2015 Science Standards—Chemistry

**COURSE FOCUS (Apply the following for each content standard.)**

**CHM.1 Identify SDA Christian principles and values in correlation with science.**

CHM.1.1 Recognize God’s power as Designer, creator, Sustainer, and Redeemer in the universe.

CHM.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man’s interpretation.

CHM.1.3 Develop stewardship and service attitudes toward health, life, and earth’s environment.

CHM.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.

CHM.1.5 Equip students with Christian perspectives on scientific issues.

**COURSE ABILITIES (Apply the following to each content standard.)**

**CHM.2 Develop abilities in science.**

CHM.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).

CHM.2.2 Understand and utilize the scientific method of problem solving.

CHM.2.3 Utilize the principles and methodologies of cooperative learning.

**CHM.3 Be able to apply science knowledge and skills to a variety of purposes.**

CHM.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.

CHM.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.

CHM.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).

CHM.3.4 Conduct research in the content area.

CHM.3.5 Engage in various uses of technology.

**COURSE CONTENT: Structure and Properties of Matter, Chemical Interactions, Stoichiometry, Solutions (Understand, explore, analyze, apply.)**

**CHM.4 Be able to understand basic chemistry concepts.**

CHM.4.1 Recognize God as the Designer and Creator of matter with inherent properties and laws.

CHM.4.2 Demonstrate understanding of structure and properties of matter.

CHM.4.3 Describe the interactions of matter and energy (bonding, chemical reactions, conservation).

CHM.4.4 Integrate balanced equations, conversion factors, ratio and proportion, and dimensional analysis.

CHM.4.5 Identify the types and properties of solutions.

**CHM.5 Be able to safely explore chemistry concepts using the scientific method.**

CHM.5.1 Explore the design of the periodic table and structure of molecules.

CHM.5.2 Examine the relationship between energy and chemical reactions (bond, activation, thermal).

CHM.5.3 Solve stoichiometric problems with appropriate chemical and mathematical skills.

CHM.5.4 Investigate factors that define and affect solutions (pH, concentration, temperature, pressure).

**CHM.6 Be able to analyze chemical data.**

CHM.6.1 Correlate the relationship between periodicity and molecular structure in the periodic table.

CHM.6.2 Interpret the relationship between energy and chemical reactions.

CHM.6.3 Evaluate conditions and factors that affect stoichiometric results.

CHM.6.4 Predict solution changes as factors are manipulated.

**CHM.7 Be able to apply the principles of chemistry to health, life, and the physical environment.**

CHM.7.1 Develop an increased respect for the Designer of all matter in the universe.

CHM.7.2 Utilize various chemical resources to influence lifestyle choices (warning labels, MSDS, nutritional labels, Internet resources).

CHM.7.3 Implement chemical principles to chemistry-related issues in society.