

## **8<sup>th</sup> Grade Physical Science Final Exam Study Guide 2009-2010**

**\*\*All concepts and skills learned throughout the year may appear on this 18-page, 148-question final exam. It will consist of multiple choice, T/F, fill-in-the-blank, short answer, and essay questions. Study early and often. No notes or resources will be allowed during the test. Calculators will be permitted. The final exam will be a two-day exam held during the week of May 16th. Make-ups will be held the last day of school, so please plan on attending class during the designated final exam time. While the list below is meant to be all-encompassing, it may not include all topics.\*\***

- Mass vs. weight
- Periodic table organization (i.e. periods, groups, families, metals, nonmetals, valence electrons)
- Velocity vs. Speed vs. Acceleration (including calculating and units)
- Physical and chemical changes
- Elements, Atoms, Molecules, Compounds, Mixtures, Solutions
- Ionic vs. covalent chemical bonds
- Density, mass, volume (inc. units and calculations)
- All SI units and where the system is utilized
- States of matter (i.e. solid, liquid, gas) and phase changes (i.e. melting, boiling, etc.) and relative molecular position and speed
- Types, transformation, and transfer of ALL energy
- Law of conservation of matter and energy
- All kinds of graphs (i.e. speed & acceleration, etc.) and graphical relationships (i.e. inverse and direct)
- Subatomic particles (names, locations, and charge)
- Valence Electrons
- Nuclear fusion
- Element identification based on info provided in periodic table
- Chemical reactions and factors affecting them
- Chemical formulas
- Endothermic vs. exothermic
- Motion
- Forces (all types including balanced and unbalanced)
- Newton's Law of Motion
- Gravity
- Potential vs. kinetic energy
- Light and sound (types of waves, movement, comparison, use)
- Heat transfer (i.e. convection, conduction, radiation, etc.)
- Thermal energy
- Electromagnetic spectrum
- Insulators vs. conductors
- Various scientific values (i.e. boiling and freezing points, conversion factors, constants)
- Ohm's law
- Electric circuits (i.e. series vs. parallel)
- Pendulums
- Various models, including states of matter
- Electrolysis and water
- Greenhouse effect vs. global warming