Lemon-Potato Battery Experiment

Name: _____ Date: _____ Period: _____

Watch the Lemon Battery experiment video first

Lemon-Potato Battery Experiment

- Insert a copper penny into one of the precut slits in your lemon or potato.
- Insert a galvanized nail near the other end of the lemon or potato. Make sure the nail and the penny do not touch.
- Attach an alligator clip to the penny and insert the other end onto the positive terminal of the voltmeter.
- Attach an alligator clip to the nail and insert the other end into the negative terminal of the voltmeter.
- Record the voltage observed using a voltmeter. Your teacher should have one or more of these that you can use.
- Join with one or two other student groups to combine your batteries. Hook up two or more batteries in series to the same voltmeter. That is, rather than attaching the negative (nail) end into the voltmeter, attach it to the positive end (penny) of another lemon, and connect the negative end of this second lemon into the voltmeter. Record what is observed.

Now answer these questions and be prepared to discuss your answers with the class:

1. What voltage did you record for one battery?

2. What voltage did you record for two batteries hooked up in series?

3. What characteristics of the lemon/potato, nail, and penny could be made to increase the voltage? (look at the galvanic chart and consider how different metals might perform)

4. What characteristics of the lemon/potato, nail, and penny might cause a decrease in the voltage?

5. Could a lemon battery power a light bulb? An LED?

6. What did you learn from this experiment? _____
   _____
   _____

7. How would you improve the learning experience of this exercise? _____
   _____

Instructor Signature: _____