

## 8<sup>th</sup> Grade Physical Science

### **Chemical Bonding and Reactions - Study Guide:**

**Test: 11-13-07**

Understand and learn the meanings of Key Science Words/Terms:

Electron, ion, ionic bonding, ionic compound, covalent bonding, covalent compound, chemical formula, atomic number, mass number, groups, periods, reactivity, subscript, exothermic reaction, endothermic reaction, reactants, products, molecule, metallic bond, law of conservation of mass, coefficients.

The following key concepts should be studied in preparation for this test:

1. What does a chemical formula show. Know how to identify the ratio of atoms in a compound. Know how atoms differ from elements. Text Pp: 243-247
2. Know how atoms form ions and understand the process of ionic bonding. Know how to calculate the charge on the ions to determine the number of each atom needed to make the compound. Understand how atoms form covalent bonds through the sharing of electrons. Understand how metal atoms form chemical bonds with each other? Compare the properties of ionic and covalent compounds. Text Pp: 248-261
3. Know about chemical changes and how they occur. Be able to identify evidence of a chemical change. Understand what a chemical reaction is and how it can be written. Text Pp 271-276
4. Describe and explain the law of conservation of mass. How does this relate to chemical reactions. Be able to balance given chemical reactions and know how it is controlled by the law of conservation of mass. Know how to use coefficients only when balancing chemical equations. Text Pp 280-286
5. Explain why chemical reactions absorb and release energy. Compare And contrast exothermic and endothermic reactions. Be able to explain Why a chemical reaction is endothermic or exothermic with respect to The bond energies of the reactants and products. Text Pp 288-293
6. Review the applicable chapter 8 & 9 summaries, vocabulary and review questions.

Some helpful strategies for studying:

- Write summaries of the topics using the Chapter review sections of the textbook.
- Review class work, activities, questions, worksheets and other homework.
- Use Flash cards for vocabulary practice.
- Write notes on each of the sections listed above.
- Create drawings and tables to help compare and contrast.
- Work with a friend and discuss the information.
- Check with your teacher on anything you are not clear about.
- Try to attend the morning review class.