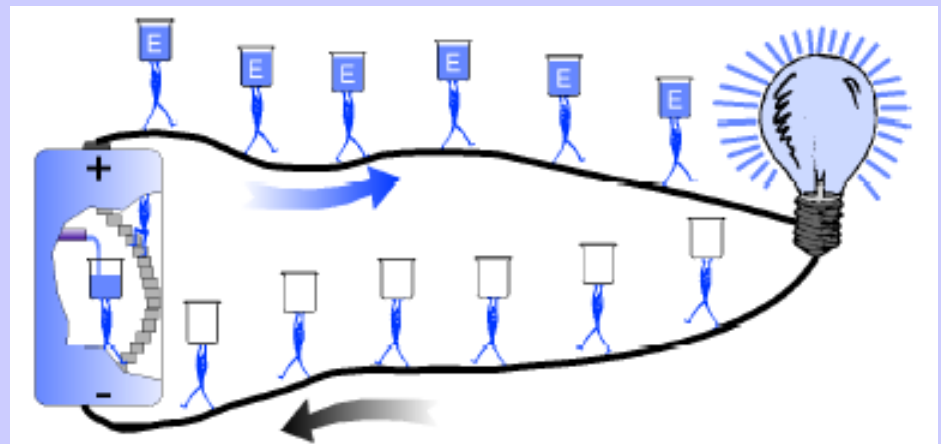


# Chp 7.1-7.2

## Voltage and Current

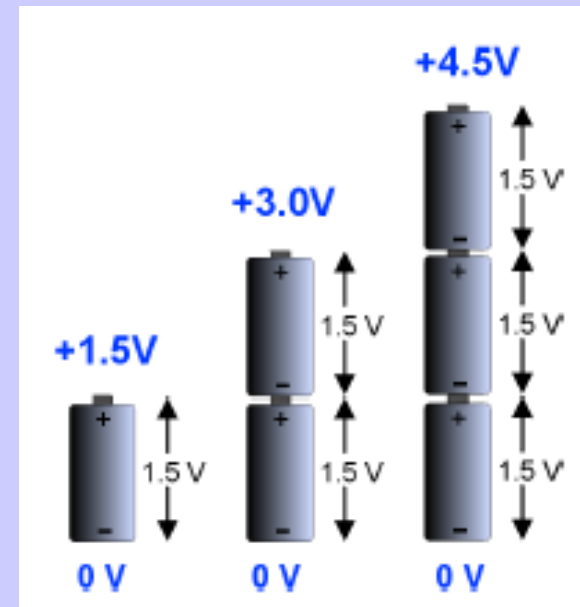
# Battery

- A battery is a device that uses chemical energy to move charges
- The charges flow out of the battery carry energy. These charges give their energy to electrical devices.



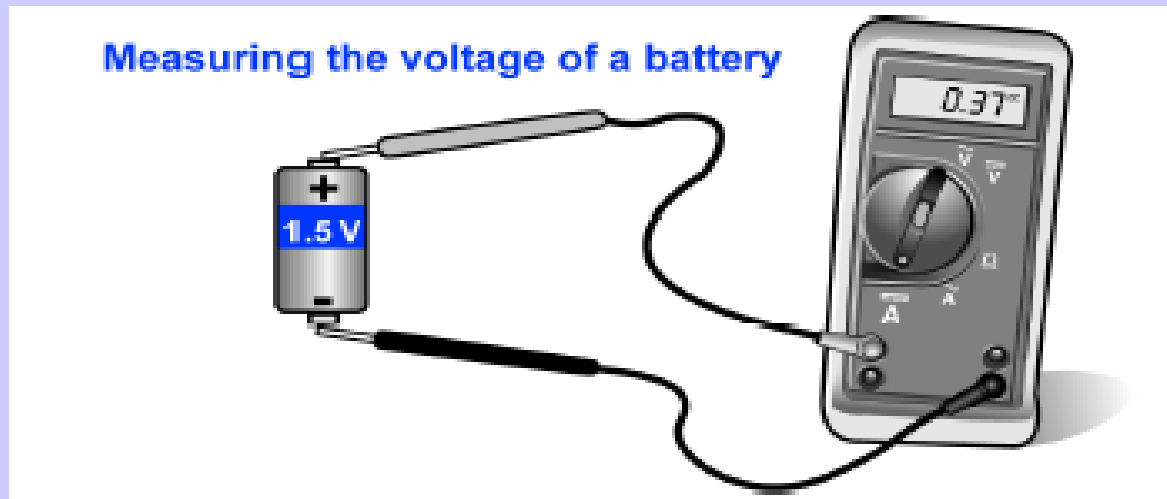
# Voltage

- Voltage is the measure of the energy level in a circuit.
- A fully charged battery adds 1.5 volts of energy.
- Stacking batteries can make higher voltage



