



Science/Biology

**GRADE LEVEL:**

Jr. High and High School

# Scope and Sequence

## **COURSE OVERVIEW:**

The field of biology focuses on living things, from the smallest microscopic protozoa to the largest mammal. In this book you will read and explore the life of plants, insects, spiders and other arachnids, life in water, reptiles, birds, and mammals, highlighting God's amazing creation.

For most of history, biologists used the visible appearance of plants or animals to classify them. They grouped plants or animals with similar-looking features into families. Starting in the 1990s, biologists have extracted DNA and RNA from cells as a guide to how plants or animals should be grouped. Like visual structures, these reveal the underlying design or creation.

## **FEATURES:**

Filled with photos and illustrations to enhance the learning perspectives, this text contains concepts for discussion and review, detailed content explanations, chapter exams, and a thorough glossary of terms that can be utilized for reviewing vocabulary or spelling ability. Answers to the chapter tests are available in the back of the book. This title is available as a stand-alone text or in a special "Exploring Series" package that includes: biology, chemistry, Earth science, ecology, mathematics, history of medicine, and physics.

## **CONTENT FOCUS:**

### **Chapter 1: The Hidden Kingdom**

*Concepts for discussion:*

- What were the first two categories of living things?
- Why were mushrooms difficult to classify as plants?
- What classification did scientists give to mushrooms?

### **Chapter 2: The Invisible Kingdom**

*Concepts for discussion:*

- What invention made little life visible?
- Can life invisible to unaided eyes be the cause of disease?
- Why are protista and bacteria different from plants and animals?

### **Chapter 3: Exploring Biological Names**

*Concepts for discussion:*

- Are canary birds named after dogs?
- Is a panther a particular breed of cat?
- What is the goal of biological classification?

### **Chapter 4: Growing a Green World**

*Concepts for discussion:*

- How do plants spread their seeds to distant locations?
- Do plants reproduce solely from seeds?
- What parts of plants are eaten as food?

### **Chapter 5: Food for Energy and Growth**

*Concepts for discussion:*

- What crop did Native Americans use as a staple food?
- What food can the body quickly use for energy?
- What food does the body use for long-term storage of energy?
- What food does the body use for growth and repair?

### **Chapter 6: Digestion**

*Concepts for discussion:*

- Why do human teeth have different shapes?
- How did biologists learn how the stomach digested food?
- Why is a sense of taste important?

### **Chapter 7: Plant Inventors**

*Concepts for discussion:*

- How can plants be grown in cold weather?
- What can be done to reduce an oversupply of certain crops?
- How do some plants restore nitrogen to the soil?



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**Chapter 8: Insects**

*Concepts for discussion:*

- How are legs used to classify arthropods?
- Why are some insects studied more thoroughly than others?
- How do butterfly and moth antennae differ?

**Chapter 9: Spiders and Other Arachnids**

*Concepts for discussion:*

- How do spiders and insects differ?
- Why was the tarantula portrayed as a threat to humans?
- Why might a person incorrectly think a pet hermit crab is dead?

**Chapter 10: Life in Water**

*Concepts for discussion:*

- How can a school of fish all turn together?
- How can humans breathe underwater?
- How can frogs reveal the health of the environment?

**Chapter 11: Reptiles**

*Concepts for discussion:*

- Why must reptiles warm their bodies before seeking prey?
- How do some snakes see prey in the dark?
- How do geckos walk upside down on a ceiling?

**Chapter 12: Birds**

*Concepts for discussion:*

- How can the same species of bird have different appearances?
- Why did the dodo and passenger pigeon become extinct?
- How does migration reduce the number of predators?

**Chapter 13: Mammals**

*Concepts for discussion:*

- How do mammals differ from other vertebrates?
- What mammals dig underground, swim underwater, and fly in the air?
- What is the fastest mammal and largest mammal?

**Chapter 14: Frauds, Hoaxes, and Wishful Thinking**

*Concepts for discussion:*

- What is a fraud?
- What is a hoax?
- What amazing discovery did a 12-year-old girl make?