# Answer Keys
## for Daily Work
## Lessons 101–120

04RAKF0616-0616

# Contents

## ACTIVITY 8

### Searching a Database

(Computer Skills Lesson 110)

**1** North America, South America, Africa, Europe, Asia, Australia & Pacific, or Antarctica **2** rows **3** field **4** columns **5** Height in Feet and Active Volcanoes **6** Antarctica **7** b **8** d **9** North America, South America, Asia, and Australia & Pacific

## ACTIVITY 9

### Sorting a Database

(Computer Skills Lesson 111)

**1** Length in miles **2** I know because that is the only field in any order. **3** descending order **4** Africa **5** Nile **6** Waterfall Height in Feet **7** I know because it is the only field in any order. **8** ascending order **9** Europe **10** Angel, Venezuela **11** d

# Spelling



*Note:* The answers that follow a page number are from ***Everyday Spelling***. The Activities are from ***Activity Pages***.

## LESSON 101

### Page 116

**Strategy Workshop**
**Pronouncing for Spelling**

**Try It Out** **1** surprise **2** picture **3** strength **4** different **5** chasing

### Page 117

**Try It Out** **1** lamb **2** knit **3** wrist **4** guess **5** everyone **6** talk **7** once **8** hour **9** clothes **10** movie

**Look Ahead** **1–4** Answers will vary.

### Page 118

**Including All the Letters**

**Practice** Order of words in each group may vary. **1** might **2** they **3** known **4** caught **5** often **6** surprised **7** island **8** swimming **9** evening **10** remember **11** finally **12** really **13** several **14** everyone **15** camera **16** December **17** beginning **18** interesting **19** everybody **20** February

**Write** Sentences will vary.

## LESSON 102

### Page 119

**Think and Practice**

**Puzzle It Out** Letters that fall in the vertical box are underlined in this answer key. **1** December **2** really **3** remember **4** evening **5** surprised **6** caught **7** camera

**Syllable Alert** **8** beginning **9** known **10** everybody **11** they **12** swimming **13** everyone **14** island **15** often **16** might

**Strategic Spelling**

**Pronouncing for Spelling** **17** February **18** finally **19** interesting **20** several

### Pages 178–179

**Our Government**

**Purple box:** Words will vary.

**Getting at Meaning**

**Context Clues** **1** leaders **2** elected **3** participate **4** democratic **5** represent **6** republic

**State the Facts** **7** Constitution **8** state **9** federal **10** local

**Spell Well**

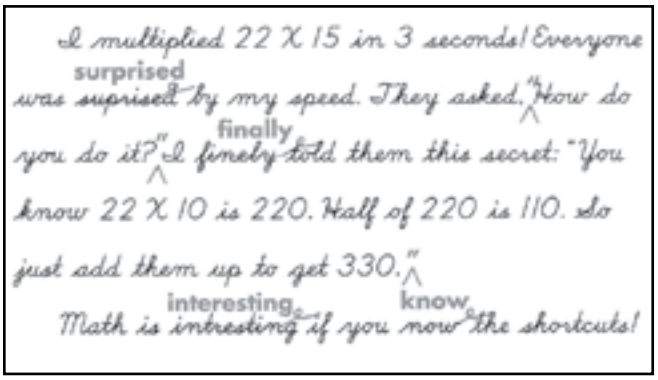
**Divide and Conquer** **11** Constitution **12** participate

## LESSON 103

### Page 120

**Proofreading and Writing**

**Proofreading a Math Problem**




**Write a Math Problem** Responses will vary. Math problems should include list words and personal words.

## LESSON 104

### Page 121

**Vocabulary Building**

**Review**

**Synonyms** **1** everyone **2** everybody

**Defining Words** **3** finally **4** several **5** interesting **6** often **7** really **8** might **9** remember **10** they

**Using a Dictionary**

**Words That Aren't Entries** **1** smuggle **2** funny **3** speech **4** large

## LESSON 106

### Page 122

**Compound Words**

**Practice** **1** anyway **2** baseball **3** basketball **4** chalkboard **5** classmate **6** classroom **7** doorbell **8** downstairs **9** driveway **10** earrings **11** highway **12** motorcycle **13** myself **14** newspaper **15** nighttime **16** softball **17** something **18** sometimes **19** upstairs **20** weekend

**Write** Paragraphs will vary.

## LESSON 107

### Page 123

**Think and Practice**

**Classifications** **1** basketball **2** baseball **3** softball **4** classroom **5** classmate **6** nighttime **7** weekend

**Joining Words** **8** myself **9** anyway **10** doorbell **11** newspaper **12** something **13** upstairs **14** earrings **15** sometimes **16** chalkboard **17** downstairs **18** motorcycle

**Strategic Spelling**

**Seeing Meaning Connections** **19** runway **20** highway **21** driveway

## LESSON 108

### Page 124

**Proofreading and Writing**

**Proofread an Essay**


My Proud Moment

I play ~~basket ball~~ basketball in the Adapted Athletics Program. At first it was hard dribbling from my wheelchair, but I soon got ~~more~~ better at it. Once, I faked out my ~~classmat~~ classmate Pete. I drove ~~my self~~ myself around him and swished the ball ~~trough~~ through the net. I felt like Supergirl!

