Potato Battery

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Summary Purpose of this Inquiry Lesson

• Energy can come from many forms.
• One way to get energy is from the nutrients inside of a potato.
• This activity will show how energy is collect and used from a potato to power a small game.
• The volts of the battery will be measured, collected and graphed.
Lesson Objectives

Students will be able to:

• Understand that objects can be powered by another energy source other than a battery or by using an electrical outlet.

• Construct a small battery.

• Test the volts that the potato battery is producing.

• Collect data and then graph it.
Materials

- Two potatoes
- Two galvanized screws/nails
- Three wires with alligator clips
- Two pennies
- An object to be powered (In this lesson it is a handheld Connect Four Game)
- A volt meter
Step One: Push the pennies into the potatoes.
One penny for each potato.
Step Two: Push the nails into the potatoes.
One nail for each potato.
Step Three: Connect one wire to the penny of a potato. Then connect the other end of that wire to the other potato’s nail.
Step Four: Connect a wire from the free penny of one potato to a battery terminal of the object in which you are trying to power.
Step Four: Connect a wire from the free nail to the free battery terminal of the object in which you are trying to power.
Step Five: Turn the object that you want powered over to ensure that the potato battery is working.

It Works!
Step Six: Disconnect the wires that are connected to the object that is powered.
Step Seven: Set up the Volt Meter by connecting the test probes into the meter.
Step Eight: Connect the red probe to the nail and the black probe to the penny.
Step Nine: Use the Direct Current (DC) scale to collect the data.
Step Ten: Start collecting data using the data table. Collect data in increments of ten minutes for a total of an hour.

*How Shocking?*

Record the volts on this data table every ten minutes for an hour.

<table>
<thead>
<tr>
<th>Minutes</th>
<th>DC Volts</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>9.8</td>
</tr>
<tr>
<td>10</td>
<td>9.6</td>
</tr>
<tr>
<td>20</td>
<td>6.6</td>
</tr>
<tr>
<td>30</td>
<td>6.4</td>
</tr>
<tr>
<td>40</td>
<td>6.1</td>
</tr>
<tr>
<td>50</td>
<td>3.2</td>
</tr>
<tr>
<td>60</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Multiple the volt meter reading by 3.
Step Eleven: Graph the Data
Links to Internet Resources for this Inquiry Picture Lesson:

- [http://www.youtube.com/watch?v=ufoOJfzro2c](http://www.youtube.com/watch?v=ufoOJfzro2c)
- [http://www.science-projects-resources.com/how-to-make-a-potato-battery.html](http://www.science-projects-resources.com/how-to-make-a-potato-battery.html)
- [http://www.bbc.co.uk/schools/scienceclips/ages/8_9/circuits_conductors.shtml](http://www.bbc.co.uk/schools/scienceclips/ages/8_9/circuits_conductors.shtml)
- [http://www.bbc.co.uk/schools/scienceclips/ages/6_7/electricity.shtml](http://www.bbc.co.uk/schools/scienceclips/ages/6_7/electricity.shtml)
To see other picture lessons go to...

http://science-inquiry.wikispaces.com/