

NAME:

HONORS CHEMISTRY

SECTION:

Battery Project

For this project, you and your partner will research a type of battery. Your goal is to learn all of the parts present in this battery type, the overall redox reaction that occurs in this battery, the voltage of this battery, and common uses of this battery. You will construct a three-dimensional model of your battery and you will also give a short presentation (using Powerpoint or Google Slides) to the class about your battery. You need to be able to explain how your battery works to the class and major advantages or disadvantages of this battery. This project will be completed in lieu of a test for this unit.

List your battery type here: \_\_\_\_\_

**Presentations will be scheduled beginning Tuesday, 6/9—sign up for your presentation date!**

Include the following information in your presentation:

- The anode and the anode half reaction
- The cathode and the cathode half reactions
- The overall balanced redox reaction for this battery
- The maximum voltage produced by this battery
- A diagram of the major features of the battery, with labels
- A three-dimensional model of the battery, constructed from environmentally friendly or recycled materials (i.e., don't buy anything!), with a key clearly indicating major components of the battery
- Common uses of this battery
- Advantages and disadvantages of this battery
- Proper disposal of this battery
- References used, reported using correct format; web sites are printed out

Your project will be graded according to the following rubric:

Anode and cathode identified	/4 pts
Oxidation and reduction reactions identified	/4 pts
Overall redox reaction given	/4 pts
Maximum cell voltage reported	/4 pts
Diagram of major features of battery included in presentation <ul style="list-style-type: none"><li>• Shows anode, cathode</li><li>• Main parts are correctly identified</li></ul>	/8 pts
Three-dimensional model of battery <ul style="list-style-type: none"><li>• Major components of battery represented (4 pts)</li><li>• All parts clearly labeled (4 pts)</li><li>• Constructed from environmentally friendly materials (2 pts)</li></ul>	/10 pts
Common uses of battery type	/4 pts
Major advantages and disadvantages of battery	/4 pts
Proper disposal of battery discussed	/4 pts
Presentation Quality <ul style="list-style-type: none"><li>• See additional rubric: Oral Report with Support Material (6 pts)</li><li>• Equal participation of partners (3 pts)</li><li>• Multiple appropriate visuals (3 pts)</li><li>• All information presented in your own words, or properly quoted—Honor the Academic Integrity Policy</li></ul>	/12 pts
References <ul style="list-style-type: none"><li>• Presented using correct format</li><li>• Hard copies of web pages turned in</li></ul>	/4 pts

TOTAL

/62 pts

## **Oral Report with Support Material**

**6:** The overall presentation is highly convincing. The work is presented clearly and with poise. The facts, arguments, and conclusions provided are very persuasive. The presentation is mindful of purpose, audience and context, as reflected in the content and delivery of remarks and responses to questions, and the overall tenor of the performance. The presentation is thorough and logical and is neither overwhelming nor incomplete. There is obvious craftsmanship and attention to detail in the prepared materials: good use is made of polished and effective models; the visual aids contain good summary arguments and data in helpful diagrams, graphs, and charts. Language is appropriate and helpful - technical and accurate, but succinct and straightforward when needed. Minor errors in delivery, grammar, spelling, etc. if they occur, do not distract. This is a sophisticated and unusually effective set of performances and products.

**5:** The overall presentation is convincing. The work is presented clearly and smoothly. The supporting research is thorough and thoughtful. The key ideas, facts and arguments provided are to the point, well explained, and persuasive. Audience and purpose have been taken into account with minor lapses. The presentation is thorough and logical. There are helpful models and slides with diagrams, graphs and charts. Language is appropriate; minor errors, if they occur, do not distract. This is a polished set of performances and products.

**4:** The overall presentation is effective. The work is presented in a clear and reasonably smooth way. Content and delivery suggest that the students were mindful of purpose and audience, but there may be a few lapses into views that reflect personal interests only. There may be a few gaps or inadequacies in some of the research and ideas presented, but overall the key problems have been researched and well thought through. Supporting visuals and models are generally appropriate and useful, but with perhaps variance in style/clarity/accuracy/completeness. Language and style are appropriate but not always sufficiently precise or developed. Errors in delivery or mechanics do not interfere with the overall clarity and fluency of the work but may distract in places. Overall, this is a well-developed and plausible account.

**3:** The overall presentation is somewhat effective. The work is presented in an adequate way, but there may be awkwardness or errors in delivery and/or gaps in content that suggest a lack of preparation (and/or weaknesses in the overall research and proposal). The audience and purpose are addressed, though there may be lapses - a focus on students' personal interests instead of those of the audience or of the project's. There may be gaps or errors in some of the research and ideas presented; many, but not all of the key issues have been researched and thought through. Models and supporting material may be appropriate but not always clear, precise, or otherwise helpful. Language in the materials may be adequate but not always well-suited or refined enough to meet the demands of the challenge. Errors in mechanics or spelling may negatively impact on the materials. Key ideas may be insufficiently developed, justified or explained. The presentation is acceptable but not indicative of great control over all the technical issues and arguments and/or refinement of methods of presentation.

**2:** There are weaknesses in the overall presentation. The work suggests a lack of adequate planning and rehearsal AND/OR a failure to develop an adequate complete proposal. Audience and purpose may be often ignored: the performance may be wooden, too brief, or perfunctory. There may be major errors in the prose (sentence structure, usage, mechanics or spelling) that interfere with the fluency and impact of the ideas. There may be key places where ideas are not well supported, clarified, or developed. Language may be too imprecise, inappropriate, or simplistic to convey the intended ideas. Errors in mechanics or spelling may often negatively impact the presentation. Key ideas may be insufficiently developed, justified, explained, or worked through as a team. Or, the work suggests an overall lack of care and follow-through. This is an unconvincing set of performances and products, even if done in good faith.

**1:** The presentation is unpolished and ineffective. The performance suggests that either the student did not understand the task, the research required, and the information presented; and/or no thought and preparation was given to the presentation. The performance is incomplete and unrefined and/or filled with significant inaccuracies or gaps in content. There is little or no evidence of craftsmanship and polish. This is an unacceptable performance.