**Write an Essay** Responses will vary. Essays should include spelling words and a personal word.

## LESSON 109

### Page 125

**Vocabulary Building**

**Review**

**Words in Context** **1** anyway **2** highway **3** basketball **4** sometimes **5** myself **6** baseball **7** upstairs **8** newspaper **9** something **10** classroom

**Multicultural Connection**

**Arts** **1** brooch **2** earring **3** pendant **4** necklace

## LESSON 110

### Page 126

**Suffixes -ful, -ly, -ion**

**Practice** Order of words in each group may vary. **1** slowly **2** safely **3** daily **4** suddenly **5** carefully **6** weekly **7** lately **8** truthfully **9** hopefully **10** powerful **11** peaceful **12** beautiful **13** cheerful **14** painful **15** thoughtful **16** action **17** location **18** invention **19** correction **20** pollution

**Write** Responses will vary.

## LESSON 111

### Page 127

**Think and Practice**

**Suffix Addition** **1** cheerful **2** weekly **3** hopefully **4** lately **5** peaceful **6** suddenly **7** beautiful **8** slowly **9** painful **10** safely **11** powerful **12** daily

**Word Forms** **13** action **14** thoughtful **15** pollution **16** invention **17** truthfully **18** carefully

**Strategic Spelling**

**Using the Meaning Helper Strategy** **19** correction **20** location

### Pages 204–205

**Many Ways of Learning**

**Purple box:** Words will vary.

**Getting at Meaning**

**Labeling Illustrations** **1** brainstorm **2** exhibit **3** experiment **4** assignments **5** interview

**Completing Word Webs** **6** demonstrations **7** research **8** collections **9** librarian **10** counselor

**Spell Well**

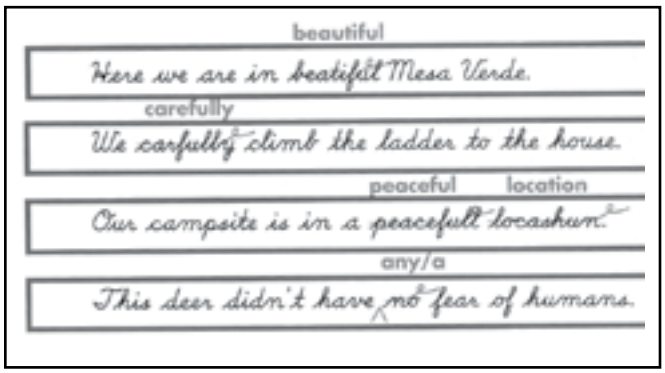
**Pronouncing Words Carefully** **11** experiment **12** counselor

## LESSON 112

### Page 128

**Proofreading and Writing**

**Proofread Captions**




**Write a Caption** Captions should include a spelling word and a personal word.

## LESSON 113

### Page 129

**Vocabulary Building**

**Review**

**Analogies** **1** carefully **2** beautiful **3** location **4** suddenly **5** daily **6** peaceful **7** slowly **8** action **9** safely **10** powerful

**Word Study**

**Codes** A POWERFUL HERO

## LESSON 115

### Page 130

**Suffixes -less, -ment, -ness**

**Practice** Order of words in each group may vary.
**1** goodness **2** softness **3** brightness **4** business **5** greatness **6** fairness **7** darkness **8** payment **9** statement **10** movement **11** pavement **12** treatment **13** punishment **14** helpless **15** careless **16** hopeless **17** spotless **18** breathless **19** worthless **20** useless

**Write** Sentences will vary.

## LESSON 116

### Page 131

**Think and Practice**

**Adding Endings** **1** business **2** payment **3** helpless **4** useless **5** movement **6** greatness **7** statement **8** hopeless **9** goodness **10** worthless **11** breathless **12** pavement **13** fairness **14** softness

