



Biology II

2010

**SECONDARY SCIENCE STANDARDS
IN SEVENTH-DAY ADVENTIST SCHOOLS**

OFFICE OF EDUCATION | North American Division Seventh-day Adventist Church

Science Standards—Biology II

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

BI02.1 Identify SDA Christian principles and values in correlation with science.

- BI02.1.1 Recognize God’s power as Designer, Creator, Sustainer, and Redeemer in the universe.
- BI02.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man’s interpretation.
- BI02.1.3 Develop stewardship and service attitudes toward health, life, and earth’s environment.
- BI02.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.
- BI02.1.5 Equip students with Christian perspectives on scientific issues.

COURSE ABILITIES [Apply the following to each content standard.]

BI02.2 Develop abilities in science.

- BI02.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).
- BI02.2.2 Understand and utilize the scientific method of problem solving.
- BI02.2.3 Utilize the principles and methodologies of cooperative learning.

BI02.3 Be able to apply science knowledge and skills to a variety of purposes.

- BI02.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.
- BI02.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.
- BI02.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).
- BI02.3.4 Conduct research in the content area.
- BI02.3.5 Engage in various uses of technology.

COURSE CONTENT: Zoology, Embryology, Immunology, Microbiology, Botany [Understand, explore, analyze, apply]

BI02.4 Be able to understand major specialty areas of biology.

- BI02.4.1 Recognize God as the Designer and Creator of all life.
- BI02.4.2 Observe and model organisms representing the major groups of invertebrate and vertebrate animals.
- BI02.4.3 Describe the processes of gamete production, fertilization, and development.
- BI02.4.4 Identify the reactions, causes, and results of immune system function.
- BI02.4.5 Understand the diversity, impact, and diseases of microorganisms .
- BI02.4.6 Exhibit an understanding of global conservation efforts.
- BI02.4.7 Demonstrate understanding of simple and complex plant forms.

BI02.5 Be able to safely explore biology concepts.

- BI02.5.1 Manipulate invertebrate and vertebrate animals.
- BI02.5.2 Investigate the reproductive processes within organisms.
- BI02.5.3 Explore immune system disorders.
- BI02.5.4 Examine the role of microbes in epidemiology.
- BI02.5.5 Research the impact of plant life on the biosphere.

BI02.6 Be able to analyze biology concepts.

- BI02.6.1 Ascertain the increasing complexity from invertebrate to vertebrate animals.
- BI02.6.2 Compare embryological development of different organisms.
- BI02.6.3 Evaluate immune system responses at the cellular and molecular levels.
- BI02.6.4 Assess treatment methods and effectiveness in terms of microbial cause.
- BI02.6.5 Analyze the importance of plant life to human life.
- BI02.6.6 Validate God as the Author of life, while studying major areas of Biology II.

BI02.7 Be able to apply the higher concepts of Biology II to life.

- BI02.7.1 Strengthen belief in God as Designer and Creator by applying the higher concepts of Biology II.
- BI02.7.2 Utilize the concepts of Biology II to improve lifestyle choices.
- BI02.7.3 Apply the study of Biology II to ethical issues regarding life.