

## Periodic Table Basics

Name \_\_\_\_\_

**Use your periodic table to answer each question.**

- How many elements in your table were:  
(a) solids? \_\_\_\_\_ (b) liquids? \_\_\_\_\_ (c) gases? \_\_\_\_\_
- Which elements had complete outer shells? Give the name and symbol for each.  
\_\_\_\_\_
- What do you notice about the location of the elements in Question #2?
- Which elements had only one valence electron? Give the name and symbol for each.  
\_\_\_\_\_
- What do you notice about the location of the elements in Question #4?
- What do you notice about the number of valence electrons as you move from left to right across a period (or row) in the periodic table? (Example: Na → Ar)
- What do you notice about the number of valence electrons as you move down a group or column in the periodic table? (Example: H → Li → Na)
- What do you notice about the number of energy levels or shells as you move down a group or column in the periodic table? (Example: H → Li → Na)
- What do you notice about the melting points as you move from left to right across a period (or row) in the periodic table? (Example: Li → Ne)
- What do you notice about the boiling points as you move from left to right across a period (or row) in the periodic table? (Example: Li → Ne)

11. Each column or group in the periodic table is called a family. Elements are organized into families according to their physical and chemical properties. Identify the elements that belong to each family based on the number of valence electrons. Give the name and symbol for each element.

HINT: You will only use the elements you colored in Step 8!

Alkali Metals - 1 valence electron \_\_\_\_\_

Alkaline Earth Metals - 2 valence electrons \_\_\_\_\_

Boron Family - 3 valence electrons \_\_\_\_\_

Carbon Family - 4 valence electrons \_\_\_\_\_

Nitrogen Family - 5 valence electrons \_\_\_\_\_

Oxygen Family - 6 valence electrons \_\_\_\_\_

Halides - 7 valence electrons \_\_\_\_\_

Noble Gases - Complete outermost shell

\_\_\_\_\_

12. What do you notice about the location of the elements in each family?

13. How would you classify hydrogen? Give at least one reason.

14. Do any of the elements have similar properties? If yes, list the names of the elements and the properties they have in common.

15. Do any of the elements have similar uses? If yes, list the names of the elements and the uses they have in common.

**Challenge:** Predict the number of valence electrons for each element based on its location in the Periodic Table of Elements. You will need to use the periodic table in your textbook.

Barium = \_\_\_\_\_ Lead = \_\_\_\_\_ Xenon = \_\_\_\_\_ Potassium = \_\_\_\_\_