# Science 9-Chemistry
# Web-Elements Assignment

## Introduction:

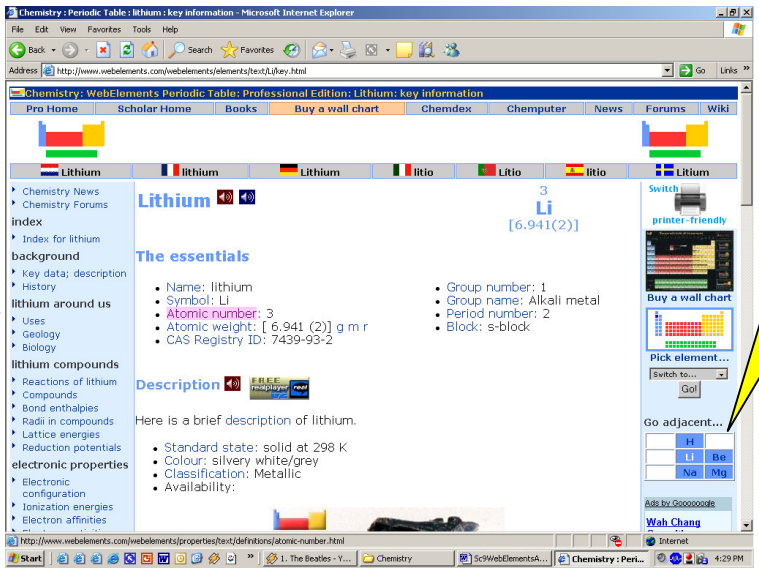
This assignment is designed to give you **experience** in using the internet, while at the same time, enable you to learn some **interesting facts** about some chemical elements. We hope you will have fun learning how to use this resource and maybe you will use it on your own sometime.

## Procedure:

1. You will log on to the computer network and access a "**Web-Elements**" program. This may be done by using a search engine or by going directly to the address. An address you may use is: **http://www.webelements.com/**
   Scroll down until you have a copy of the periodic table. Click your element once.

2.

On the left, you will see a legend with things like "key data" etc. Use this to get specific information about your element.




The "Go adjacent" box is a good way to switch from one element to the other!

**Use the "web-elements" periodic table to help you answer the following questions:**

1. **Go to Lithium, Sodium and Potassium.**

   What is the Group number for these 3 elements? _____

   What is the Group name these 3 elements belong to? _____

   Which of these 3 elements is in Period 2? _____

   Of these 3 elements, which has the highest atomic weight? _____

   What is the atomic weight of this element? _____

   Which of these 3 elements is contained in common salt? _____

   Lithium is shiny when first cut. What happens to it when left in the air? _____

   _____

   Which of these 3 elements is the seventh most abundant and makes up about 1.5 % by

   weight of the earth's crust? _____

   Which of these 3 elements ignites when placed in water? _____

   **At this point go to Lithium and click the "History" under "Background" in the left panel.**

   Sir Humphrey Davy discovered two of these elements. Which ones? _____ and _____

   Which country was lithium discovered in? _____

   **Click the "Uses" button in the left panel and answer the following:**

   Which of these 3 elements has compounds that are used in fireworks? _____

   Which of these 3 elements is in a compound we call "baking soda"? _____

   What is the real chemical name for baking soda? _____

   Which of these 3 elements is used in high temperature lubricants? _____

   _____ vapor is used in lamps for street lighting.

Potassium bromide, KBr, was used as an _____

Which of these 3 elements is used in batteries? _____

What is the name of the compound used to treat manic depressive (bipolar) disorders?

_____.

**Click "Biology" in the left panel**

Which two of these elements are important in nerve functions in humans? _____ & _____

What happens to sodium in your body after prolonged sweating? _____

_____What needs to be done? _____

_____

2. **Click on the element Helium and using it and the other members of its family, answer the following questions:**

What is the name of the Group to which Helium belongs? _____

What is the Group number? _____

What can you say about the colour of all the elements in this group? _____

Which one of these elements is used to fill lighter than air balloons? _____

What happens to a person's voice after breathing in helium? _____

_____

Which element in this family makes a good atmosphere for working with air-sensitive materials (like welding aluminum) since it is heavier than air and less reactive than $N_2$?

