Name_____

Trends on the Periodic Table – Google Sheets

In this activity you will use Google Sheets to discover trends that occur within families and periods on the periodic table. Use the following data table for the procedure section.

Element	Atomic Number	Atomic Radius	Atomic Number	Ionization Energy
Hydrogen	1	0.037	1	1312
Helium	2	0.05	2	2372
Lithium	3	0.152	3	519
Beryllium	4	0.111	4	900
Boron	5	0.088	5	733
Carbon	6	0.077	6	1088
Nitrogen	7	0.07	7	1406
Oxygen	8	0.066	8	1314
Fluorine	9	0.064	9	1682
Neon	10	0.07	10	2080
Sodium	11	0.186	11	498
Magnesium	12	0.16	12	736
Aluminum	13	0.143	13	577
Silicon	14	0.117	14	787
Phosphorus	15	0.11	15	1063
Sulfur	16	0.104	16	1000
Chlorine	17	0.099	17	1255
Argon	18	0.094	18	1519
Potassium	19	0.231	19	418
Calcium	20	0.197	20	590

1. Use Google Sheets to make a data table as shown above
    a. In cell A1, type “Element”; in cell B1, type “Atomic Number”, etc
    b. Complete all the information and b\values in the appropriate columns
2. Make graph and plot “Atomic Number vs. Atomic Radius
    a. Highlight all filled cells in columns B and C
    b. Use “Insert”, “Chart”, and choose the Line graph.
    c. Then click “Insert”.
    d. Move your graph to the right of column E.
3. Make another graph of “Atomic Number vs. Ionization Energy”
    a. Highlight all filled cells in columns D and E
    b. Use “Insert”, “Chart”, and choose the Line graph.
    c. Then click “Insert”.
    d. Move your graph to the right of column E, below your first graph.

***Share your document with Mrs. Hemmert. (melanie.hemmert@clarencevilleschools.org)

*****Answer the questions on the back of this paper*****

Questions

1. Describe the graph: “Atomic Number vs. Atomic Radius” (What trends occur with atomic radii as atomic number increases?)

2. Describe the graph: “Atomic Number vs. Ionization Energy” (What trends occur with ionization energy as atomic number increases?)

3. How does this graphing activity relate to the periodic law?

4. Why does calcium have a larger radius than magnesium?

5. Why does oxygen have a smaller radius than carbon?

6. Why does sodium have a relatively low ionization energy?

7. Why does argon have a relatively high ionization energy?