



# Ecology

2010

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

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

# Science Standards—Ecology

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

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

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

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

### **ECO.2 Develop abilities in science.**

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

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

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

## **COURSE CONTENT: Principles, Population Dynamics, Natural Resources, Energy, Conservation [Understand, explore, analyze, apply]**

### **ECO.4 Be able to understand the basic principles of Ecology/Environmental Science.**

- ECO.4.1 Recognize God as the Designer and Creator of our earth.
- ECO.4.2 Understand the factors that influence organisms within their environment (trophic levels, symbiosis, food chain/web, biomes).
- ECO.4.3 Demonstrate understanding of the nature of population dynamics (plant, animal, and human).
- ECO.4.4 Identify non-energy resources and their effects on the environment.
- ECO.4.5 Classify conventional and alternative energy sources.
- ECO.4.6 Exhibit an understanding of global conservation efforts.

### **ECO.5 Be able to safely explore Ecology/Environmental Science concepts.**

- ECO.5.1 Examine relationships between organisms within the environment.
- ECO.5.2 Investigate the factors affecting population dynamics.
- ECO.5.3 Survey advantages, disadvantages, and uses of conventional and alternative energy sources.
- ECO.5.4 Explore conservation methods for natural resources.

### **ECO.6 Be able to analyze Ecology/Environmental Science concepts.**

- ECO.6.1 Evaluate factors affecting relationships between organisms within the environment.
- ECO.6.2 Research and predict how factors affect population dynamics.
- ECO.6.3 Compare and contrast advantages, disadvantages, and uses of conventional and alternative energy sources.
- ECO.6.4 Analyze current natural resource conservation methods.

### **ECO.7 Be able to apply fundamentals of Ecology/Environmental Science to life and the earth’s environment.**

- ECO.7.1 Strengthen belief in God as Designer and Creator by applying the fundamentals of Ecology/Environmental Science.
- ECO.7.2 Utilize the concepts of Ecology/Environmental Science to improve lifestyle choices.
- ECO.7.3 Apply the study of Ecology/Environmental Science to ethical issues regarding the environment.