Chemistry w/E&S Activity 02 "Melting Point Periodicity"

Your Name:_____ Period:_____

Problem: What type of periodicity exists for elements 1 - 56?

Hypothesis: _____

_____

_____

Materials: Laptop with Excel & periodic table with melting points

Caution: (no special concerns)

Procedure:
1. Log in to your computer, start Excel and enter the atomic number of each of the first 56 elements in cells A1 to A56.
2. Enter the melting point of each of the first 56 elements in cells B1 to B56.
3. Highlight cells B56 up to A1 so that both columns are darkened.
4. Click the "Insert" tab and then click on the little graph symbol and select a Scatter (X,Y) chart with lines and dots.
5. Click on the + symbol on the upper right of the chart and check "Axis Titles"
6. Give your chart the title "Periodicity of Melting Points by (your name)".
7. For the horizontal axis label type "Atomic Number" and for the vertical axis label type "Melting Point (K)".
8. Carefully right click on the circle pattern representing one of the Data points and select "Format Data Series".
9. Click on the paint can and then "Marker". Select "No Fill". Little open circles should represent your data points.
10. Print your graph. You only get to do this once so make certain you have correctly done all of the steps above.
11. Save your data and graph and log out of the computer.
12. On the graph fill in the circles for the Carbon Group elements and connect the circles with a smooth curve.
13. Fill in the circles for the Noble Gas elements and connect the circles with a "best fit" straight line.

Observations: (none)

Data: (none)

Conclusion: _____

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Questions:

1. What is the definition of periodicity?
2. Predict the approximate melting point of the 5th Carbon group element using your graph. Don't look this value up, just predict.
3. Predict the approximate melting point of the 6th Noble Gas element using your graph. Don't look this value up, just predict.
4. Identify another group of elements that show periodicity of melting points on your graph.
5. Do the melting points of elements 1 - 56 show complete, partial or no periodicity? Explain.

Answers: