

## **a-g Life Science**

### **Course Description:**

This course should include an introductory practical study of the characteristics and functions of living organisms. The course should emphasize an introduction to the scientific method, the development of and awareness of the processes that keep living organisms alive, as well as the ecological relationships between them. The student should also have an introduction to the scientific/biological theories of the origins of life.

**Prerequisite(s):** None

**Length of Course:** One year required for graduation

**Year in School Taken:** 9 or 10

### **Course Objectives/Details:**

Upon completion of this course each student will:

- understand the methods for conducting and implementing the scientific method (process) and how to use and apply the various skills, tools and equipment to aid scientific experimentation and research.
- understand the fundamental structure and function of plant and animal cells.
- be able to identify and understand the life and reproductive cycles of sexual and asexual organisms.
- understand the scientific/biological theories concerning the origins of life.
- be able to identify and explore how human activity can effect animals, plants, climate, and ecosystems.
- understand the vital structures and functions of living organisms specifically photosynthesis, reproduction, cells, tissues, organs, and whole organisms.

### **Laboratory Assignments:**

Using Scientific Method  
Comparing Plant and Animal Cells and Tissues  
Observing Osmosis  
Photosynthesis and Respiration  
Making a Model  
Classifying Seeds  
Observing and Culturing Bacteria  
Comparing Algae and Protozoa  
Observing Bread Mold  
The Life Cycle of a Fern  
Inside a Seed /Parts of a Flower  
Observing a Segmented Worm

Metamorphosis in Frogs  
Classifying Vertebrates  
Observing Social Behavior in Ants  
Protein Digestion  
Comparing Blood Cells  
The Effects of Respiration  
Predicting and Experimenting with Reaction Time  
Preventing Microorganism Growth  
Studying the Ecosystem

**Methods for Evaluating Student Performance:**

Evaluation of student performance is based on individual abilities, interests, and talents. Methods by which student progress is assessed will be through a variety and/or combination of methods. The methods available include but are not limited to the following:

- Monthly review of work by education specialist (credentialed teacher),
- Portfolios
- Parent facilitator and education specialist observation
- Student demonstrations,
- Student grades,
- Student work samples
- Written examination
- Research projects

**Texts:**

Glencoe Science: An Introduction to Life Science  
Glencoe McGraw-Hill, 1999  
ISBN: 0028277775

Nelson Balanced Science: Living World, by Roberts  
South-Western Publishing Company, 1995  
ISBN: 0174386656