

Electricity and Electrical Safety Vocabulary for Upper Elementary Mar.2008

In rough order of presentation:

electron: a fast moving part of an atom with negative charge

proton: a part of an atom found in the nucleus – it has positive charge

nucleus: the center of an atom – it is surrounded by fast moving electrons

static electricity: disorganized electrons moving to find opposite charge

current electricity: electrons flowing from one point to another

conductor: a material which allows current to flow freely

insulator: stops or blocks the flow of electrons

ground: static or current electrons move to a ‘neutral’ home, which could be a copper pole driven into the ground or the chassis of a car.

generator: when a magnet is moved in a coil of conductor, current electricity is produced

motor: transforms electrical energy to motion energy

load: an appliance which transforms electricity to another form of energy, usually heat or motion

circuit: a path along which current electricity flows from a supply of electrons to a ground. A typical circuit usually includes a load and a switch.

switch: Switches are mechanical devices to break a circuit to stop the flow of electricity.

parallel circuit: when several loads are ‘piggybacked’ onto one supply and ground circuit – the circuit does not depend on any individual load being connected. *Alternate: the current has alternate paths to flow*

series circuit: when several loads are connected in a continuous path between the supply and ground – all loads must be connected to keep the circuit *alternate: the current can only flow in one path*

short circuit: when the shortest path for the current flow skips the load – this can cause the wire to overheat and cause a fire!

Advanced terms:

volts: Volts are the unit of measure of how much difference there is between negative and positive charge

amperes: Also known as ‘amps’ is the unit of how much electric current is flowing in a circuit

watt: The watt is a measure of how much energy is used in a second. An example is the ‘kilowatt-hour’ used to bill electricity, the same as 1000watts used for one hour. A watt is = volts (amps).

resistance: This is a measure of how much an electron is slowed down in its journey to a neutral state. An insulator has infinite resistance, and a superconductor has no resistance. Even a gold wire has some resistance, though less than any other metal. The unit is the ‘**Ohm**’.

Ohm’s law: This is an equation which show how volts are related to current and resistance. $V = I (R)$ where I is current and R is resistance.