**Match Up** **15** careless **16** treatment **17** brightness **18** spotless **19** darkness **20** punishment

**Strategic Spelling**

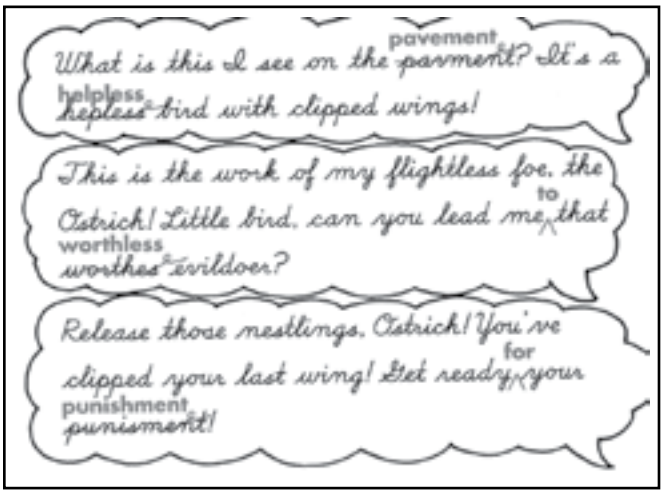
**Building New Words** **21** homeless **22** enjoyment **23** coldness

## LESSON 117

### Page 132

**Proofreading and Writing**

**Proofread a Comic Strip**




**Write a Comic Strip** Responses will vary. Comic strips should include list words.

## LESSON 118

### Page 133

**Vocabulary Building**

**Review**

**Puzzle It Out** **1** brightness **2** payment **3** movement **4** goodness **5** softness **6** helpless **7** hopeless **8** business **9** careless **10** statement

Answer to riddle: superheroes

**Word Study**

**Haiku** Responses will vary.

## TWELFTH REVIEW LESSON

### Spelling Activity 6

**1** spotless **2** often **3** classroom **4** thoughtful
**5** downstairs **6** finally **7** worthless **8** powerful **9** island
**10** newspaper **11** brightness **12** surprised **13** peaceful
**14** everyone **15** statement **16** swimming **17** invention
**18** nighttime **19** caught **20** daily

# Reading Activities

## ACTIVITY 56

### Thomas Edison: A Pre-Reading Activity

(Reading Lesson 101)

**I a** Thomas Edison: The great Inventor **b** 9 **c** Answers will vary.

**II–III** Answers will vary. Refer to text to evaluate student work.

## ACTIVITY 57

### A Sequencing Activity

(Reading Lesson 103)

**1855:** 4, 2, 5, 1, 3 **1862:** 3, 1, 2

## ACTIVITY 58

### Edison's Life: A Flow Chart

(Reading Lesson 104)

Answers may vary. Sample answers follow.

**Topic:** Edison the Inventor

- 1868: Became full-time inventor
- 1869: Received patent for electric voter recorder
- 1868: Moved to NYC and invented universal stock printer; sold patent for $40,000
- 1871: Used money to build own factory and laboratory
- 1875: Invented electric pen and "etheric force"

## ACTIVITY 59

### Sequencing Key Details

(Reading Lesson 107)

3, 2, 4, 1, 6, 5

## ACTIVITY 60

### Fishbone Organizer

(Reading Lesson 108)

Answers may vary.

Main Idea: Edison improved his light system so that he could "light up the world."

Key Detail #2: Edison took note of the "Edison Effect."

Key Detail #3: At Menlo Park, Edison created a network of underground cables and wires.

Key Detail #4: He installed an electric light system in 1 square mile in NYC.

Key Detail #5: He opened up the world's first commercial power plant for incandescent lighting in London.

Key Detail #6: He tested the New York City grid, but it was loud.

Key Detail #7: To fix the sound of the power plant, Edison synchronized the engines, which helped quiet the noise.

## ACTIVITY 61

### An Edison Timeline

(Reading Lesson 109)

Answers will slightly vary if your student wrote in the key details by himself. If he cut out and attached the details provided, the answers are as follows:

1887—A new laboratory was opened. Edison's attention went back to the phonograph to which he added an electric motor and a reusable wax cylinder.

1888—Edison became inspired by the zoopraxiscope. He created a device that recorded objects in motion.

1889—Edison and Dickson made a film reel, which made motion pictures a reality.

1892—Edison and Dickson invented the first kinetograph and the kinetoscope parlor.

1893—Edison built a small motion picture studio where motion pictures could be filmed.

## ACTIVITY 64

### Question and Answer Organizer

(Reading Lessons 112–113)

Answers will vary.

## ACTIVITY 66

### Preparing to Read a Science Experiment

(Reading Lesson 118)

**1** to make your own electricity generator, just like a battery, from a lemon and two wires **2** Answers will vary. **3** a fresh lemon, steel wire, and copper wire **4** four **5** Answers will vary. **6** about seven **7** Answers will vary.

## ACTIVITY 67

### Science Experiment: Lemon Juice Electricity

(Reading Lessons 118–119)

**Results**

**1** Sample answer: I felt a slight tingle of electricity on my tongue. **2** Answers will vary.

# Social Studies Textbook



## Page 297

**Apply it!** **1** possible answers: because the government thought that the wonder and beauty of the park should be preserved **2** Possible answers: Yes, it preserved the park for future generations; No, it was unnecessary use of government money. Accept any answer that is supported by a valid reason. **3** possible answer: a place set aside for nature, because it was a first step to protecting the canyon

## Page 301

**Review** Blowing sand and other factors may continue to wear away the surface of the rock, making the canyon deeper and wider.

