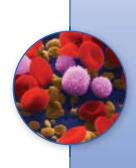
Contents

Exploring Science Links 10				
	Tissues, Organs, and Systems			
Get Ready for Unit 1				
Topic 1.1	Why are cells important?8			
Topic 1.2	Why do animal cells divide and what happens when they do? 20 Investigation 1A: Observing the Cell Cycle in Animal Cells 32			
Topic 1.3	How do cells work together in the human body?			
	Strange Tales of Science: Stomach for Science			
Topic 1.4	How do systems work together in the human body? 56 Investigation 1C: The Effect of Exercise on			
	Breathing Rate and Heart Rate			
	Investigation 1D: Frog Dissection			
	Making a Difference: April Dutheil			
Topic 1.5	How do technology, substances, and environmental factors affect human health?76			
	Investigation 1E: Advances in Medical Technology 86			
	Investigation 1F: How Much Exposure is Too Much?			
	Case Study Investigation: What's the Price of Peak Performance?90			
	Making a Difference: Kristopher Knowles and Prashanthi Baskaran92			
Science at Work Radiological Technologist94				
Unit 1 Summary				
Unit 1 Projects: Inquiry Investigation: How Disease Affects Organs 98 An Issue to Analyze: Encouraging Healthy Lifestyles 99				
Unit 1 Review				
Unit 1 Literacy Test Prep				







	Unit 2 Chemical Reactions and
	Their Practical Applications 104
	Unit 2 At a Glance
	Get Ready for Unit 2
	Topic 2.1 How do chemical reactions affect your daily life?
	Topic 2.2 How can we understand, describe, and name chemical
	compounds?118
	Investigation 2A: Ionic or Molecular?138
	Topic 2.3 What happens during a chemical reaction, and how can it
	be described?140
	Investigation 2B: The Law of Conservation of Mass
	Strange Tales of Science: Crime Scene Chemistry 154
	Making a Difference: Simon Pickup, Sergio Morales,
	and Andrew Hanna
	Topic 2.4 What are acids and bases, and how do they react?
	Case Study Investigation: Acid Rain—Still an Ongoing
	Concern
	Investigation 2C: Acid-Base Neutralization Reactions 172
	Investigation 2D: The Effectiveness of Antacids
4.00	Science at Work Glass Artist
0)190	Unit 2 Summary
	Unit 2 Projects Inquiry Investigation: The pH of your "Pop" 180
	An Issue to Analyze: Mining Gold from e-Waste 181
	Unit 2 Review
	Unit 2 Literacy Test Prep
	The state of the s
1	
of the same	
W (5) (8) (8)	
A CAMPAGE	
- 八月清清	

onit 3 Earth's Dynamic Chinate				
Unit 3 At a Glance				
Get Ready	for Unit 3			
Topic 3.1	What is climate, and how has it changed during Earth's history?			
Topic 3.2	Where are the effects of climate change felt, and what is their impact?			
Topic 3.3	What natural factors affect climate, and how do they affect it? 212 Investigation 3A: Solar Radiation and Earth's Surface			
Topic 3.4	How do human activities affect the natural greenhouse effect? 230 Investigation 3C: Cross-Country Climate Change			
Topic 3.5	How can we assess present climate change and reduce our impact?			
Science at	Work Green Roofer			
Unit 3 Summary				
Unit 3 Projects: Inquiry Investigation: Reflecting on Land Use 264 An Issue to Analyze: Dealing with Climate Change 265				
Unit 3 Review				
Unit 3 Literacy Test Prep				



	Unit 4 Light and Applications of Optics 270
	Unit 4 At a Glance
	Get Ready for Unit 4
	Topic 4.1 What is light and how is it produced?
	Making a Difference: Charlie Sobcov, Pénélope Robinson, and Maude Briand-Lemay
	Topic 4.2 How does light interact with objects to give them colour? 286
	Topic 4.3 How can you mix colours to make different colours? 294
	Topic 4.4 What is the law of reflection and how do mirrors form images? 304
	Investigation 4A: Exploring Images with a Concave Mirror 326
	Case Study Investigation: How Can Mirrors Help Keep You Safe?
A. The Control	Strange Tales of Science: Not Seeing is Believing
	Topic 4.5 What is refraction and how can it be used?
	Topic 4.6 What are lenses and what are some of their applications? 344
	Investigation 4B: Investigating Converging Lenses
	Investigation 4C: Options for an Optical Device
	Science at Work Laserist
(hair	Unit 4 Summary
A STATE OF THE PARTY OF THE PAR	Unit 4 Projects: Inquiry Investigation: Design a Light Tunnel 360
**************************************	An Issue to Analyze: LEDs Brighten Up the Darkness 361
	Unit 4 Review
	Unit 4 Literacy Test Prep



	Guide to the Skills Toolkits	6
	SCIENCE SKILLS TOOLKITS	
	Science Skills Toolkit 1: Analyzing Issues—Science, Technology,	
	Society, and the Environment	7
	Science Skills Toolkit 2: Scientific Inquiry	1
	Science Skills Toolkit 3: Measuring	6
	Science Skills Toolkit 4: Using a Microscope	0
	Science Skills Toolkit 5: Scientific Drawing	2
	Science Skills Toolkit 6: Using Models and Analogies in Science	4
	Science Skills Toolkit 7: How to Do a Research-Based Project	6
	Science Skills Toolkit 8: Creating Data Tables	0
	NUMERACY SKILLS TOOLKITS	
	Numeracy Skills Toolkit 1: Significant Digits and Rounding	1
	Numeracy Skills Toolkit 2: Organizing and Communicating	
	Scientific Results with Graphs	2
	Numeracy Skills Toolkit 3: The GRASP Problem-Solving Method 39	
	LITERACY SKILLS TOOLKITS	
	Literacy Skills Toolkit 1: Preparing for Reading	9
	Literacy Skills Toolkit 2: Reading Effectively	
	Literacy Skills Toolkit 3: Reading Graphic Text	
	Literacy Skills Toolkit 4: Word Study	
	Literacy Skills Toolkit 5: Organizing Your Learning:	
	Using Graphic rganizers	2
	Glossary	8
	Index	2
	Credits	7
	Chemistry References	0
	Chemistry References	9
	Periodic Table	0
	and the same of th	
		The second of
F		
-4-		
W.		
		CONTENTS • MHR ix
1		CONTENTS - MITK IX