

## PERIODIC TABLE INTRO MINI-LAB

What to turn in:

Colored periodic table

Questions 1-12

### OBJECTIVES

- To familiarize yourself with the layout of the periodic table.
- To examine general characteristics of the elements.

### COLORING

*You will need three light colors and three dark colors. Make a color key on your table.*

*Do not color elements 117 and 118.*

- With a dark color, draw in the “staircase.”
- Color the metalloids one light color of your choice.
- Color the metal element boxes a second light color of your choice.
- Color the nonmetals a third light color of your choice.
- Using a different dark color, draw a colored border around each gas element box.
- Using a different dark color, draw a colored border around each liquid element box.

### QUESTIONS *(You may write on the back on the table.)*

- 1) You knew some of the element symbols from previous years of school. List the chemical symbols and names of five elements that you already knew before you took this class.
- 2) Give the names and symbols of the three most important elements, in your opinion.
- 3) See #2. Why did you choose each of them?
- 4) Refer to the element chlorine on the periodic table.
  - a. What is its symbol?
  - b. What is its atomic number?
  - c. What is its atomic mass?
  - d. What state of matter is it most stable in at room temperature?
- 5) List one way that the periodic table is arranged in order.
- 6) Where are the Lanthanide and Actinide series elements located?

*The periodic table is arranged into vertical groups and horizontal periods. The placement of each element is deliberate.*

- 7) Give the *group* and *period* numbers of the following elements:  
(Example-- Na: group 1 or I A, period 3)
  - a. Rb (# 37)
  - b. W (# 74)
  - c. Zn (# 30)
  - d. B (# 5)
  - e. Ne (# 10)

MORE →

The atomic number corresponds to the number of protons in the nucleus of an atom.

- 8) How many *protons* do the following elements' atoms contain?
- He
  - Ir
  - Cf
  - P
  - Rn
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- 9) Give the *name* and *symbol* of the elements having these atomic numbers:
- 19
  - 47
  - 56
  - 82
  - 92
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Atoms can be identified by their state of matter.

- 10) Using the symbol key as a guide (use the wall chart, web, or textbook periodic table), identify the following elements, as solid, liquid, or gas:
- Zr (# 40)
  - Sn (# 50)
  - Hg (# 80)
  - Xe (# 54)
  - Sm (# 62)
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Element symbols only have one capital letter. Compounds are formed from more than one element, and they are easily identifiable by more than one capital letter in the formula.

- 11) Are the following *elements* or *compounds*?
- Na
  - NaCl
  - H<sub>2</sub>SO<sub>4</sub>
  - CO<sub>2</sub>
  - C
- 

The "staircase" on the periodic table is a dividing line between metals and nonmetals. Those elements on the staircase (except Al) are called metalloids.

- 12) Are the following elements METALS or NONMETALS?
- Fr (# 87)
  - Ca (# 20)
  - S (# 16)
  - He (# 2)
  - Lr (# 103)
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