

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
 - H₂SO₄
 - CO₂
 - C
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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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