**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Electricity Investigation**

Answer the questions using the websites provided. Use complete sentences!!

* **Go to:** [**http://www.energyquest.ca.gov/story/chapter02.html**](http://www.energyquest.ca.gov/story/chapter02.html)

[**http://science.howstuffworks.com/electricity.htm/printable**](http://science.howstuffworks.com/electricity.htm/printable)

[**http://www.edu.pe.ca/kish/Grassroots/Elect/whatis.htm**](http://www.edu.pe.ca/kish/Grassroots/Elect/whatis.htm)

[**http://www.eia.doe.gov/kids/energy.cfm?page=electricity\_science-basics**](http://www.eia.doe.gov/kids/energy.cfm?page=electricity_science-basics)

1.What is electricity?

2. Explain the role of a battery in the circuit.

3. What are the 3 basic units in electricity?

**Go to:** [**http://www.explainthatstuff.com/electricity.html**](http://www.explainthatstuff.com/electricity.html)

4. What kinds of materials can electricity pass through?

5. What kinds of materials can electricity not pass through?

**Go to:** [**http://www.energyquest.ca.gov/story/chapter02.html**](http://www.energyquest.ca.gov/story/chapter02.html)

[**http://www.explainthatstuff.com/electricity.html**](http://www.explainthatstuff.com/electricity.html)

6. How does electricity travel through wires?

7. A battery stores what type of energy? Explain

**Go to:** [**http://phet.colorado.edu/en/simulation/circuit-construction-kit-dc-virtual-lab**](http://phet.colorado.edu/en/simulation/circuit-construction-kit-dc-virtual-lab)

**Open the DC only circuit simulator**

**Directions:**

**Choose the RUN NOW option**

**Tools to build circuit are in the white box on the right side of the screen**

**To remove parts or change voltage, resistance, etc…..right click on the part for more options!!**

 12. Find a way to make a single light bulb light up with as FEW parts hooked up as possible. When electricity flows through wires and makes something work, like a light bulb, it is called a circuit. Sketch your circuit below:

13. Go to the grab bag and play with the different objects. Find out which objects allow electricity to flow and fill in the data table:

|  |  |
| --- | --- |
| Objects that allow electricity to flow (conductors) | Objects that do NOT allow electricity to flow (insulators) |
|  |  |

14. What do the conductors have in common?

15. What do the insulators have in common?

16. **Experiment** with the simulator; see what you can make it do!!!

Build different circuits. Can you make light bulbs glow brighter? Can you make light bulbs glow dimmer?

17. Use the voltage meter and ammeter. (use voltage meter on battery, attach ammeter to circuit)

 **Sketch the circuit you created and record your readings.**

**Directions:**

**Use the same simulator as above**

Put three resistors on the work area and right click on each to make the resistances different from one another.

Record the resistances in the table below.

Build a circuit using the three resistors, batteries and wires. Draw your circuit below.