***The Atom & The Periodic Table of Elements***

***Atoms***

* Matter is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that takes up space and has \_\_\_\_\_\_\_\_\_\_\_. **All matter is made of \_\_\_\_\_\_\_\_\_\_\_\_\_.**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the basic building blocks of matter.** They make up \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ around us; Your desk, the board, your body, everything is made of atoms!

***Subatomic Particle***

Three subatomic particles make up every atom:



***Atoms to Elements***

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of particles in an atom identifes an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Every \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has a different number of atomic particles.
* Scientists have identified different materials containing different amounts of atomic particles and organized them into the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_.

***Elements***

* Science has come along way since Aristotle’s theory of Air, Water, Fire, and Earth.
* Scientists have identified \_\_\_\_ naturally occurring elements, and created about \_\_\_\_\_ others.
* The elements, alone or in combinations, make up our \_\_\_\_\_\_\_\_, our world, our \_\_\_\_\_\_\_, and in fact, the entire \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The most abundant element in the earth’s crust is \_\_\_\_\_\_\_\_\_\_\_.

***Periodic Table***

* The periodic table \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the elements in a particular way. A great deal of information about an element can be gathered from its \_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the period table.
* For example, you can \_\_\_\_\_\_\_\_\_\_\_\_ with reasonably good accuracy the physical and chemical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the element. You can also predict what other elements a particular element will \_\_\_\_\_\_\_\_\_\_\_\_\_\_ with chemically.
* Understanding the organization and plan of the periodic table will help you obtain basic information about each of the \_\_\_\_\_\_\_\_\_ known elements.

***Key to the Periodic Table***

* Elements are organized on the table according to their atomic \_\_\_\_\_\_\_\_\_\_\_\_\_, usually found near the top of the square.
	+ The atomic number refers to how many \_\_\_\_\_\_\_\_\_ an atom of that element has.
	+ For instance, hydrogen has \_ proton, so it’s atomic number is 1.
	+ The atomic number is unique to that element. No two elements have the \_\_\_\_\_\_\_\_ atomic number.

***What’s in a square?***

* Different periodic tables can include various bits of information, but usually:
	+ atomic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ atomic \_\_\_\_\_\_\_\_\_\_\_
	+ number of valence electrons
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_ of matter at room temperature.

***Atomic Number***

* This refers to how many \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ an atom of that element has.
* No two elements, have the \_\_\_\_\_\_\_\_\_\_ number of protons.

***Atomic Mass***

* Atomic Mass refers to the “\_\_\_\_\_\_\_\_\_\_\_\_\_” of the atom.
* It is derived at by adding the number of \_\_\_\_\_\_\_\_\_\_\_\_ with the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

***Atomic Mass Unit (AMU)***

* The unit of measurement for an atom is an \_\_\_\_\_\_\_\_\_\_\_\_\_. It stands for \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_.
* One AMU is equal to the mass of one \_\_\_\_\_\_\_\_\_\_\_\_.

***Atomic Mass Unit (AMU)***

* There are 6 X 1023 or 600,000,000,000,000,000,000,000 amus in one \_\_\_\_\_\_\_\_\_\_.
* (Remember that electrons are 2000 times smaller than one amu).

***Symbols***

* All elements have their own \_\_\_\_\_\_\_\_\_ symbol.
* It can consist of a \_\_\_\_\_\_\_\_\_ capital letter, or a capital letter and \_\_\_\_\_\_\_\_\_ or two lower case letters.

The elements of the periodic table can be divided into three main categories; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

***Properties of Metals***

* Metals are good conductors of \_\_\_\_\_\_\_\_\_\_\_ and electricity.
* Metals are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Metals are \_\_\_\_\_\_\_\_\_\_\_\_\_ (can be stretched into thin wires).
* Metals are \_\_\_\_\_\_\_\_\_\_\_\_\_ (can be pounded into thin sheets).
* A chemical property of metal is its reaction with water which results in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

***Properties of Non-Metals***

* Non-metals are \_\_\_\_\_\_\_\_\_ conductors of heat and electricity.
* Non-metals are \_\_\_\_\_\_\_\_\_\_\_\_ ductile or malleable.
* Solid non-metals are brittle and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ easily.
* They are \_\_\_\_\_\_\_\_\_\_\_.
* Many non-metals are \_\_\_\_\_\_\_\_\_\_\_\_\_.

***Properties of Metalloids***

* Metalloids (metal-like) have properties of \_\_\_\_\_\_\_\_\_\_\_\_ metals and non-metals.
* They are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that can be shiny or dull.
* They conduct heat and electricity \_\_\_\_\_\_\_\_\_\_\_\_\_ than non-metals but \_\_\_\_\_\_\_\_\_\_\_\_\_ as well as metals.
* They are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and malleable.

Elements in the periodic table are also grouped into \_\_\_\_\_\_\_\_\_\_\_, which are the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Elements in families have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ properties.

The elements are also categorized into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or horizontal \_\_\_\_\_\_\_\_\_\_\_\_\_.

Elements in periods do \_\_\_\_\_\_\_\_\_\_\_\_\_ have similar properties.