Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Exotic Metals Activity Sheet** Date:\_\_\_\_\_\_\_\_\_\_\_\_\_Group #:\_\_\_\_Period:\_\_\_\_\_

Use the charts provided to answer the following questions. Keep in mind the problem we are trying to solve.

Problem: Which elements will be most beneficial for use in thermoelectric generators?

|  |  |
| --- | --- |
| 1. Which group contains the elements that are the best conductors of heat energy? |  |
| 1. Which group contains the elements that are the worst conductors of heat energy? |  |
| 1. Which group contains the elements that are the best conductors of electricity? |  |
| 1. Which group contains the elements that are the worst conductors of electricity? |  |
| **Rate the following on a scale of 0-5 with 0 being not at all, 1 being poor and 5 being very good.** | |
| 1. Electrical conductivity of metals | 0 1 2 3 4 5 |
| 1. Electrical conductivity of metalloids | 0 1 2 3 4 5 |
| 1. Electrical conductivity of nonmetals | 0 1 2 3 4 5 |
| 1. Thermal conductivity of metals | 0 1 2 3 4 5 |
| 1. Thermal conductivity of metalloids | 0 1 2 3 4 5 |
| 1. Thermal conductivity of nonmetals | 0 1 2 3 4 5 |
| 1. Do you notice any major difference in the two charts? | |
| 1. Do you notice any major differences in the graphs that may lead us to solving our problem?   Problem: Which elements will be most beneficial for use in thermoelectric generators? | |
| 1. Identify a list of elements that would be poor conductors of thermal energy yet still conduct and an electric current. |  |
| 1. Decide on two elements that your group concludes will be the best for use in TEG’s | 1.  2. |

1. Describe why you chose these elements?
2. Is there a specific region of the periodic table your group focused on?
3. Why does this region of the periodic make the most sense to focus on?