The Periodic Table

Use colored pencils to color in the periodic table.

Follow the directions carefully…you only get one table to color.

1. The following elements are **metalloids**: B, Si, Ge, As, Sb, Te, and Po. Color them and be sure to color the key. *Read pages 118-119 to describe the properties of metalloids in your notes.*
2. The elements in *periods (rows)* 2 through 7 that are to the **left** of the “staircase” are **metals**. Chose a color to outline (don’t color!) the metals and label the key. *Read pages 118-119 and 135-131 to describe the properties of metals in your notes.*
3. The elements in *periods* 1 through 6 that are to the **right** of the “staircase” are **nonmetals**. Chose a color to outline (don’t color!) the nonmetals. Don’t forget hydrogen…it’s a little out of place. *Read pages 118-119 to describe the properties of nonmetals in your notes.*
4. The **alkali metals** are in *group (column)* 1. They have only one electron in their outer shell. They are VERY reactive and have a low melting point. Color the alkali metals. *Read page 119 to describe the properties of alkali metals in your notes.*
5. **Alkaline earth metals** are located in *group* 2. They have 2 electrons in their outer energy level. Color the alkaline earth metals. *Read page 120 to describe the properties of alkaline earth metals in your notes.*
6. The **noble gases** are found in *group* 18. Their outer energy level is filled, and they are very non reactive, colorless gases. Color the noble gases. *Read page 122 to describe the properties of noble gases in your notes.*
7. Halogens have seven electrons in their outer shell. They are located in *group* 17 on the periodic table. Halogens are the most reactive nonmetals and react with metals to form salts. Shade the halogens green. *Read pages 121-122 to describe the properties of halogens in your notes.*
8. The **transition elements** are found in groups 3 through 12 and periods 4 through 7. These elements have either one or two electrons in the outer energy level. They are often used to form alloys because they are hard and have high melting points. Color the transition metals.
9. Below the main part of the table are two rows of elements. These elements are part of the transition metal section. The top row is called the **Lanthanide Series** and the bottom section is called the **Actinide Series**. Label each series and color these rows using the same color you use for the transition metals. *Read pages 120-121 to describe the properties of the lanthanide and actinide series.*

|  |  |
| --- | --- |
| **Alkali Metals** Group # \_\_*Pg. 119*Properties of this Group: | **Lanthanides &** Period # \_\_**Actinides**  Period # \_\_*Pg. 120-121*Properties of these Periods: |
| **Alkaline Earth Metals** Group # \_\_*Pg. 120*Properties of this Group: | **Metals**  location: \_\_\_\_\_\_\_\_\_\_\_\_*Pg. 118-119, 125-131*Properties of Metals: |
| **Halogens**  Group # \_\_*Pg. 121-122*Properties of this Group: | **Metalloids**  location: \_\_\_\_\_\_\_\_\_\_\_\_*Pg. 118-119*Properties of Metalloids: |
| **Noble Gases** Group # \_\_*Pg. 122*Properties of this Group: | **Non-Metals** location: \_\_\_\_\_\_\_\_\_\_\_\_*Pg. 118-119*Properties of Non-Metals: |

G 1

G 2

G 3

G 4

G 5

G 6

G 7

G 8

G 9

G 10

G 11

G 12

G 13

G 14

G 15

G 16

G 17

G 18

P 1

P 2

P 3

P 4

P 5

P 6

P 7


# Metal Alkali Metals

## Nonmetal Alkaline Earth Metals

Metalloids Halogens

Transition Metals Nobel Gases

**Periodic Table Basics** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are the properties of metals? List 5 metals.

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1. What are the properties of nonmetals? List 5 nonmetals.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is a metalloid? List the metalloids.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What do you notice about the number of valence electrons as you move from left to right across a row or period in the periodic table? (Ex: Na Mg Al Si P S Cl Ar)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What do you notice about the number of energy levels or shells as you move down a group or column in the periodic table? (Ex: H Li Na)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Elements are organized into families according to their physical and chemical properties. Identify the number of valence electrons for each group of elements.

 Alkali Metals - \_\_\_ valence electron

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

 Boron Family - \_\_\_ valence electrons

 Carbon Family - \_\_\_ valence electrons

 Nitrogen Family - \_\_\_ valence electrons

 Oxygen Family - \_\_\_ valence electrons

 Halogens - \_\_\_ valence electrons

 Noble Gases - \_\_\_ valence electrons

1. How would you classify hydrogen? Why?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Predict the valence electrons for each element based on its location on the Periodic Table:

Barium = \_\_\_\_ Lead = \_\_\_\_ Xenon = \_\_\_\_ Francium = \_\_\_\_

1. Describe the properties of the following groups on the Periodic Table:

 Alkali Metals -

 Alkaline Earth Metals -

 Halogens -

 Noble Gases -

**Vocabulary: The Periodic Table**

*Choose words from the list to fill in the blanks in the paragraphs below.*

**Vocabulary List**

actinide series

alkali metals

alkaline earth metal

atomic mass

atomic number

energy level

family

group

halogen

lanthanide series

metal

metalloid

noble gas

nonmetal

period

periodic law

periodic table

transition element

Dmitri Mendeleev developed a chart-like arrangement of the elements called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. He stated that if the elements were listed in order of increasing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, their properties repeated in a regular matter. He called this the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the elements. The arrangement used today differs from that of Mendeleev in that the elements are arranged in order of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ developed the table in this way. Each horizontal row of elements is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and represents the \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ Each vertical column is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because of the resemblance between elements in the same column.

In rows 4 through 7, there is a wide central section containing elements, each of which is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Rows 6 and 7 also contain two other sets of elements that are listed below the main chart. These are called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(row 6) and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(row 7). Each of these elements, as well as any element to the left of the “staircase”, is classified as a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each of the elements at the right side of the chart is classified as a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each of the elements between these two main types, having a mixture of properties, is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Each of the elements in the column labeled 1A is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each of the elements in the column labeled 2A is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each of the elements in column in column 7A is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Each of the elements in column 8A is called a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.