## Page 303

**Review** They were searching for gold.

## Page 304

**Review** possible answers: see the view; hike in the canyon; explore Native American villages

### Lesson 1 Review

**1** Possible answer: **Conclusion:** People have lived in the canyon for thousands of years. **2** possible answers: a vast canyon in the Southwest; to see its beauty, to hike its trails, or to learn more about its wildlife and Native American heritage **3** at least partially by erosion **4** It continues to gradually change the canyon. **5** Possible answer: The canyon's wildlife and Native American artifacts and even the canyon itself might have been damaged.

**Link to Science** Your student's research may reveal information about various mountains, hills, or rock formations throughout the world.

## Page 305

**Learn from Biographies** Possible answer: The descriptions in his journal may have inspired other people to visit the canyon.

## Page 307

**Think and Apply** **1** not valid; not supported by information in the paragraph **2** valid; paragraph states that most tourists visit the South Rim **3** not valid; not supported by information in the paragraph

## Page 309

**Review** Possible answer: It is varied; it is dry in some places but humid in others.

**Map Skill** Texas; New Mexico or Arizona

## Page 311

**Review** possible answers: saguaro cactus, piñon pines, junipers, reeds

### Lesson 2 Review

**1** Possible answer: **Conclusion:** The saguaro is adapted to living in the desert. **2** Some of the Southwest has a dry climate, but parts of Texas have a hot, humid climate. Parts of Oklahoma are also humid and windy. **3** in the Sonoran Desert **4** a hot, seasonally dry grassy plain on which few trees grow **5** Possible answer: Both are adapted to the varied climate of the Southwest.

**Link to Writing** Answers will vary but should reflect an understanding of the climate of the Southwest. Postcard should correctly use the word *arid*.

## Page 315

**Review** Possible answer: Oil is an important nonrenewable resource.

## Page 317

### Lesson 3 Review

**1** Possible answers: **Details:** Oil brought many businesses to Beaumont, Texas; Many people came to Texas in search of oil and natural gas; Many different products are made from oil. **2** because it cannot be replaced by nature **3** possible answers: Arizona—aerospace industry; New Mexico—computer industry; Texas—electronics industry; Oklahoma—aerospace industry **4** Possible answer: The United States benefits from technological advances developed in the Southwest. **5** Starting with the gushers, oil has led to the growth of refineries, new businesses, and jobs. These, in turn, have given people an alternative to farming and improved the economy.

**Link to Science** Posters will vary but should reflect an understanding of realistic conservation methods.

## Page 320–321

### Chapter 10 Review

**Chapter Summary** Possible answers: **Details:** The Southwest has canyons, rivers, deserts, and savannas; The Southwest has oil and minerals; The Southwest is a center of technology.

**Vocabulary** **1** b **2** c **3** e **4** a **5** d

**People and Places** Possible answers: **1** Captain García López de Cárdenas and his Spanish soldiers were the first Europeans to see the Grand Canyon. **2** In 1869, Major John Wesley Powell explored the Grand Canyon. **3** President Theodore Roosevelt made the Grand Canyon a national monument. **4** The Sonoran Desert is the only place where the saguaro cactus grows naturally. **5** Beaumont, Texas, is near where the Spindletop Oil Field was discovered in 1901. **6** Pattillo Higgins realized there might

be oil at Spindletop when he saw signs that there might be natural gas in the area.

**Facts and Main Ideas** **1** His reports led others to explore and study the canyon area. **2** Many plants that grow there, such as the saguaro, store and conserve water and are otherwise adapted to the dry climate. **3** People spotted clues to its existence and drilled to find it. **4** Erosion has gradually worn away rock to create a deep canyon, and it continues to shape the canyon today. **5** Some areas are deserts, receiving less than 10 in. of rain per year. Other areas are arid but not quite as dry as a desert. Still others are hot and humid, which can be uncomfortable. **6** possible answer: aerospace, computer, electronics, defense **7** Possible answer: After oil was discovered at Spindletop, many people came to the Southwest in search of oil and natural gas.

**Apply Skills** Statement 1 is a generalization.

**Write About Geography** **1** Encourage your student to use the pictures in the chapter to help him provide descriptive details. **2** Encourage your student to develop easy and practical ways for companies and individuals to conserve oil. **3** Encourage your student to use the Internet and library to research information for his article.

## Page 325

**Review** The Navajo learned farming, pottery making, and basket weaving from the Pueblo.

## Page 326

**Map Skill** about 150 miles

## Page 327

**Review** The soil was poor for growing crops. The water was not safe to drink. Clothing and blankets were scarce.

**Review** It led them to form the Navajo Tribal Council.

## Page 328

**Review** Possible answers: They continue to teach their language; some still live in hogans; and they still conduct Navajo ceremonies.

