Name _____ Class_____ Team_____ Date_____

lexile level 840

How electricity moves in a circuit

Materials such as copper metal that conduct electricity (allow it to flow freely) are called **conductors**. Materials that don't allow electricity to pass through them so readily, such as rubber and plastic, are called **insulators**. What makes copper a conductor and rubber an insulator?

A current of electricity is a steady flow of electrons. When electrons move from one place to another, round a circuit, they carry electrical energy from place to place like marching ants carrying leaves. Instead of carrying leaves, electrons carry a tiny amount of electric charge.

Electricity can travel through something when its structure allows electrons to move through it easily. Metals like copper have "free" electrons that are not bound tightly to their parent atoms. These electrons flow freely throughout the structure of copper and this is what enables an electric current to flow. In rubber, the electrons are more tightly bound. There are no "free" electrons and, as a result, electricity does not really flow through rubber at all. Conductors that let electricity flow freely are said to have a high **conductance** and a low **resistance**; insulators that do not allow electricity to flow are the opposite: they have a low conductance and a high resistance.

For electricity to flow, there has to be something to push the electrons along. This is called an **electromotive force (EMF)**. A battery or power outlet creates the electromotive force that makes a current of electrons flow. An electromotive force is better known as a **voltage**

Explain why some things carry electricity and other things do not.	The article talks about something called an Electron. Find out what an electron is.

Cite evidence for all answers.

Article from : http://www.explainthatstuff.com/electricity.html

NYS learning Standard 4 – Science Alignment to Electric Circuits Jigsaw
Key Idea 4: Energy exists in many forms, and when these forms change energy is conserved.
Key Idea 3: Matter is made up of particles whose properties determine the observable characteristics of matter and its reactivity.

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