Table of contents

- 1 Introduction: Exploring Life
- Unit 1 The Chemistry of Life
- 2 The Chemical Context of Life
- 3 Water and the Fitness of the Environment
- 4 Carbon and the Molecular Diversity of Life
- 5 The Structure and Function of Macromolecules
- Unit 2 The Cell
- 6 A Tour of the Cell
- 7 Membrane Structure and Function
- 8 An Introduction to Metabolism
- 9 Cellular Respiration: Harvesting Chemical Energy
- 10 Photosynthesis
- 11 Cell Communication
- 12 The Cell Cycle
- Unit 3 Genetics
- 13 Meiosis and Sexual Life Cycles
- 14 Mendel and the Gene Idea
- 15 The Chromosomal Basis of Inheritance
- 16 The Molecular Basis of Inheritance
- 17 From Gene to Protein
- 18 The Genetics of Viruses and Bacteria
- 19 Eukaryotic Genomes: Organization, Regulation, and Evolution
- 20 DNA Technology and Genomics
- 21 The Genetic Basis of Development
- Unit 4 Mechanisms of Evolution
- 22 Descent with Modification: A Darwinian View of Life
- 23 The Evolution of Populations
- 24 The Origin of Species
- 25 Phylogeny and Systematics
- 26 The Tree of Life: An Introduction to Biological Diversity
- Unit 5 The Evolutionary History of Biological Diversity
- 27 Prokarvotes
- 28 The Origins of Eukaryotic Diversity
- 29 Plant Diversity I: How Plants Colonized Land
- 30 Plant Diversity II: The Evolution of Seed Plants
- 31 Fungi
- 32 An Introduction to Animal Evolution
- 33 Invertebrates
- 34 Vertebrate Evolution and Diversity
- Unit 6 Plant Form and Function
- 35 Plant Structure, Growth, and Development
- 36 Transport in Vascular Plants
- 37 Plant Nutrition
- 38 Angiosperm Reproduction and Biotechnology

- 39 Plant Responses to Internal and External Signals
- Unit 7 Animal Form and Function
- 40 Basic Principles of Animal Form and Function
- 41 Animal Nutrition
- 42 Circulation and Gas Exchange
- 43 The Immune System
- 44 Regulating the Internal Environment
- 45 Chemical Signals in Animals
- 46 Animal Reproduction
- 47 Animal Development
- 48 Nervous Systems
- 49 Sensory and Motor Mechanisms
- Unit 8 Ecology
- 50 An Introduction to Ecology and the Biosphere
- 51 Animal Behavior and Behavioral Ecology
- 52 Population Ecology
- 53 Community Ecology
- 54 Ecosystems
- 55 Conservation Biology and Restoration Ecology