### Lesson 1 Review

**1** Possible answers: **Causes:** The government ordered Kit Carson to stop the conflicts between the Navajo and the settlers; The government wanted to prevent further conflicts between settlers and the Navajo. **2** The people lived in hogans, hunted, farmed, and made pottery and baskets. **3** Many ceremonies are still performed. Hogans are still important. The Navajo language is taught. **4** They are elected every four years. **5** Accept any reasonable answer. Possible answer: Yes; it is better for the Navajo Nation to be ruled by its own people because they understand the needs and ways of the Navajo.

**Link to Art** Encourage your student to base his artwork on research and facts.

## Page 329

**Learn from Biographies** Possible answer: His years as an interpreter may have helped him learn to deal effectively with others and to be a good listener.

## Page 331

**Think and Apply** **1** a primary source; I would want to find a description by a person who was actually present at that time. **2** a secondary source; because it can give a broader overview of an event and show how people have come to understand that event over time **3** a primary source

## Page 333

**Review** possible answers: The Grand Canyon, the Gulf of California, buffalo, Native American villages

## Page 335

**Review** possible answers: to claim land, to make Christians of the Native Americans, to teach them farming and other trades, and to make them subjects of Spain

## Page 337

**Review** They started the cattle ranches of the Southwest and handed down skills such as roping, branding, herding cattle, and riding on trail drives.

### Lesson 2 Review

**1** Possible answers: **Conclusion:** His mission was thought to be a failure. **2** They explored the Grand Canyon, the Gulf of California, and pueblo villages in what is now New Mexico. **3** Possible answer: Native Americans and others living at the missions began building settlements around the missions. **4** possible answers: in architecture, food, festivals, clothing, ranches, and so on **5** Possible answer: Some probably did not want the Spanish to invade their lands or influence their culture; others probably wanted to learn new skills and ideas from the Spanish and wanted the protection a mission could provide.

**Link to Writing** Encourage your student to research activities at Spanish missions in the Southwest and present the information in his brochure. Brochure should correctly use the word *missionary*.

## Page 339

**Review** Possible answer: Spanish missionaries and soldiers brought cattle to Texas and raised them.

## Page 340

**Review** Possible answers: Cowboys trained horses and herded cattle. Cowhands worked long hours, slept on the ground, and rarely carried guns.

## Page 341

**Review** Possible answer: They could pay the toll with a head or two of cattle.

**Map Adventure** **1** Red River **2** north **3** Arkansas River

## Page 343

**Review** Grasslands were no longer available for shared grazing, so herds had to be smaller.

### Lesson 3 Review

**1** Possible answers: **Conclusion:** Cattle provided food and jobs for many people. **2** The possibility of large profits attracted people from the East and overseas to invest in raising beef. Raising cattle became a booming business. **3** Herds became smaller and were kept in fenced pastures. Ranchers began to raise crops and drill wells to feed and water their cattle. **4** Songs, stories, movies, and television shows celebrate their work. **5** The Chisholm Trail provided a route north from Texas to Ellsworth and Abilene, Kansas. By paying a toll, ranchers were able to drive their cattle through Indian Territory.

**Link to Writing** Ideas should be supported with facts and should depict a realistic situation. Story should correctly use the words *tallow* and *homestead*.

## Page 347

**Map Skill** People have built dams to control the movement of river water in the Southwest.

**Review** possible answer: probably not, because irrigation allows agriculture, which creates jobs, which brings more people to the area

## Page 348

**Review** It has made living and doing business in the desert more comfortable and therefore has stimulated growth.

### Lesson 4 Review

**1** Possible answers: **Causes:** Irrigation, dams, and reservoirs brought water to the desert; Air conditioning was invented. **2** Aqueducts and irrigation have turned parts of the desert into farmland. **3** Willis Haviland Carter **4** by air conditioning their homes and business and by bringing in water through canals and aqueducts **5** Amusement park owners might expect business to be good. Farmers might fear for the survival of their crops.

**Link to Science** Research should reveal that the energy in flowing water is harnessed as hydroelectric power.

## Page 349

**Learning from Biographies** because he helped develop modern air conditioning

## Page 352–353

### Chapter 11 Review

**Chapter Summary** Possible answers: **Conclusion:** Many influences shaped the Southwest.

**Vocabulary** **1** missionary **2** aqueduct **3** viceroy **4** hogan **5** homestead

**People and Terms** **1** f **2** e **3** c **4** a **5** d **6** b

**Facts and Main Ideas** **1** Spanish missionaries brought cattle to Texas and left the cattle behind when they withdrew. **2** about 25 years **3** Religion and traditional ceremonies are still important. Some of the Navajo still live in hogans. The Navajo language is still spoken and taught in schools. **4** Possible answer: Many of the churches, buildings, and settlements first established by the missions or near missions still exist today, and many elements of Spanish culture still influence life in the Southwest. **5** They have inspired many books, movies, TV shows, and songs. **6** Irrigation and air conditioning have made living in the desert more comfortable, so many people have moved to the Southwest. **7** **a** fact **b** opinion **c** fact

**Write About History** **1** Encourage your student to plan his skit around a problem a cowboy or cowgirl might face. **2** Your student's script must include at least a description of the visual part of the commercial. **3** As your student is planning his work, encourage him to list facts and opinions he will use. Suggest that he describe both the positive and negative effects of air conditioning.

