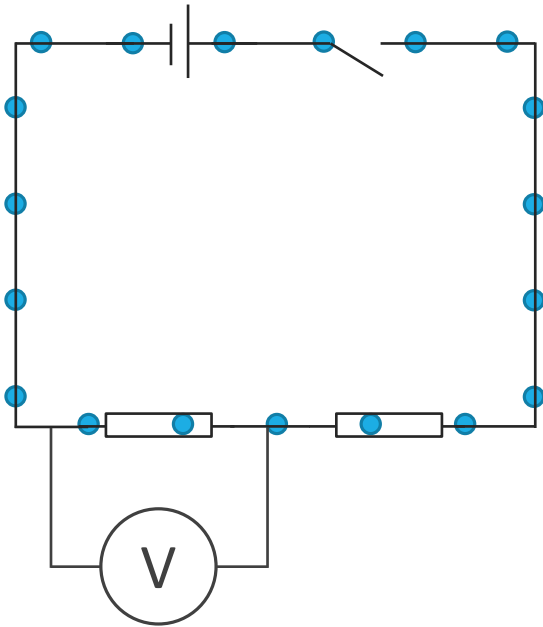
© 1998 Science Joy Wagon

Measuring Current



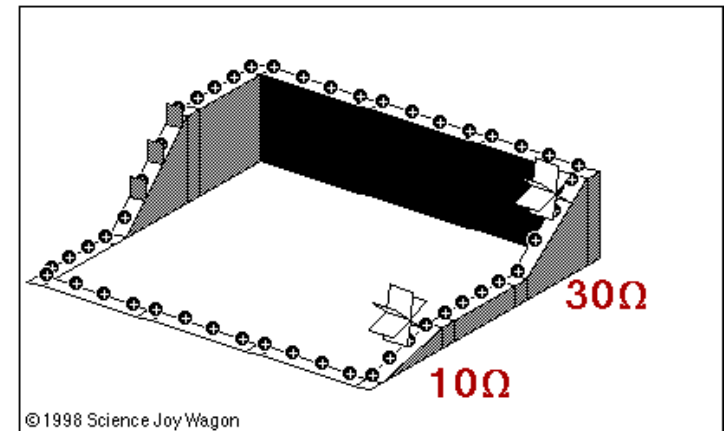
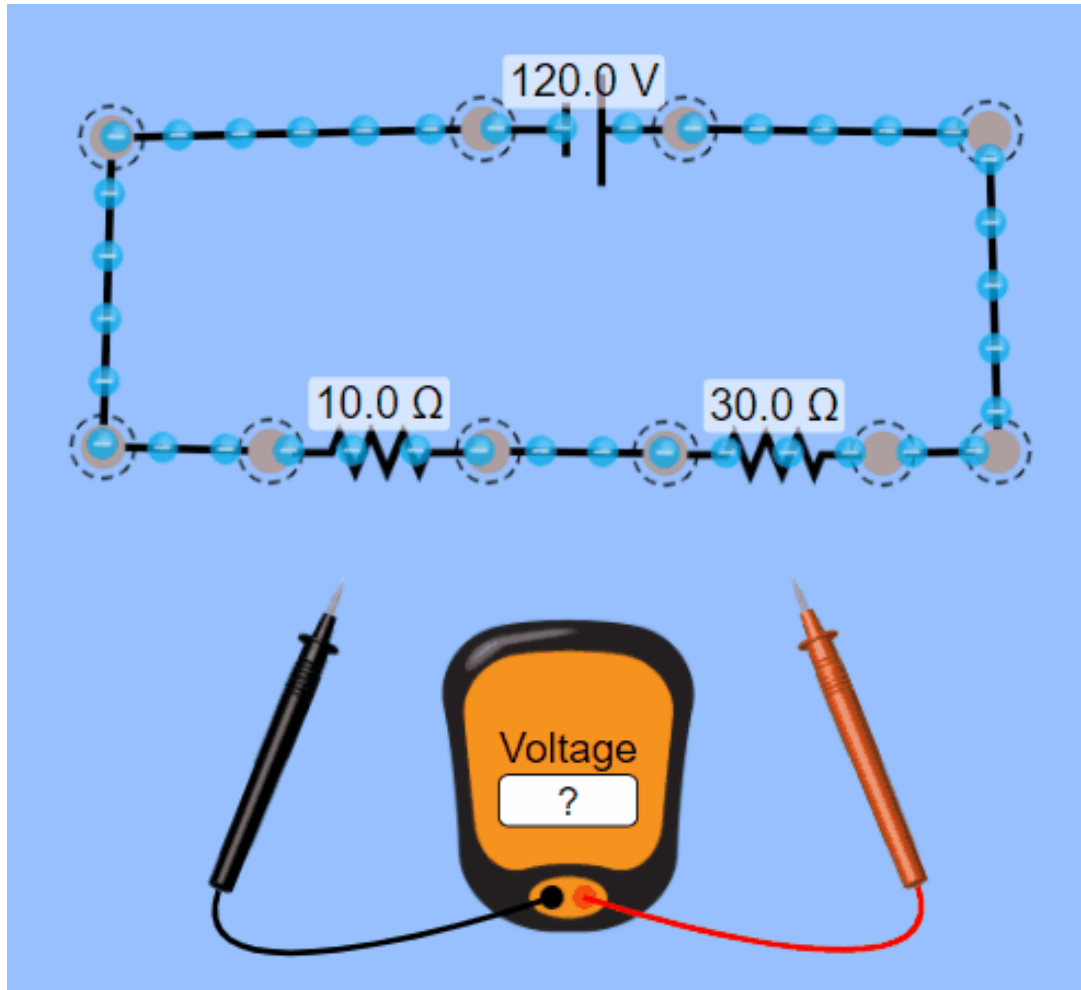
Voltmeter

