

Please don't Re-volt - Answer Key

1) What is a coulomb? **A coulomb is a unit of charge.**

2) What is a volt? **A volt is how much energy each coulomb releases on its journey from the negative end of the battery to the positive end.**

3) What is the formula for calculating volts? **1 volt = 1 joule per coulomb**

4) What is power? **Power is how fast work is done.**

5) What is a watt? **A watt is a unit of power.**

6) What is the formula for calculating a watt? **1 watt = 1 joule per second**

7) Describe the demonstration that you did in class today about volts and watts.

Volts

Ahmed was a coulomb in circuit that had a 4 volt battery. That means Ahmed had to give away 4 joules of energy on every trip around the circuit. At first he had two light bulbs (Grace and Liliane) to give the energy to. He gave each of them two joules. Then, Liliane burnt out, so Ahmed couldn't give Liliane the two joules anymore. He still gave Grace the 2 joules she needed to stay lit. What happens if Ahmed has nobody to give the joules to? The joules will be released as heat, possibly enough to start a fire.

Watts

Steve is a 1-watt light bulb. That means that he needs 1 joule of energy every second to stay lit. Simon, Terry, Helen and Nixon are coulombs in a circuit that has a 1 volt battery. That means that each coulomb has 1 joule of energy to give on their way around the circuit. Steve needs one joule per second to stay lit, which means that in this circuit, one student per second must give Steve a joule to stay lit.

