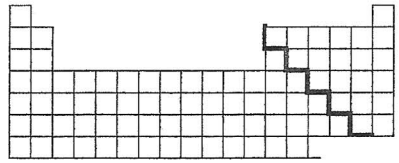
Name _____ Date _____ Period _____

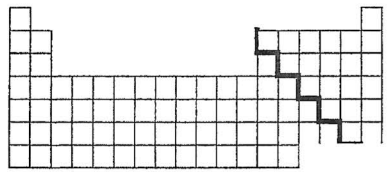
Periodic Trends Ws #1: Using the Periodic Law

1. Elements in the periodic table are listed in order of increasing _____ _____.
2. They are also arranged in _____ horizontal rows and vertical columns.
3. The elements were first arranged in this way in 1869 by _____ _____.
4. Families of elements with similar _____ _____ lie in the same vertical column in the periodic table.
5. Families are also called _____.
6. Use colored pencils to label the families on the periodic table below.

   a. alkali metals
   b. alkaline earth metals
   c. halogens
   d. noble gases
   e. transition metals



7. Most elements are metals
8. Metals have the following characteristic physical properties.
   1. lose electrons easily
   2. lustur (shiny)
   3. malleable (bendable)
   4. conductive (electricity & heat)
9. The relatively small number of elements that appear in the upper right hand corner of the periodic table are called _____.
10. Most metals are solids at normal temperatures.
11. Many nonmetals are gases.
12. One nonmetal, _____, is liquid at room temperature.
13. Elements that lie close to the stair step line on the periodic table show a mixture of metallic and _____ properties.
14. These elements are called _____ or _____.
15. The periodic table is a valuable tool for _____ knowledge and it helps us to _____the properties of elements.
16. Use colored pencils to label the metals, non-metals and metalloids



Name _____ Date _____

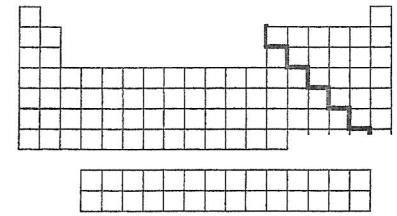
Periodic Trends Ws #3: Electron Configurations and the Periodic Table

Identify the symbol of the element described.

1. _____ The Carbon family element in period 4
2. _____ The only metal in the Nitrogen family
3. _____ The transition metal with the smallest atomic mass
4. _____ The alkaline earth metal with the largest atomic number
5. _____ The actinide with the smallest atomic number
6. _____ The period 5 alkaline earth metal
7. _____ The element with an electron configuration ending in $4d^9$
8. _____ The element with an electron configuration ending in $3p^4$
9. _____ The noble gas with an atomic mass less than gold, but more than silver
10. _____ The only non-metal in the Aluminum family

Use colored pencils to identify the following

11. s block, p block, d block and f block



Give the symbol, period, family, and block for the following

12. Fluorine Symbol ____ Period ____ Family _____ Block _____
13. Sulfur Symbol ____ Period ____ Family _____ Block _____
14. Nickel Symbol ____ Period ____ Family _____ Block _____
15. Silicon Symbol ____ Period ____ Family _____ Block _____
16. [Kr] $5s^1$ Symbol ____ Period ____ Family _____ Block _____
17. [Ar]$4s^2 3d^2$ Symbol ____ Period ____ Family _____ Block _____
18. Oxygen Symbol ____ Period ____ Family _____ Block _____
19. Silver Symbol ____ Period ____ Family _____ Block _____
20. Gold Symbol ____ Period ____ Family _____ Block _____
21. $1s^2 2s^2 2p^6$ Symbol ____ Period ____ Family _____ Block _____
22. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$
    Symbol ____ Period ____ Family _____ Block _____
23. $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^2$
    Symbol ____ Period ____ Family _____ Block _____
24. Uranium Symbol ____ Period ____ Family _____ Block _____

Name _____ Date _____

Periodic Trends Ws #5: Trends Review

1. Energy change involved in gaining an electron
   a. electron affinity c. electronegativity
   b. electron energy d. ionization energy

2. The energy required to remove an electron from an atom.
   a. electron affinity c. electronegativity
   b. electron energy d. ionization energy

3. Define electronegativity

4. Define valence electron

5. Explain the role of valence electrons in the formation of chemical compound.

6. What happens to electron affinity values when moving from left to right across the period on the periodic table?
7. What happens to ionization energy values when moving from left to right across the period on the periodic table?
8. What happens to the size of atomic radii when moving from left to right across the period on the periodic table?
9. Name the halogen with the least-negative electron affinity.
10. Name the alkali metal with the highest ionization energy.
11. Name the element in period 3 with the smallest atomic radius.
12. Compare and explain relationships between atomic radius and ionization energy.

13. Why do atoms get smaller as you move across a period?

14. Which element has greater IE? a) Ca or Mg b) Te or I
15. Which element has greater electronegativity? a) Cl or S b) Si or C
16. Order the following atoms from smallest to largest atomic radius. C, N, P
17. Name two families containing both metals and non-metals.
18. Why is a cation smaller than the neutral atom of that element?
19. Why is an anion larger than the neutral atom of that element?