**Electrical Circuits – Brain Pop**

1. **A circuit is a way of routing electricity along a path.**
2. **Electricity happens when electrons, the negatively – charged particles in an atom mover from one place to another.**
3. **Electricity is nearly instant in the natural world example, bolts of lightning, or when you get a shock from touching someone.**
4. **Static electricity is a sort of an uncontrolled burst of energy, which is not all that useful as a power source, because all the energy is released all at once.**
5. **In order for electricity to be useful, you need a steady flow of it – or a current.**
6. **A electric current needs a path to follow, which is called a circuit.**
7. **A circuit is made up of a power source, like an outlet in the wall or a battery.**
8. **The power source provides a steady supply of electrons.**
9. **In a battery, the electrons come from the negative terminal.**
10. **From a wall outlet, the electrons come from the shorter of the two slots, the hot slot.**
11. **The electrons need a good path called a conductor which is any material that allows electrons to move through it easily. (gold, copper, silver)**
12. **Most metals make good conductors, so we use metal wires as a path in electric circuits.**
13. **Insulators are the opposite of conductors (glass, ceramic, and rubber) are materials that electrons have a hard time flowing through.**
14. **Insulated wire keep electrons on course, and protect us from the dangerous flow of electricity going through their metal cores.**
15. **Along the circuit’s path, there’s usually a load, - a device that uses electricity.**
16. **The Electrons flow through the device, giving it power.**
17. **When the electrons flow out of the device, they head toward the opposite side of the power source, in a battery, that’s the positive terminal.**
18. **In a wall outlet, that is the taller of the two slots, the neutral slot.**
19. **The real key to an electric circuit, is that the electron have to have some place to go.**
20. **Without somewhere to flow into, the electrons will stop moving, and you’ll no longer have a current.**
21. **A cord has two separate insulated wires.**
22. **Electrons flow out of the hot slot, down one the wires, into the load, through the wire on the other half of the cable, and back into the neutral slot.**
23. **To control whether an electrical device is on or off, you need a switch.**
24. **A switch controls the flow of electrons by opening and closing a circuit.**
25. **The “Off” position means the switch is open, no flow of electrons.**
26. **The “On” position means the switch is closed and the electrons can flow.**