

PERIODIC TABLE WEBQUEST

Part 1

Go to <http://periodic.lanl.gov/use.shtml>

Read though the text and graphics and answer the following questions.

1. What is the atomic number?

2. What is the atomic symbol?

3. What is the atomic weight?

Part 2

Go to <http://ippex.pppl.gov/interactive/matter/elements.html> and answer the following questions as you watch the tutorial.

1. Atoms with a given number of _____ are called _____.
2. Scientists have discovered more than _____ different elements.
3. If we remove one proton from Lithium, it becomes _____.
4. If we change the number of neutrons found in an element, it is called an _____.
5. The _____ arranges elements according to the number of _____ and the properties of the elements.
6. Elements in each column are called _____. The elements in each group have similar _____.

Continue using the interactive to answer the following questions about molecules.

7. When elements combine, they form _____.
8. The lowest energy level can hold _____ electrons. The next level can hold _____ electrons and the third level can hold _____ electrons.

Now go to <http://education.jlab.org/elementmath/index.html> and play the Element Math Game. Your settings should be 10 questions, tested on protons, neutrons, and electrons, and do not round the mass.

My score on the Element Math Game was: _____%

PART 3: GROUPS (Families) of the Periodic Table

Go to <http://www.chemicalelements.com/index.html> and http://www.chem4kids.com/files/elem_alkalimetal.html to answer the following questions and to color the 8 groups on the attached periodic table.

1. GROUP 1 (IA).

- a. Elements in Group 1 are called the _____.
- b. These are very _____ metals that do/do not occur freely in nature.
- c. These metals have _____ electron in their outer shell.
- d. List 3 properties of these metals:

_____ + _____ + _____

- e. Pick a color and shade the appropriate area on your periodic table handout.

2. GROUP 2 (IIA)

- a. Elements in Group 2 are called the _____.
- b. These are also very _____ metals that do/do not occur freely in nature.

c. These metallic elements have _____ electrons in their outer shell.

d. Name at least 2 common uses for elements from this family:

e. Pick a color and shade the appropriate area on your periodic table handout.

3. GROUPS 3 -12

a. The _____ elements in this group are called the _____.

b. List at least 3 properties of elements in this group:

_____ + _____ + _____

c. The transition metals have their valence electrons in _____.

d. Pick a color and shade the appropriate area on your periodic table handout.

4. GROUPS 13, 14, and 15

a. The _____ elements in this group are classified as _____.

b. All of these elements are _____ and have relatively high densities.

c. Name 2 properties that they have in common with the other metals.

_____ + _____

d. Pick a color and shade the appropriate area on your periodic table handout.

5. Draw the stair-step line on your periodic table to separate the metals from the non-metals. The elements found here are called the _____.

6. GROUPS 14, 15, and 16

a. These elements are called the _____ - _____.

b. These elements do/do not conduct heat and electricity well.

c. Pick a color and shade the appropriate area on your periodic table handout.

7. GROUP 17

a. The elements in this group are referred to as the _____ which means “_____”.

b. There are _____ elements in this group and they have _____ electrons in their outer shell.

c. The elements in this group may exist as _____, _____, and _____ at room temperature.

d. Pick a color and shade the appropriate area on your periodic table handout.

8. GROUP 18

a. The _____ elements in this group are called the _____.

b. They used to be called the _____ because they have _____ electrons in their outer shell.

c. Pick a color and shade the appropriate area on your periodic table handout.

9. The Lanthanoid and Actinoid Series

a. These elements all have incomplete sublevels, which is why they are found in the ___-block on the Periodic Table.

b. They are also called the _____.

c. Pick a color and shade the appropriate area on your periodic table handout.

BONUS – If you have time, you may complete this section for extra credit

Directions: Using the web sites listed below and a copy of the Modern Periodic Table, answer the following questions:

http://www.chem4kids.com/files/elem_families.html

<http://klbproductions.com/yogi/periodic/>

1. How many groups (families) are there in the Periodic Table? _____
2. How many elements are in your Periodic Table? _____
3. How many periods are there in your Periodic Table? _____
4. What is the basic theme of organization in the Periodic Table?

5. Why are the elements 57 through 70 and 89 through 102, found separately at the bottom of the table?

6. Look at the bold line shaped like a staircase on the right side of the table. What does it divide?

7. What are the metalloids? _____

Provide three examples of metalloids:

8. Periodic Table Trends:

- a. As you move left to right in a period the reactivity of a metal _____.
- b. As you move from top to bottom in a Group the reactivity of a metal _____.
- c. As you move left to right in a period the reactivity of a nonmetal _____.
- d. As you move from top to bottom in a Group the reactivity of a nonmetal _____.

Good Work!