**Periodic Table WebQuest**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Period\_\_\_\_\_\_\_\_

**Instructions: In each of the websites listed, find the information asked for.**

Part I: Go to the above link.   <http://www.ptable.com/>

1. Color and Label the following on Periodic Table #1.

* Metalloids (color in purple)
* Metals  ( color in light blue)
* Nonmetals  (color in yellow)
* Trace the Metalloid Line in black

2. Complete the following on Periodic Table #2.

* Color and label the Nobel Gases Green.  What is their group number\_\_\_\_\_\_\_\_\_\_?
* Color and label the Alkali Metals blue.  What is their group number\_\_\_\_\_\_\_\_\_\_?
* Color and label the Alkaline-Earth Metals red.  What is their group number\_\_\_\_\_\_\_\_\_\_?
* Color and label the Halogens orange?  What is their group number\_\_\_\_\_\_\_\_\_\_?

6.  List five elements that are familiar to you and something interesting about them

|  |  |
| --- | --- |
| Element | Something interesting about the element |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Part II: **“Major Players”**

Go to: <http://allperiodictables.com/ClientPages/AAEpages/aaeHistory.html>

Draw a picture of Mendeleyev                                           Draw a picture of John Dalton

Fill Out the Following Table

|  |  |
| --- | --- |
| Scientist | Contribution to the development of the periodic table |
| Greek thinkers |  |
| Lavoisier |  |
| John Dalton |  |
| Doberiner |  |
| Dechancourtois |  |
| Cannizaro |  |
| Newlands |  |
| Meyer |  |
| Mendeleyev |  |
| Moseley |  |
| Seaborg |  |

Part III: **“Get Organized Periodically”**

Go to: <http://www.chem4kids.com/files/elem_pertable.html>

1. Why are the elements placed in specific places on the Periodic Table?

1. Periods are \_\_\_\_\_\_\_\_ that run from left to right.

1. Elements in the same period have the same \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Every element in the first period has \_\_\_\_\_\_\_\_ shell for its \_\_\_\_\_\_\_.  Every element in the second period has \_\_\_\_\_\_\_\_\_\_ for its \_\_\_\_\_\_\_\_\_\_\_.  See the pattern?

1. Groups are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that run from top to bottom.

1. The elements of a group have the same number of \_\_\_\_\_\_\_\_\_\_\_\_ in their  \_\_\_\_\_\_\_\_\_\_\_ shell.

1. Every element in group one has \_\_\_\_\_\_\_\_\_ electron in its outer shell.  Every element in group two has \_\_\_\_\_\_\_\_\_\_\_ electrons in its outer shell.

1. Hydrogen is special because it can act like two groups, \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_.

1. Hydrogen sometimes is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an electron and sometimes it has an \_\_\_\_\_\_\_\_\_\_\_\_\_ electron.

1. Although helium has only \_\_\_\_\_\_\_\_\_\_ electrons in its outer shell, it is grouped with elements that have  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. The green elements on this table are called \_\_\_\_\_\_\_\_\_\_\_\_ elements.  They each have two electrons in their outer shell.

Part IV: **“Family Fun”**

Go to [http.//chemicalelements.com/](http://www.chemicalelements.com/)

**1.** Click on **Alkali Metals**(left bar) and answer the following questions.

a.       What is the group number? \_\_\_\_\_\_\_\_\_\_

b.      Are these metals reactive?  \_\_\_\_\_\_\_\_\_\_

c.       Do these metals occur freely in nature? \_\_\_\_\_\_\_\_\_\_

d.      How many electrons are in their outer shell? \_\_\_\_\_\_\_\_\_\_\_

e.       What are the three characteristics of ALL metals? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

f.        Are these metals soft or hard? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

g.       Name the two most reactive elements in this group?  \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_

h.       What happens when they are exposed to water? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Click on **Alkaline Earth Metals**(left bar) and answer these questions.

1. What is the group number? \_\_\_\_\_\_\_\_\_\_

1. Are these metals reactive? \_\_\_\_\_\_\_\_\_\_

1. Do these metals occur freely in nature? \_\_\_\_\_\_\_\_\_\_\_\_

1. How many electrons are in their outer shell? \_\_\_\_\_\_\_\_\_ (Hint: It’s the same as their oxidation number or group number.)

3. Click on **Transition Metals**(left bar) and answer these questions.

1. How many elements are in this group? \_\_\_\_\_\_\_\_\_\_\_\_

1. What are the group numbers?    \_\_\_\_\_\_\_\_\_\_ through \_\_\_\_\_\_\_

1. What are valence electrons? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Because the valence electrons are present in more than one \_\_\_\_\_\_\_\_\_\_\_\_\_ transition metals often exhibit several common  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Name the three elements in this family that produce a magnetic field.  \_\_\_\_\_\_\_\_\_,

\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_.

4. Click on **Other Metals**(left bar) and answer these questions.

1. How many elements are in this group? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are the group numbers? \_\_\_\_\_\_\_\_\_  through \_\_\_\_\_\_\_\_\_\_

1. How are these other metals similar to the transition metals? \_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. How are these metals different than the transition metals? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

1. List three physical properties of these other metals. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What are the oxidation numbers for this group? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Click on **Metalloids** to answer these questions**.**

a.       On your periodic table, draw the black stair-step line that distinguishes metals from nonmetals.

b.       Metalloids have properties of both \_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Define semiconductor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Name two metalloids that are semi-conductors.  \_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_.

1. This property makes metalloids useful in \_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. Click on **Nonmetals** to answer these questions**.**

a.       What are the group numbers? \_\_\_\_\_\_\_\_\_\_\_ through \_\_\_\_\_\_\_\_\_\_\_\_

b.       List four characteristics of ALL nonmetals. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c.       What two states of matter do nonmetals exist in at room temperature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d.      The nonmetals have no \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and do not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

e.       What are the oxidation numbers of the nonmetals? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. Click on the **Halogens** (left bar) to answer these questions**.**

a.       What is the halogen group number? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b.      Are halogens metals or nonmetals? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c.       The term “halogen” means \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and compounds containing halogens are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

d.      How many electrons are in their outer shell? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e.       What is their oxidation number? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

f.        What states of matter do halogens exist in at room temperature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Click on **Noble Gases**(left bar) and answer these questions**.**

a.       What is the group number? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b.      Why were these gases considered to be inert or stable? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c.       What is their oxidation number? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Click on Rare Earth Elements (Inner Transition) (left bar) and answer thesequestions.

a.      How many Rare Earth elements are there? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b.       Define trans-uranium. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c.      The Rare Earth metals are found in group \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and periods \_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.