

# BIOLOGY

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## SCOPE AND SEQUENCE

### CHAPTER 1

Key topics: scientific method, early history of science, Darwin's theory of evolution (strengths & weaknesses), characteristics of living organisms, chemical elements of life, atomic structure, atomic bonding, compounds & molecules, chemical reactions, carbs, lipids & proteins, enzymes, nucleic acids, optical isomers

### CHAPTER 2

Key topics: cell structure & function, cell walls & membranes, inside the cell, the energy of life, glycolysis, krebs cycle, electron transport chain, photosynthesis, spontaneous generation, cell growth, cell division, mitosis, meiosis, cell cycle, cell order

### CHAPTER 3

Key topics: Mendel & his work, principles of heredity, human genetics, discovery of DNA, DNA structure, DNA replication process, protein synthesis, RNA structure, gene expression, mutations & human genetic disorders, genetic engineering, special topics in molecular genetics

### CHAPTER 4

Key topics: scientific method, construction of an hypothesis, Darwin vs DNA, microevolution vs macroevolution, mutations & evolution theory, geologic column, fossil facts & fabrications, emergence of man, Big Bang Theory, anatomy, embryology, natural law, flagellum, irreducible complexity, mathematical challenges to evolution theory, catastrophist theory

### CHAPTER 5

Key topics: Earth's unique attributes, Miller-Urey vs Pasteur, taxonomy, six kingdoms of living organisms: bacteria (2), protista, fungi, plantae, anamalia; invertebrates & vertebrates: skeletal & muscular systems; review: outer space to bacteria; young earth theory

### CHAPTER 6

Key topics: bacteria, bacteria reproduction, roles of bacteria, viruses, protista, slime & water molds, protist diseases, simple cell, genome map, fungi, algae