Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Batteries: All Charged Up**

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



A Class Full of Experts

**Directions:** Because there are so many different battery types, your job is to become a class expert on one specific type of battery. Generally, batteries work from the same principal as we learned from the lemon battery experiment. First, we will delegate the type of battery that you will research. Then you will use the Internet to research information to complete the battery information chart. You need to complete a citation for each website that you reference for information. You may use the site http://citationmachine.net/ and type them on MS Word. The citation machine is located on the far left column of the page. Be sure to use APA citations. After 20 minutes you will present the information that you researched.



Paper Battery

Lead Sulfuric Acid

Alkaline / Zinc Carbon (non-rechargeable)

Battery Room

Nickel Cadmium (NiCd)

Penny Battery

Nickel Hydrogen (NIHZ)

Button Cell

Nickel Metal Hydride (NiMH)

Earth Battery

Lithium Ion (Li-ion)

Zinc – Air Battery

Lithium ion Polymer (Li-ion Polymer)

Frog Battery

Nanowire Battery

Molten Salt Battery



**REMEMBER**

1.  Research your battery type from various sources
2. Complete an APA citation for each website that you use
3. Review your information
4. As a specialized expert, present your information for the class

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Batteries: All Charged Up**

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Type of Battery:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What makes this type of battery function?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What is the battery’s best application?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**What is its life cycle?** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **What is its average charging time? If you can not find this information, please write and interesting fact about it.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



**PRICE – *Google It!***

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**DISADVANTAGES**

**ADVANTAGES**

You can put this on a separate piece of paper. Please have four for each section.

**Does it have a “memory”? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**What are its best charging practices?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Attach the Works Cited**

<http://citationmachine.net/>

<http://www.youtube.com/watch?v=tr5ZB1eFhwc>

<http://www.youtube.com/watch?v=nzgDffMcsUU>

<http://www.youtube.com/watch?v=s_8n2Qgguto>

<http://www.bized.co.uk/current/leisure/2006_7/250906.htm>

<http://xprizecars.com/2008/04/batteries-power-energy-and-uni.php>

<http://www.aant.com.au/Membership/BenefitsofMembership/tabid/62/Default.aspx>

<http://www.germes-online.com/catalog/87/90/449/page6/269287/rechargable_battery_packs.html>

<http://www.mobile-geeks.com/how-to-save-your-mobile-phones-battery-life-while-you-sleep/153/>

<http://www.germes-online.com/catalog/87/90/444/rechargeable_batteries.html>

<http://www2.northerntool.com/power-tools/power-tool-accessories/item-1591773.htm>

<http://farm3.static.flickr.com/2023/2278454056_c63956c9a7.jpg?v=0>

<http://www.science-projects-resources.com/how-to-make-a-potato-battery.html>

<http://www.sbsbattery.com/subpage_index.php?_subp_=93>

<http://en.wikipedia.org/wiki/Wet_cell>

<http://www.secondchancegarage.com/public/98.cfm>

<http://en.wikipedia.org/wiki/Dry_cell>

# Works Cited

AANT. (2007). *Benefits of Membership*. Retrieved Januray 27, 2009, from AANT: http://www.aant.com.au/Membership/BenefitsofMembership/tabid/62/Default.aspx

Biz/Ed. (2006, September 25). *Batteries Included*. Retrieved January 27, 2009, from Biz/Ed: http://www.bized.co.uk/current/leisure/2006\_7/250906.htm

Boyd, E. (2008, April 18). *Batteries: Power, Energy, and Units*. Retrieved January 27, 2009, from X Prize Cars: http://xprizecars.com/2008/04/batteries-power-energy-and-uni.php

Daneboe. (2007, September 17). *6 Volt Battery Hack*. Retrieved January 27, 2009, from YouTube: http://www.youtube.com/watch?v=nzgDffMcsUU

Daneboe. (2007, December 11). *Insane Car Battery Hack*. Retrieved January 27, 2009, from YouTube: http://www.youtube.com/watch?v=s\_8n2Qgguto

*Farm 3 Static*. (2009). Retrieved January 27, 2009, from Flickr: http://farm3.static.flickr.com/2023/2278454056\_c63956c9a7.jpg?v=0

GERMES LLC. (2005). *Rechargable Batteries*. Retrieved January 27, 2009, from GERMES: http://www.germes-online.com/catalog/87/90/444/rechargeable\_batteries.html

GERMES. (2005). *Rechargable Battery Packs*. Retrieved January 27, 2007, from Germes Online: http://www.germes-online.com/catalog/87/90/449/page6/269287/rechargable\_battery\_packs.html

LST LLC. (2008). *Get Better Battery Life in Five Minutes*. Retrieved January 27, 2008, from All Shadow . Com: http://www.allshadow.com/2008/07/21/get-better-battery-life-in-5-minutes/

Mobile Geeks. (2008, November 12). *How to Save Your Mobile Phone's Battery Life While You Sleep*. Retrieved January 12, 2009, from Mobile Geeks: http://www.mobile-geeks.com/how-to-save-your-mobile-phones-battery-life-while-you-sleep/153/

Northern Tool + Equipment Catalog Co. (2009). *Makita Nickel Metal Hydride Rechargeable Battery — 18 Volt* . Retrieved January 27, 2009, from Northern Tool + Equipment: http://www2.northerntool.com/power-tools/power-tool-accessories/item-1591773.htm

Science Projecsts Resources.com. (2008). *How to Make a Potato Battery*. Retrieved January 27, 2009, from Science Project Resources: http://www.science-projects-resources.com/how-to-make-a-potato-battery.html

Second Chance Garage, LLC. (2009). *Automotive Electrical Systems - Part 1*. Retrieved January 27, 2009, from Second Chance Garage: http://www.secondchancegarage.com/public/98.cfm

Storage Battery Systems Inc. (2006). *Flooded Batteries*. Retrieved January 27, 2009, from Storage Battery Systems: http://www.sbsbattery.com/subpage\_index.php?\_subp\_=93

Wikimedia Foundation Inc. (2009, January 8). *Dry Cell*. Retrieved January 27, 2009, from Wikipedia: http://en.wikipedia.org/wiki/Dry\_cell

Wikimedia Foundation Inc. (2009, January 24). *Rechargable Battery*. Retrieved Januray 27, 2009, from Wikipedia: http://en.wikipedia.org/wiki/Rechargable\_batteries

Wikimedia Foundation Inc. (2009, January 10). *Wet Cell*. Retrieved January 27, 2009, from Wikipedia: http://en.wikipedia.org/wiki/Wet\_cell