Thermochemistry Project

Expectations, and how to meet rubric standards.

Enthalpy of Chemical Reactions

 Demonstrates a clear understanding of chemical reactions and their relationship to enthalpy

- Explain your chemical reaction: show balanced chemical equation
- Explain process: what's happening?
- Explain enthalpy of reaction in your own words.

Calorimetric Calculations

 Complete and appropriate and correct theoretical calorimetric calculations are presented to explain how heat should work in the product

- Show and explain your actual (experimental) calculations.
- Show theoretical calculations
- How do they compare (% efficiency)?

Specific Heat

 Specific heat is thoroughly discussed and relevantly tied to the project

- Explain what specific heat is and how it relates to the project
- Why is it included in the Calorimetry calculation (q=mCΔT)?
- What does this calculation measure?
 - \circ C=q/(m Δ T)

Cost analysis

- Costs of all materials are included with a price point and demonstrate a full understanding of the necessity to produce profits in relation to costs
- Cost to produce each handwarmer including
 - Individual handwarmer
 - Equipment used
 - Time/manpower

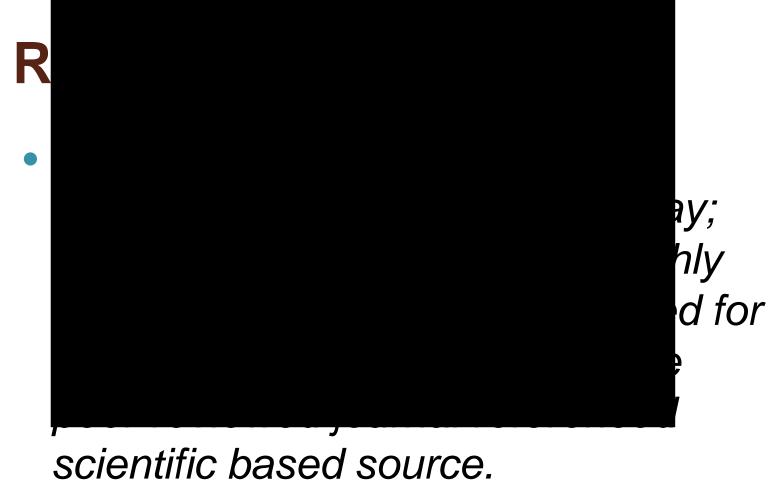
Chemical, Material and Environmental Safety

 Provides accurate, in-depth material and environmental safety data on all substances used in hand warmer

- Include MSDS (Health, flammability, reactivity and LD50)
- Proper disposal method
- Environmental effects
- Safety precautions for use AND production

Marketing of Product

 Marketing pitch is persuasive, directed, and concise and highlights the most important aspects of the product (ie. efficiency, heating time, temperature, safety, etc.)



Bibliography in MLA format

Product Design

 Product is clean, organized, and welldesigned (ie. functions appropriately and as expected)

- Well thought-out design
- Easy to use by consumer
- IT ACTUALLY WORKS

Presentation Rubric

Explanation of Ideas & Information

- presents information, findings, arguments and supporting evidence clearly, concisely, and logically; audience can easily follow the line of reasoning
- selects information, develops ideas and uses a style appropriate to the purpose, task, and audience
- clearly and completely addresses alternative or opposing perspectives

Organization

 meets all requirements for what should be included in the presentation

 has a clear and interesting introduction and conclusion

 organizes time well; no part of the presentation is too short or too long

Eyes & Body

 keeps eye contact with audience most of the time; only glances at notes or slides

uses natural gestures and movements

looks poised and confident

wears clothing appropriate for the occasion

Voice

- speaks clearly; not too quickly or slowly
- speaks loudly enough for everyone to hear; changes tone and pace to maintain interest
- rarely uses filler words
- adapts speech for the context and task, demonstrating command of formal English when appropriate

Presentation Aids

 uses well-produced audio/visual aids or media to enhance understanding of findings, reasoning, and evidence, and to add interest

 smoothly brings audio/visual aids or media into the presentation

Response to Audience Questions

 answers audience questions clearly and completely

 seeks clarification, admits "I don't know" or explains how the answer might be found when unable to answer a question

Participation in Team Presentations

 All team members participate for about the same length of time

 All team members are able to answer questions about the topic as a whole, not just their part of it