**Apply Skills** **1** It uses words such as *I* and *me*. **2** possible answer: to let the viceroy know about how many people live in the pueblo **3** Possible answer: Many people live in this pueblo.

## Page 356–357

### Unit 5 Review

**Main Ideas and Vocabulary** **1** d **2** c **3** a **4** b

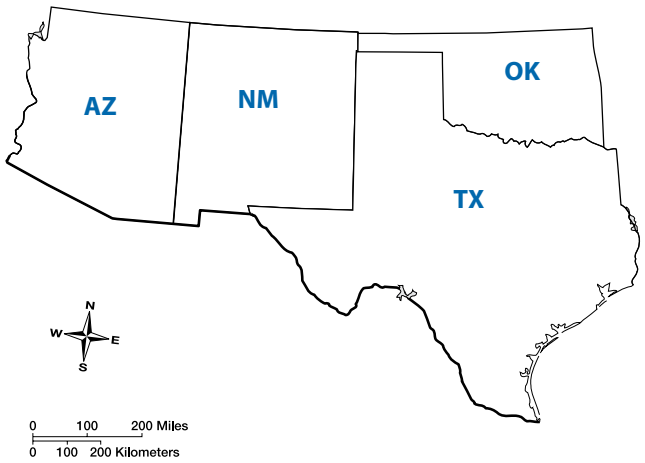
**People** Be sure that your student includes at least one factually correct detail about each person and that the paragraph is coherent overall.

# Social Studies Workbook

## ACTIVITY 67

### States of the Southwest

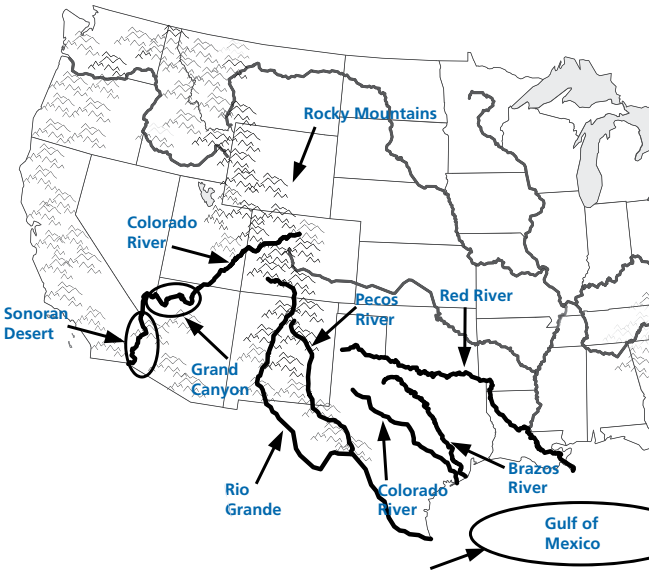
(Social Studies Lesson 101)




## ACTIVITY 68

### Physical Features of the Southwest

(Social Studies Lesson 103)




## ACTIVITY 71

### Southwestern Technology

(Social Studies Lesson 108)

Symbols will vary.

**Texas:** computers, radios, calculators, electronic equipment, aircraft/aviation, space craft/observations

**Oklahoma:** electronic equipment, aircraft/aviation, space craft/observations

**Arizona:** electronic equipment, aircraft/aviation, space craft/observations

**New Mexico:** computers, nuclear information, space craft/observations

## ACTIVITY 72

### Products from Oil (Optional)

(Social Studies Elective Lesson 109)

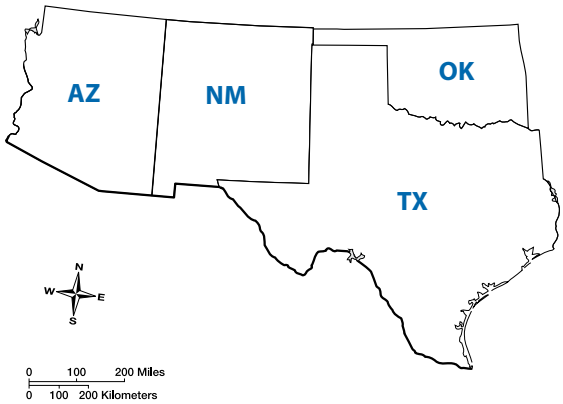
Answers will vary but might include detergent, gasoline, airplane fuel, medicines, fibers for clothing, motor oil, asphalt.

