Contents

About the Author iii

Acknowledgments v

Introduction xiii

Section 1: Preserved Evidence of Past Life

1 **What Fossils Have to Say** Fossil secrets 2

2 **Long-Ago Life Forms** Multicellular organisms 4

3 **Footprints from the Past** Fossil imprints 6

4 **Early Wings** Bird-dinosaur–link mystery 8

5 **Two Steps Ahead of the Rest** New lizard discovery 10

6 **Dinosaur-Snacking Crocodile** Super Croc 12

7 **Awesome Dinosaur** The Apatosaurus 14

8 **Even More Dinosaurs** Two massive ancient reptiles 16

9 **Mast from the Past** Protecting fossil bones 18

10 **North American Mammal Mystery** Disappearing mammals 20

11 **Fossils on Hold** Fossils alive and well 22

12 **Let's Ban Man** Human causes of extinction 24

Challenge Activities (10 items) 26

Section 2: Early Human Life on Earth

13 **New Face from an Old Skull** Oldest human ancestor(?) 28

14 **Who Ate My Kangaroo?** Early human appetites 30

COPYRIGHTED MATERIAL

15 **Early Artists Show Their Skill** Art from the start 32
16 **Egyptian Cave Art** Real or fake? 34
17 **Early Man Appears** Iceman and Kennewick Man 36
18 **Keeping the Past Alive** Ancient ruins' preservation 38
Challenge Activities (7 items) 40

Section 3: Getting to Know the Lithosphere

19 **Leaving the Lava Behind 1** Mayon volcano (Philippines) 42
20 **Leaving the Lava Behind 2** Mt. Nyiragongo (Rwanda) 44
21 **Volcano Secrets** Volcanics (Baja California) 46
22 **Earthquakes 1** Earthquake news 48
23 **Earthquakes 2** More earthquake data 50
24 **Nature's Quake Predictors** Geyser mystery 52
25 **Glacier Alert 1** All about glaciers 54
26 **Glacier Alert 2** More glacier information 56
27 **Inner Space Travel** From erosion to caves 58
28 **Mapping in Outer and Inner Space** Mapping techniques 60
29 **Global Positioning System** Satellite Navigation Network 62
Challenge Activities (11 items) 64

Section 4: Listening to the Environment

30 **Chromium 6 on Trial** A most harmful chemical 66
31 **Mercury Menace** Mercury poisoning 68
32 **Global Warming Warning 1** Global warming trends 70
33 **Global Warming Warning 2** Global warming trends 72
34 **Ocean Currents and Weather** El Niño/La Niña 74
35 **Pollution Problem** Air pollution 76
36 **Pollution Solution** Technology advancements 78
37 **Forever Organisms** Preventing extinction 80
Challenge Activities (9 items) 83

Section 5: Ocean Features and Related Creatures

38 **Save the Coral** Coral reef restoration 86
39 **Lost City Found** Hydrothermal vents 88
40 **Island Under Water** Submerged island 90
41 **Don't Go Near the Water** Beach pollution 92
42 **Fate of the Fish** Pollution/Overfishing 94
43 **Microbes from Across the Sea** Ballast water microbes 96
44 **Cormorants Under Siege** A fisheries pest 98
45 **The No-Wimp Shrimp** Mantis shrimp 100
46 **Jellyfish on the Rocks** Fossilized jellyfish 102
47 **Anemone by the Sea** Sea anemone 104
48 **Squid Freak from Down Deep** New discovery 106
49 **Stingless Stingrays** De-barbing stingrays 108
50 **Plight of the Sturgeon** Sturgeon problem 110
51 **Predator Challenge** Predator cautions 112
52 **The Sea Otter's Dilemma** Endangered species 114
53 **Sea Lions Take Charge** Nuisance at sea 116
54 **A Whale of a Tale** Ancient swimmers 118
Challenge Activities (11 items) 120

Section 6: What's Happening in Space?

55 **Taking on the Universe** Examining the universe 124
56 **New Planets in Town** Recent finds 126
57 **Mars: A Watery World?** Search for water 128
58 **Asteroid Probes Coming Up** Asteroid data 130
59 **Eros: Space Mountain Asteroid** Asteroid study 132
60 **Paranoid Rhymes with Asteroid** Asteroid fears 134
61 **Twenty-Two and Counting** Saturn surprise 136
62 **The Moons of Jupiter** Recent discoveries 138
63 **Meteor Trails and Comet Tales** Meteors/Comets 140

64 **Meteorite Mysteries** Meteorite information 142
65 **From Stars to Galaxies** Star data 144
66 **Telescopes and Beyond** MAXIM/SOFIA 146
Challenge Activities (12 items) 148

Section 7: Life on Land and Water

67 **As the Worm Turns** Worm discoveries 152
68 **It's All About Ants** Ant stories 154
69 **Insects Two** Grasshopper/Cricket 156
70 **Where Have All the Froggies Gone? 1** Vanishing amphibians 158
71 **Where Have All the Froggies Gone? 2** Vanishing amphibians 160
72 **The California Condor Comeback 1** Condor rescue 162
73 **The California Condor Comeback 2** Condor rescue 164
74 **Rodent Roundup 1** Mostly rats 166
75 **Rodent Roundup 2** Meet meadow mouse 168
76 **The Smallest of Critters** Mouse lemurs 170
Challenge Activities (10 items) 172

Section 8: What's Up in Genetic Science?

77 **Genetic Review** Genetic terms 174
78 **From One Gene to Another 1** A look at genes 176
79 **From One Gene to Another 2** A look at genes 178
80 **Designer Catfish** "Customized" catfish 180
81 **Biotech Foods** Genetically modified organisms 182
82 **Human Stem Cells** Stem cell concerns 184
83 **Human Genome** A chromosome gathering 186
84 **What About Cloning?** Cloning issues 188
Challenge Activities (8 items) 190

Section 9: Timely Real-Life Topics of Concern

85 **Environmental Pollution 1** Student comments 192
86 **Environmental Pollution 2** Student comments 194
87 **The Decreasing Fish Population** Student comments 196

88 **Whale Concerns 1** Student comments 198
89 **Whale Concerns 2** Student comments 200
90 **Dealing with Dolphins** Student comments 202
91 **The Cold Facts About Cryonics** Student comments 204

Riddles for the Asking 207
Answer Key 211
Riddles Answer Key 231