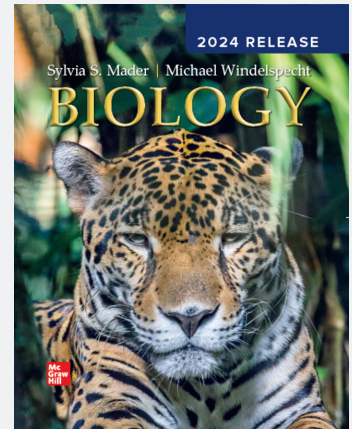


# Biology

Sylvia Mader | Michael Windelspecht  
2024 Release



## Overview

*Biology* is a traditional, comprehensive introductory biology textbook with coverage from cell structure and function to the conservation of biodiversity and is appropriate for a one- or two-semester biology course. *Biology* focuses on three themes: systems, evolution, and the nature of science. These themes are integrated into all aspects of the textbook, from the unit learning outcomes to the theme-based feature readings in the text. Recognizing that instructors are increasingly being asked to engage their students while still providing them with a firm foundation in core biological principles, the authors of *Biology* integrated relevant content throughout the text to better allow students to make connections and think more scientifically.

### Depth of Topic Coverage

Low      High

### Duration of Course

2-semester

## What You Need to Know

### Following the Themes

introduces the relationship of the chapter's content to each of the three core themes.

### Connecting the Concepts

reminds the student of the relationships between Following the Themes content introduced in the chapter opening.

### Connecting the Concepts

art visually illustrates the relationship of chapter coverage to the three central themes.

### Relevancy readings and real-life application of concepts

are integrated throughout the text, enforcing the idea that science affects students' everyday lives and increases interest in the topics covered.

## Table of Contents

### Unit 1 The Cell

- 1 Biology: The Study of Life
- 2 Basic Chemistry
- 3 The Chemistry of Organic Molecules
- 4 Cell Structure and Function
- 5 Membrane Structure and Function
- 6 Metabolism: Energy and Enzymes
- 7 Photosynthesis
- 8 Cellular Respiration

### Unit 2 Genetic Basis of Life

- 9 The Cell Cycle and Cellular Reproduction
- 10 Meiosis and Sexual Reproduction
- 11 Mendelian Patterns of Inheritance
- 12 Molecular Biology of the Gene
- 13 Regulation of Gene Expression
- 14 Biotechnology and Genomics

### Unit 3 Evolution

- 15 Darwin and Evolution
- 16 How Populations Evolve
- 17 Speciation and Macroevolution
- 18 The Origin and History of Life
- 19 Taxonomy, Systematics, and Phylogeny

### Unit 4 Microbial Evolution

- 20 Viruses, Bacteria, and Archaea
- 21 Protist Evolution and Diversity
- 22 Fungi Evolution and Diversity

### Unit 5 Plant Evolution and Biology

- 23 Plant Evolution and Diversity
- 24 Flowering Plants: Structure and Organization
- 25 Flowering Plants: Nutrition and Transport
- 26 Flowering Plants: Control of Growth Responses
- 27 Flowering Plants: Reproduction

### Unit 6 Animal Evolution and Diversity

- 28 Invertebrate Evolution

Continued on next page.

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## This Title has Gone Evergreen

This title is transitioning to an evergreen delivery model. This means you will have the most relevant and up-to-date content, tools, and accessibility delivered directly to your existing McGraw Hill Connect® course, all without switching editions or building a new course from scratch. If you use McGraw Hill eBook your content will be updated automatically. Please talk to your representative about your options if you require a print component.

A complete list of Release Notes for this title is available within your Connect course at [connect.mheducation.com](https://connect.mheducation.com)

## Big Picture Changes in This Release

Enhancements to Connect include new Virtual Lab simulations and associated pre- and post-lab assessments, updated Relevancy Modules and Biology Prep, and new NewsFlash exercises and Question Bank content.

New End of Chapter material has been added to encourage critical thinking and to help students make connections between chapter content and daily life.

Content and imagery reviewed to identify areas in the narrative and visual presentation where content could be made more sensitive to, and representative of, the broad spectrum of learners.

Diversity in Science boxed feature created to emphasize the contributions of unrecognized scientists to our understanding of biology.

## Table of Contents *continued*

29 Vertebrate Evolution

30 Human Evolution

### Unit 7 Comparative Animal Biology

31 Animal Organization and Homeostasis

32 Circulation and Cardiovascular Systems

33 The Lymphatic and Immune Systems

34 Digestive Systems and Nutrition

35 Respiratory Systems

36 Body Fluid Regulation and Excretory Systems

37 Neurons and Nervous Systems

38 Sense Organs

39 Locomotion and Support Systems

40 Hormones and Endocrine Systems

41 Reproductive Systems

42 Animal Development and aging

43 Animal Behavior

### Unit 8 Ecology

44 Population Ecology

45 Community and Ecosystem Ecology

46 Major Ecosystems of the Biosphere

47 Conservation of Biodiversity