* The mid-term exam will cover all the topics covered in class for the 1st semester *(both the 1st and 2nd 9 weeks).*
* *You will be allowed one large notecard and the use of your periodic table*
* The topics include the following:

**Chemical Reactions** (this will be approximately 40% of the exam).The project we are working on will serve as a review of this information.

* **Identify example as either physical or chemical changes**
* **6 indicators of Chemical Reactions**
* **The 4 types of Chemical Reactions**
	+ **Define each**(Synthesis, Decomposition, Single Replacement Double Replacement)
	+ **Identify each** (Synthesis, Decomposition, Single Replacement Double Replacement)
	+ **BONUS:** Combustion
* **Balance Chemical Equations**
	+ Count atoms and balance equations
* Identify and/or define:
	+ **Coefficient**
	+ **Subscript**
	+ **Catalyst**
	+ **Activation energy**
	+ **Law of Conservation of Mass**
	+ **Endothermic and Exothermic Reactions**
* ***Rates of Reactions***
	+ Identify the **two factors** that **affect the rate** of a chemical reaction
	+ Identify and explain **how and why** each of the following factors affect the rate of a chemical reaction.
		- **Temperature**
		- **Surface Area**
		- **Concentration and Pressure**
		- **Catalyst**
	+ Interpret graphs related to the rates of reactions
	+ Determine the rate of reaction according to a graph. (i.e. amount of product/time)

Previous Topics that will be included on the mid-term EXAM: (this will be approximately 60% of the exam).

* **Steps of the scientific method**
	+ Know the steps in order
	+ Describe each step
* **Atomic Theory**
	+ Rutherford’s discovery/model/experiment
	+ Dalton’s model
	+ Thompson’s discovery/model
	+ Bohr model
* **Atomic Structure**
	+ Nucleus-protons and neutrons
	+ Electron locations
	+ Charge of electron, neutron and proton
* **Periodic Table**
	+ Determine number of protons, neutrons and electrons in a given element
	+ Determine the mass number of an element
	+ Determine the number of energy levels of an element
	+ Determine the number of valence electrons in an atom
* **Bonding**
	+ Determine the charge of an ion
		- Cation, charge? Lose or gain electron? Metal or non-metal?
		- Anion, charge? Lose or gain electron? Metal or non-metal?
	+ Define Ionic Bond
	+ Define Covalent Bond
	+ Identify an ionic bond
	+ Identify a covalent bond