

Thermal Energy Conversion Using Peltier Power

Name _____

Phenomenon: Describe what you notice about the Peltier Plate?

Problem: Energy is lost as heat in virtually all energy transfers. Can a Peltier Plate help save energy lost as heat in machines or electronic devices?

Materials: 6 Peltier plates, hot water, ice, beakers, wire leads, multimeter, aluminum pans, light bulb.

Design a Circuit

1. Use the materials to create the largest amount of voltage possible.
2. Make sure you can create a voltage with one plate before you add additional plates.
3. Draw the first circuit you can get to work and label the amount of voltage it produced.
4. Create another circuit to maximize your voltage. Draw it and label the voltage. See if it will light the LED bulb.

Data:

Circuit #1

Voltage _____

Circuit #2

Voltage _____

Analysis:

1. What conditions produced voltage? Why?
2. What conditions produced the most voltage? Why?
3. In general, what could the Peltier Plates be used for?
4. Could the tailpipe of a car generate electricity? How?
5. What are the criteria (what would the plates have to do?) for remodeling the car?
6. What are constraints (what would be limitations?) to remodeling the car?