

Science Standards – Biology I



Course Focus (Apply the following for each content standard.)

BIO1.1 Identify the principles of SDA Christian values in correlation with science.

- BIO1.1.1 Recognize God's power as designer, creator, sustainer, and redeemer in the universe.
- BIO1.1.2 Acknowledge God as the author of all scientific principles and laws regardless of man's interpretation.
- BIO1.1.3 Develop stewardship and service attitudes toward health, life, and earth's environment.
- BIO1.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.
- BIO1.1.5 Equip students with Christian perspectives on scientific issues.

Course Abilities (Apply the following to each content standard.)

BIO1.2 Develop abilities in science.

- BIO1.2.1 Critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).
- BIO1.2.2 Problem solving (scientific method).
- BIO1.2.3 Cooperative learning.

BIO1.3 Be able to apply science knowledge and skills to a variety of purposes.

- BIO1.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.
- BIO1.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.
- BIO1.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).
- BIO1.3.4 Conduct research in the content area.
- BIO1.3.5 Engage in various uses of technology.

Course Content: Topics: Cell Structure and Processes, Genetics, Taxonomy, Ecology (understand, explore, analyze, apply)

BIO1.4 Be able to understand basic biological concepts.

- BIO1.4.1 Acknowledge God as creator of life while recognizing divergent theories.
- BIO1.4.2 Demonstrate understanding of cellular structures and processes.
- BIO1.4.3 Describe the dynamics of genetics and biotechnology.
- BIO1.4.4 Investigate taxonomy and the relationships among living organisms.
- BIO1.4.5 Comprehend the interdependence between organisms and their environment.

BIO1.5 Be able to safely explore biological concepts using the scientific method.

- BIO1.5.1 Manipulate cellular models and samples.
- BIO1.5.2 Test concepts of Mendelian inheritance and evaluate genetic manipulation.
- BIO1.5.3 Classify, compare, and examine organisms.
- BIO1.5.4 Investigate relationships between organisms within their niche.
- BIO1.5.5 Research the dynamics, organization, and problems in earth's biomes.

BIO1.6 Be able to analyze biological data.

- BIO1.6.1 Compare and contrast cell diagrams and processes.
- BIO1.6.2 Draw conclusions about genetic trends and the ethical ramifications of biotechnology.
- BIO1.6.3 Evaluate the rationale for the current system of taxonomy.
- BIO1.6.4 Determine how the relationships between organisms affect the balance of the ecosystem.
- BIO1.6.5 Assess the environmental issues facing local ecosystems and earth's biomes.
- BIO1.6.6 Validate God as the author of life, while evaluating aspects of divergent theories of origin.

BIO1.7 Be able to apply the principles of biology to health, life, and earth's environment.

- BIO1.7.1 Develop a personal ethical value system regarding a world view of life.
- BIO1.7.2 Utilize biological concepts to influence lifestyle choices.
- BIO1.7.3 Minimize damage to the environment by practicing good stewardship.