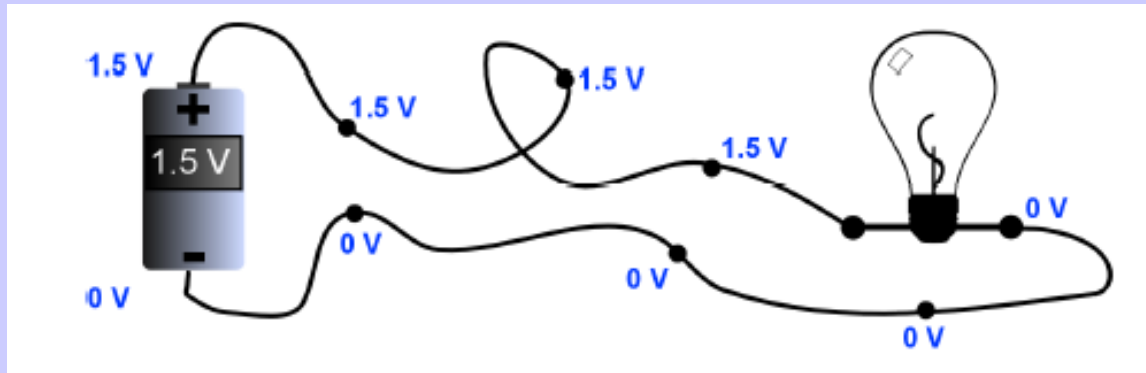
# Measuring Voltage

- Volts measures the energy difference between two places in the circuit
- Since voltage is measured from one point to another, the negative terminal of a battery has 0 volts



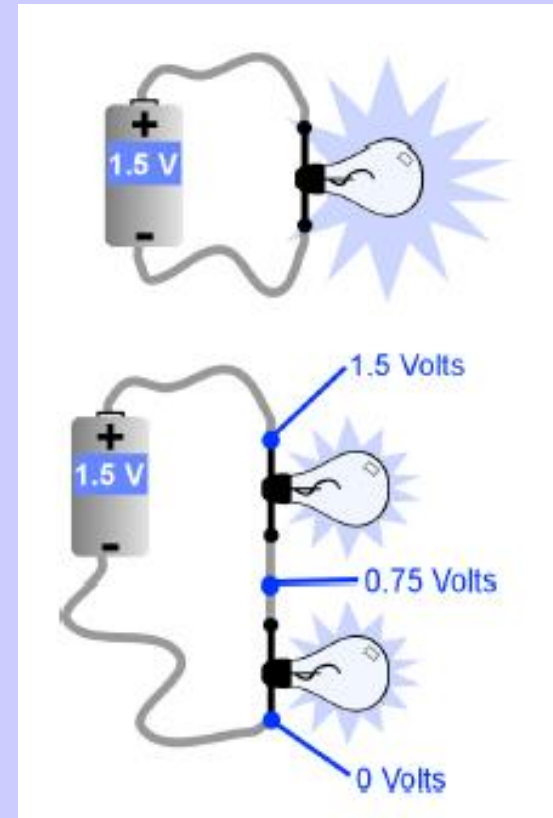
# Voltage drop

- Every point in a circuit connected to the same wire is the same voltage.



- Every time you connect something that uses energy, some of the voltage is reduced since it takes energy away from the moving charges in the circuit

- The single bulb circuit is much brighter, because all of the energy is used up in one bulb
- Two bulbs are dimmer than just the one, because they each get only half the energy
- In both circuits all of the 1.5 volt is used by the light bulbs
- \*\*\*No matter how many bulbs are present all of the voltage must be used in the circuit.

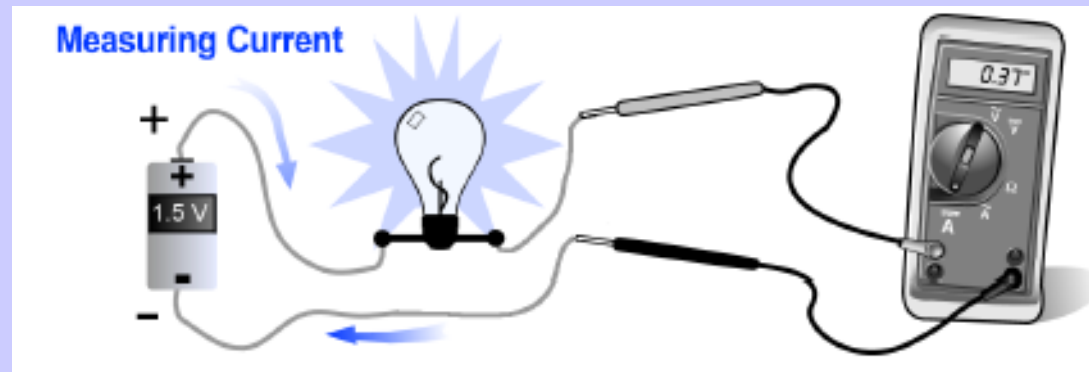


# Current

- Current is the rate of the flow of the electrical charges
- Current is measured in Amps
- Current is a measure of the number of charges that move in a second
- Current flows from the positive terminal of a battery to the negative terminal or from high voltage to low voltage.

# Measuring Current

- To measure current, the current must flow through a meter
- That means you must connect the meter into your circuit so the current is forced to flow through it





# Types of Current

- Electricity in your house is alternating current (AC). This means the direction of the current goes back and forth. In the U.S. the current reverses 60 times per second. (In Europe is reverses 50 times per second)
- AC current is easier to generate and transmit.
- A battery produces direct current (DC). A battery makes current flow in one direction