Name: _____

Thermal Engineering Lab Conclusion

Task Guide

You will be writing a conclusion to your thermal energy engineering lab.

Suggested Writing Structure

1. Describe your basic designs, including how your made sure they met the required constraints.
2. Give the results of your experiments, tell how well your design met the criteria, and explain how your designs did or did not meet your claim.
3. Explain how the conduction worked (at the particle level) and how conductors and insulators are different.
4. Describe an idea you have for how you could modify your design to make it perform even better. Why do you (scientifically) expect that this new design would be an improvement? (If your design was entirely successful, describe a new design you would like to test, why you are interested in testing it, and what type of results you would expect.)

Suggested vocabulary words and concepts to include in your writing:

- Heat
- Temperature
- Thermal Energy
- Conduction
- Conductor
- Insulator

Self-Assessment Rubric

	5	4	3	2
• Results are described with **both words and data**.				
• The **motion of particles in conduction** is described.				
• **Conductors and insulators** are contrasted.				
• **Vocabulary words** are defined and examples are given.				
• A **rationale** is given for how the device could be modified.				

Thermal Engineering Lab Conclusion

Rubric

____ LT: I can explain how heat is transferred between particles through conduction.

____ LT: I can tell, at the particle level, how an insulator is different from a conductor.

5	• Communicates the results of the experiment in detail and with data. • Explanation includes a detailed description of how conduction happens at the particle level. • Explanation clearly defines and gives examples of conductors and insulators, and describes how they work at the particle level. • Uses several scientific vocabulary words in writing. • Defines, gives examples, and illustrates vocabulary and concepts. • Describes and justifies how the device could be modified to better meet the claim.
4	• Communicates the most relevant results of the experiment. • Explanation includes a description of how conduction happens at the particle level. • Explanation defines and gives examples of conductors and insulators. • Uses scientific vocabulary words. • Describes how the device could be modified to better meet the claim.
3	• Communicates some results of the experiment. • Explanation describing conduction is brief, but on-topic, and may or may not refer to particles. • Examples of conductors and insulators are given. • Scientific vocabulary is used somewhat correctly • Describes, briefly, how the device could be modified to better meet the claim.
2	• The results of the experiment are listed. • Explanation of conduction is incorrect. • Conductors and insulators may be mentioned, but are not explained and examples are not given, or explanations or examples are incorrect. • Scientific vocabulary is used incorrectly. • Describes, briefly, how the device could be modified.
1	• No results are given. • No explanation is given. • Conductors and insulators are not mentioned. • Does not use scientific vocabulary. • Does not suggest modifications to the design.

BONUS: 6 – Explains how and why metal acts as a better conductor than other materials in terms of the atoms' ionic characteristics. OR Explains, gives examples, and makes predictions about how the spacing of particles affects conduction.