

Advanced Chemistry 11

EXPLORING PERIODIC TRENDS
Graphing "Lab" Activity

In this activity, you will graph and analyze actual elemental data in order to answer the following question: *What's periodic about the periodic table?*

Prelab Assignment: Use your textbook or another resource to define the following terms:

1. What is a "period" on the Periodic Table?
2. What is a "group" or "family" on the Periodic Table?
3. Periodic –
4. Atomic Radius –
5. Ionization Energy –
6. Electronegativity -

Procedure:

1. Obtain a hard copy of the elemental data or download an electronic version from my website.
2. Graph the following data for the first 36 elements (produce four separate graphs):
 - Atomic Radius (y) versus Atomic Number (x)
 - Melting Point (y) versus Atomic Number (x)
 - Ionization Energy (y) versus Atomic Number (x)
 - Electronegativity (y) versus Atomic Number (x)
3. Be sure that...
 - Each graph has a descriptive title as well as your name or initials
 - Each graph contains labeled axes (with units, if appropriate)
 - Each graph is legible!

Analysis:

Answer questions 2-7 in complete sentences.

1. For each graph, NEATLY label each data point with the corresponding element symbol.
2. From your first graph, predict the atomic radii of Mg and Fe. Use the Internet to look up the actual values and compare them to your predictions.

