Adventist Education
A JOURNEY TO EXCELLENCE

Physics

2010

SECONDARY SCIENCE STANDARDS
IN SEVENTH-DAY ADVENTIST SCHOOLS

OFFICE OF EDUCATION | North American DivisionSeventh-day Adventist Church

Science Standards—Physics

COURSE FOCUS [Apply the following for each content standard.]

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

- PHY.1.1 Recognize God's power as Designer, Creator, Sustainer, and Redeemer in the universe.
- PHY.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man's interpretation.
- PHY.1.3 Develop stewardship and service attitudes toward health, life, and earth's environment.
- PHY.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.
- PHY.1.5 Equip students with Christian perspectives on scientific issues.

COURSE ABILITIES [APPLY THE FOLLOWING TO EACH CONTENT STANDARD.]

PHY.2 Develop abilities in science.

- PHY.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).
- PHY.2.2 Understand and utilize the scientific method of problem solving.
- PHY.2.3 Utilize the principles and methodologies of cooperative learning.

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

- PHY.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.
- PHY.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.
- PHY.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).
- PHY.3.4 Conduct research in the content area.
- PHY.3.5 Engage in various uses of technology.

COURSE CONTENT: Mechanics, Thermodynamics, Sound and Light, Electricity and Magnetism, Nuclear Physics [Understand, explore, analyze, apply]

PHY.4 Be able to understand relationships between matter and energy and how they interact.

- PHY.4.1 Recognize God as the Designer and Creator of our physical world and its governing laws.
- PHY.4.2 Identify the fundamental properties and laws of mechanics.
- PHY.4.3 Define the properties and laws of thermodynamics.
- PHY.4.4 Demonstrate an understanding of the sound and light principles.
- PHY.4.5 Describe the fundamental properties of electricity and magnetism.
- PHY.4.6 Understand the basic concepts of nuclear physics.

PHY.5 Be able to safely explore physics concepts.

- PHY.5.1 Test the properties and laws of mechanics (Newton's laws, work, power, velocity, energy, etc.).
- PHY.5.2 Explore the properties and laws of thermodynamics (laws, heat energy).
- PHY.5.3 Investigate the properties of sound and light (waves, optics, etc.).
- PHY.5.4 Examine the principles of electricity and magnetism (circuits, Ohm's law, forces, charges, fields).
- PHY.5.5 Research the principles of nuclear physics (quantum theory, radioactivity, dating methods, etc.).

PHY.6 Be able to analyze physics data.

- PHY.6.1 Predict the outcome of motion and force problems using the principles of mechanics.
- PHY.6.2 Correlate changes in energy to the laws of thermodynamics.
- PHY.6.3 Evaluate the conditions and factors which affect sound and light.
- PHY.6.4 Analyze various electrical circuits.
- PHY.6.5 Interpret the results of nuclear research.

PHY.7 Be able to apply principles of physics to health, life, and the physical environment.

- PHY.7.1 Strengthen belief in God as Designer and Creator by applying the laws of physics.
- PHY.7.2 Utilize the concepts of physics to improve lifestyle choices.
- PHY.7.3 Apply the study of physics to issues regarding nuclear energy.