## ACTIVITY 73

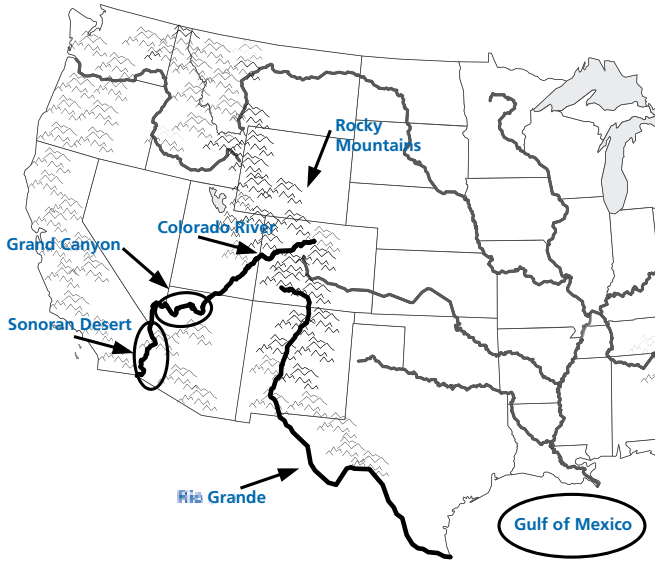
### Southwestern Spaces

(Social Studies Lesson 110)

**A**



**B**




## ACTIVITY 74

### Spanish Words in American Culture

(Social Studies Lesson 113)

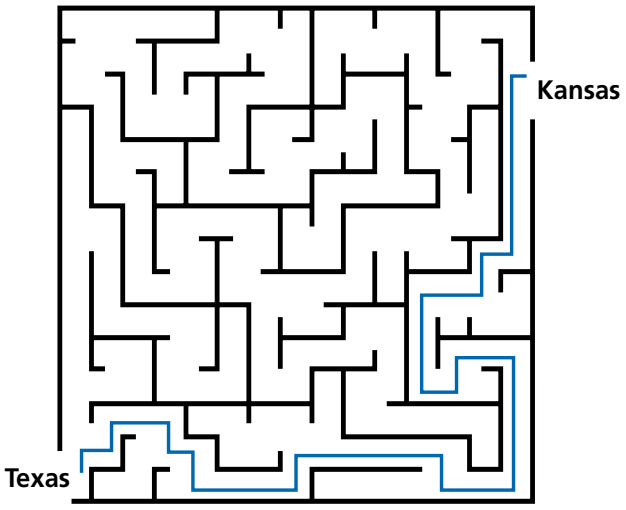
**1** corral **2** lasso **3** Rio Grande **4** pueblo **5** ranch **6** Santa Fe **7** burro **8** San Antonio **9** canyon **10** fiesta **11** plaza **12** adobe

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | N | A | R | E | E | P | I | A | O | S |
| A | E | C | C | O | R | R | A | L | A | N | A |
| D | R | F | A | O | A | I | N | D | A | N | N |
| S | A | N | A | N | T | O | N | I | O | Z | F |
| C | E | F | C | T | L | G | N | Y | T | B | A |
| H | L | H | I | B | N | R | N | N | N | U | E |
| F | F | I | E | S | T | A | O | O | S | R | Y |
| O | Z | U | A | C | C | N | S | N | N | R | A |
| R | P | R | D | A | O | D | S | N | E | O | L |
| H | A | O | I | R | L | E | A | R | B | E | O |
| T | T | I | A | N | E | O | L | P | A | E | O |
| O | L | G | P | C | A | B | O | B | D | T | A |

## ACTIVITY 76

### The Chisholm Trail

(Social Studies Lesson 115)




## ACTIVITY 77

### Water Conservation (Optional)

(Social Studies Lesson 116)

Conclusions will vary, but your student should conclude that less water is used for the 5-minute shower and when water is turned off while brushing teeth.

## ACTIVITY 78

### Review Main Ideas

(Social Studies Lesson 118)

**A** **1** p. 244 **2** p. 302 **3** p. 340 **4** p. 305 **5** p. 309 **6** p. 281 **7** p. 347 **8** p. 327 **9** p. 258 **10** p. 304 **11** p. 247 **12** p. 272 **13** p. 274 **14** p. 278 **15** p. 248 **16** p. 248 **17** p. 234 **18** p. 247 **19** p. 336 **20** p. 265 **21** p. 245 **22** p. 234 **23** p. 341 **24** p. 265 **25** p. 342 **26** p. 274 **27** pp. 273 and 275 **28** p. 315

**B** **Effect:** **1** The army forced the Navajo to go on the Long Walk. **2** People could live more comfortably in hot climates.