_____

**Go back to Helium and click "Uses" in the left panel.**

Air, which contains 80% nitrogen and 20% oxygen is not good for deep sea diving since nitrogen dissolves in the blood stream and if you ascend quickly it forms bubbles (the bends) which can be very harmful. Deep sea divers use an artificial atmosphere consisting

of 80% _____ and 20% oxygen.

Which of the noble gases is used to fill electric light bulbs? _____

Why is this used instead of ordinary air? _____

_____

Krypton is used in what kinds of lamps? _____

_____

Which **two** noble gases are used for arc welding and cutting reactive metals like aluminum? _____, and in countries where it is cheaper_____

Which noble gas is used in advertising signs? _____

**Now click the element Fluorine and then "Key data" on the left panel. Using it and the other elements in its group, answer the following:**

Fluorine belongs to a group called the _____

The group number is _____-

What is fluorine's atomic number? _____

What colour is fluorine? _____

What happens when you try to burn water in air? _____

What happens when you try to burn water in fluorine? _____

_____

What colour is Chlorine? _____

Which member of this family was used as a war gas in 1915? _____

Which is the only liquid non-metallic element? _____

Go to the site: http://library.thinkquest.org/19347/media/Goitre.jpg . What is shown in the picture? _____ Now come back to Web Elements. Lack of which element causes the condition shown in the picture? _____

**Click on Chlorine and click "Uses" in the panel on the left.**

Which two elements in the halogen family are used in water purification or water treatment? _____ and _____

Which halogen is used in the manufacture of PVC pipes for carrying water?

_____

A compound of which one of these elements is used as a disinfectant on wounds?

_____

Which of the halogens has no practical uses? _____

Give **11** products which are made with the help of the element chlorine _____

_____

Go to "History" to find out which 3 halogens were discovered in France? _____ _____ and _____. Which halogen was discovered in USA? _____. Which halogen was discovered in Sweden? _____

"Chloros" in Greek means _____

Go to "Biology" to find out which halogen is sometimes added to drinking water because it makes tooth enamel more resistant to bacteria. _____

Digestive juices in our stomachs contain which compound of chlorine?

_____

Very few people get goiter or "Derbyshire Neck", because _____ is added to _____ to make sure we get enough in our diet.

**Now, click on the element "Oxygen" and then "Key data" on the left.**

What colour is oxygen as a gas? _____What colour is liquid oxygen? _____

About what fraction of our atmosphere is oxygen? _____

What is the percent oxygen in the Martian atmosphere? _____

Could we live in the Martian atmosphere without carrying our own oxygen? _____

A form (allotrope) of oxygen which has the formula $O_3$ is called _____

How does $O_3$ in the atmosphere protect us? _____

_____

**Click the "Uses" button on the left panel.**

What type of welding is oxygen used for? _____

How is oxygen used in hospitals? _____

**Now go to Sulphur and click "Key data"**

Sulphur exists as a solid, liquid or gas in its elemental state _____

How is Sulphur spelled in the USA? _____

The Sulphur compound _____ can cause death very quickly by respiratory paralysis. People working on oil rigs must take a course about this gas before they will be hired!

**Click on "Uses"** and find which compound of Sulphur is used in automobile batteries

_____

Which element in Group 16 is used in making photocells, which convert light energy directly into electrical energy? _____

**Click "Phosphorus" and then "Key data"**

What three colours can elemental phosphorus occur as? _____

_____

Why shouldn't phosphorus be left sitting in the air? _____

_____

In what 3 places is phosphorus found in the body? _____

_____

**Go to "Uses"** and find 6 things that phosphorus is used in the manufacture of

_____

_____

**Now click the element "Hydrogen" and "Key data"**

What is the atomic number of hydrogen? _____

What is its atomic weight? _____

Are there any elements lighter than hydrogen? _____

Hydrogen make up about _____% of the universe by weight.

Hydrogen was once used in lighter than air balloons. Why isn't it used any longer?

_____

**Go to "Uses" to answer the following:**

Hydrogen is used in the _____ of fats and oils. This makes them more solid.

Hydrogen is used in _____ fuel. This helped lead to the explosion of which space

shuttle on January 25, 1986? _____