Contents

	To the Student	vii
1	What Is Life?	1
2	Atoms, Molecules, and Life	9
3	Cells: The Basic Units of Life	17
4	The Dynamic Cell	23
5	How Living Things Harvest Energy	29
6	Trapping Sunlight and Building Nutrients	35
7	Cell Cycles and Life Cycles	41
8	The Patterns of Heredity	49
9	DNA: The Thread of Life	57
10	How Genes Work	63
11	Human Genetics	71
12	Reproduction and Development: A New Generation	79
13	The Human Life Cycle	87
14	Origins of Life and Its Diversity	97
15	The Single-Celled Kingdoms	103
16	Plants and Fungi: Producers and Decomposers	109
17	Animals Without Backbones	117
18	The Chordates: Vertebrates and Their Relatives	127
19	A Steady State: The Key to Animal Survival	135
20	Circulation: The Internal Transport System	141
21	Respiration: Gas Exchange with the Environment	149
22	The Immune System: Defense from Disease	155
23	Animal Nutrition and Digestion	163
24	Salt and Water Balance and Waste Removal	169
25	How Hormones Govern Body Activities	175
26	How Nerve Cells Work	183
27	Senses and the Brain	189
28	The Body in Motion	197
29	Plant Form and Function	203
30	How Plants Grow	211
31	The Dynamic Plant	217
32	The Genetic Basis for Evolution	223

33 Population Patterns in Space and Time 231
34 The Ecology of Living Communities 239
35 Ecosystems: Webs of Life and the Physical World 247
36 The Biosphere: Earth's Fragile Film of Life 253
37 Animal Behavior: Patterns for Survival 261
Answer Section 269