Hooked up in _____ with
the component being measured

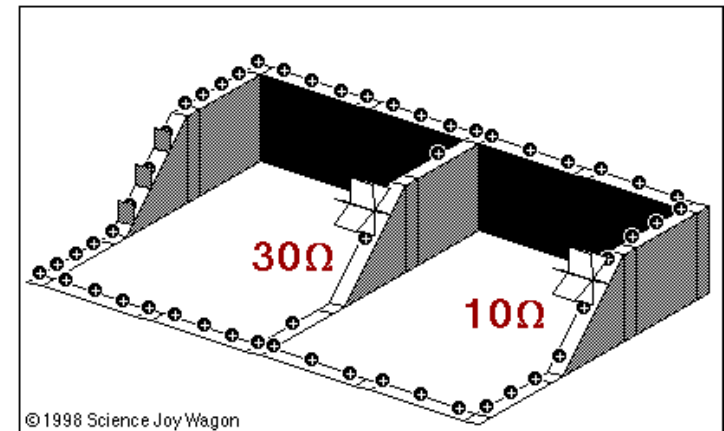
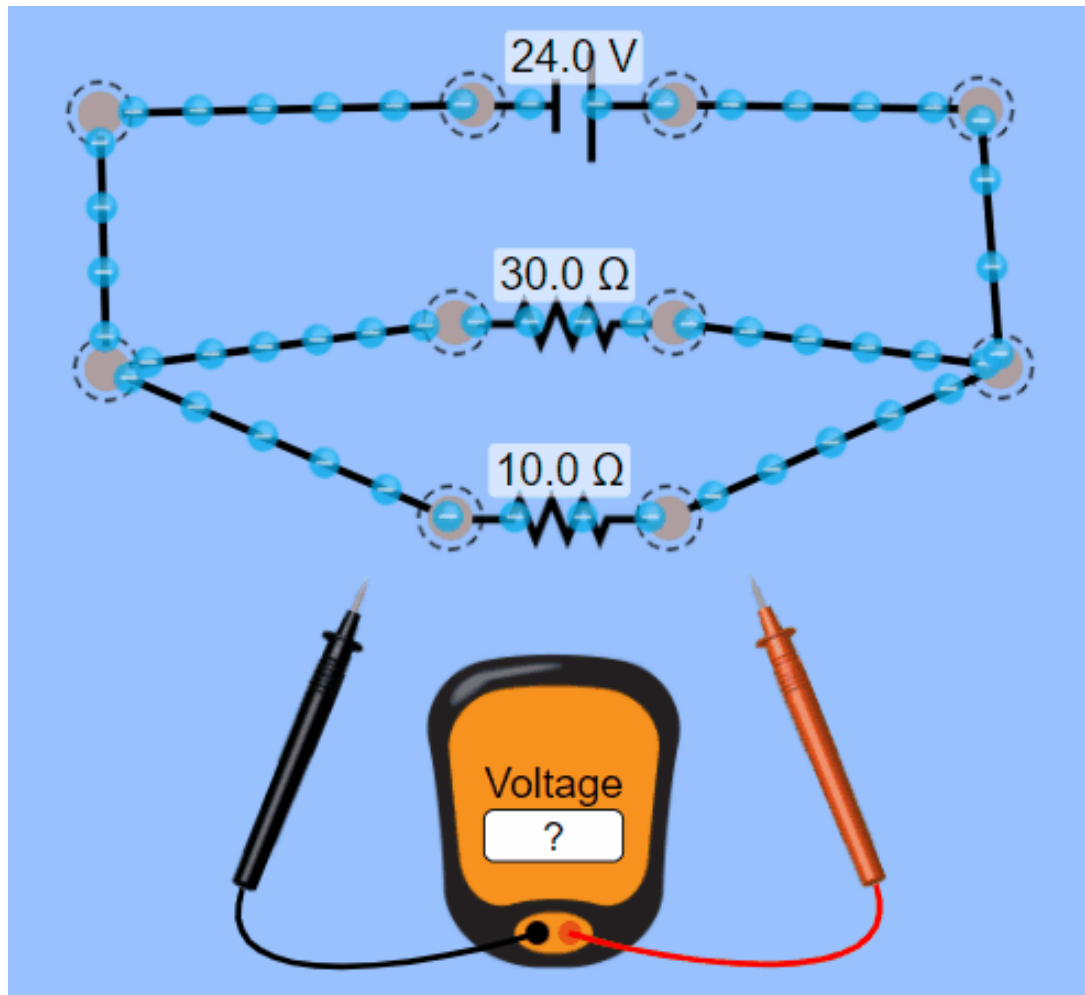


To measure the potential
difference (voltage) a
voltmeter needs to
connect to two locations

Measuring Voltage



Measuring Voltage



Lesson Takeaways

- ☐ I can describe the direction of conventional current compared to the movement of charges through a circuit
- ☐ I can identify component combinations as parallel or series
- ☐ I can describe how current flows through parallel and series resistors
- ☐ I can describe the set up to measure current and voltage in a circuit