Periodic Chart of the Elements

1 H																	2 He
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca					25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn					35 Br	36 Kr
										47 Ag			50 Sn			53 I	54 Xe
										79 Au	80 Hg		82 Pb				86 Rn

Atoms and Their Composition

Elements are the basic substances that make up all _____.

An atom is the smallest particle of an element that still retains the _____ and _____ of the element.

Atoms are made up of even smaller particles. These _____ particles are _____, _____ and _____.

Protons and neutrons make-up the _____ or core of an atom and contribute to the _____ of an atom, while electrons are _____ and occupy the _____ that surround the nucleus of the atom (_____). Electrons are so _____ and _____ that they essentially contribute no overall weight to the atom.

Subatomic Particle	Charge	Symbol	Mass (g)	Radius (m)
Electron				
Proton				
Neutron				

Since subatomic particles are so light, chemists use a unit called an _____ for their measurement. Both protons and neutrons have a mass of _____.

Every Element has a unique:

- **Name**
- **Symbol**
- **Atomic number (Z)**
- **Atomic Mass (A)**

Mass
Number **A**

X atomic symbol

Atomic
Number **Z**

2. Decomposition

A decomposition reaction is the reverse to a synthesis reaction, a compound _____ into _____ or other _____.

The general equation for a decomposition reaction is: **C → A + B**

Example:

Typically, some form of _____ or type of _____ is needed to initiate a decomposition reaction.

A catalyst is a substance that controls the _____ of a reaction, without being _____ during the reaction or affecting the overall _____.

3. Single Displacement Reaction

A single Displacement reaction occurs when one _____ in a compound is _____ by another _____. This can occur in 2 ways, a _____ can replace a _____ or a _____ can replace a _____.

The general equation for a single displacement reaction is:

Examples:

How do you know that a single displacement reaction can occur or do they always occur?

For example, explain why the two above reactions occur but the following reaction does not?

In order to determine if an element will displace another element in a single displacement reaction you must refer to an _____.

If one element is _____ another element in the compound, it can be _____ _____ and a single displacement reaction will occur.

Non-metals, typically _____ are involved in Single Displacement Reactions. To determine who can bump out whom, you must refer to the _____ _____.

Predict if the following reactions will occur and what the products are:

Fluorine
Chlorine $I_2 + NaCl \rightarrow$ _____
Bromine
Iodine $F_2 + KBr \rightarrow$ _____