**C** **Conclusion:** **1** The saguaro is adapted to living in the desert. **2** Cattle provided food and jobs for many people.

# Geography Textbook



## Page 56

Europe, Africa, Antarctica; Arctic Ocean, Atlantic Ocean

## Page 57

- Africa, Antarctica; Arctic Ocean, Atlantic Ocean
- Europe, Asia, Africa, Antarctica

## Page 58


**1** London **2** Glasgow **3** Lyon **4** Hamburg **5** Lisbon **6** Salerno

## Page 59

**1** London **2** Tunis **3** Lisbon **4** Cape Town **5** Cairo **6** Vologda **7** Tehran

## Page 60

**1** St. Petersburg, Alexandria **2** Denver **3** Manila **4** Canberra **5** Bogotá **6** Greenwich **7** SE **8** NE

## Page 61

### Word Check

**1** longitude **2** Prime Meridian **3** Eastern Hemisphere **4** Western Hemisphere

### Map Check

**1** Birmingham **2** London **3** Belfast **4** Glasgow **5** Clifden

## ACTIVITY 14

### Global Latitude and Longitude

(Geography Lesson 112)

**A 1** Australia **2** Russia **3** Africa **4** United States **5** China
**B 1** Germany **2** Spain **3** Cuba **4** Guatemala **5** Panama
**C 1** Illinois **2** Gulf of Mexico **3** Utah **4** Nevada **5** Alaska

## ACTIVITY 15

### United States Latitude and Longitude

(Geography Lesson 117)

**1** New Mexico **2** Maine **3** Mexico **4** Oregon **5** Atlantic Ocean **6** 50° **7** Mississippi, Alabama, Georgia **8** Florida **9** Pacific Ocean **10** Maine

## ACTIVITY 16

### Latitude and Longitude

(Geography Twelfth Review Lesson)

**1** South America **2** Asia **3** Africa **4** Arctic Ocean **5** North America **6** Greenland **7** Atlantic Ocean **8** Galapagos Islands **9** Australia **10** Hawaii **11** Indian Ocean **12** Hudson Bay **13** Antarctica **14** Caribbean Sea **15** Pacific Ocean

# Grammar & Usage

## LESSON 102

### Unit 41

**Practice** **2** prettier, prettiest **3** more beautiful, most beautiful **4** better, best **5** more wonderful, most wonderful **6** sturdier, sturdiest **7** hungrier, hungriest **8** sweeter, sweetest **9** more famous, most famous **10** worse, worst

**More Practice** Correct answers are given. **1** older **2** prettiest **3** shortest **4** braver **5** steeper **6** taller, less **7** most interesting **8** best

## LESSON 104

### Unit 42

**Lesson** **1** talked quietly **2** grows slowly **3** laughed loudly **4** Quickly opened **5** dives gracefully **6** flowed rapidly

**Practice** **2** read silently (how) **3** Away flew (where) **4** sleeping now (when) **5** Put there (where) **6** sang beautifully (how) **7** heard distinctly (how) **8** Here comes (where) **9** arrives today (when) **10** never laugh (when) **11** Come inside (where) **12** sleeps noisily (how)

## LESSON 107

### Unit 43

**Review** **1, 5** false **2, 3, 4** true

**Practice** **2** so tired **3** exceedingly hot **4** extremely talented **5** too many **6** quite dark **7** unusually large **8** almost empty **9** so small **10** unnecessarily long, very boring

**More Practice** The word being modified is italicized. **2** Twice *left* (V) here **3** dangerously *steep* (Adj) **4** Very *few* (Adj), *missed* (V) yesterday **5** too *heavy* (Adj)

## LESSON 109

### Unit 44

**Review** **1** verbs, adjectives **2** ly **3** how, when, where

**Lesson** adverbs

**Practice** **A** Modifiers are underlined. **1** very promptly, answered promptly **2** most industriously, worked industriously **3** quite sharply, spoke sharply **4** so clearly, see clearly **5** almost always, always knows **6** too hurriedly, wrote hurriedly **7** very quietly, Sit quietly **8** very soon, call soon **9** almost never, never take **10** so beautifully, sings beautifully **B 1** are n't **2** will not **3** can not

## LESSON 112

### Unit 45

**Review** Words to cross out: **1** never **2** nouns **3** Who?

**Practice** **1** quietly **2** softly **3** surely **4** merrily **5** clearly **6** loudly **7** lately **8** quickly **9** wearily **10** courteously **11** faithfully **12** busily

**More Practice** **A** Possible answers are: **1** fast and well **2** mornings and evenings **3** here and there **4** long and loudly **B 1** unusually **2** terribly **3** too **4** most **5** clearly **C 1** quite **2** Almost **3** so **4** more **5** most

## LESSON 114

### Unit 46

**Lesson** more slowly, most slowly; later, latest; more loudly, most loudly; more happily, most happily; nearer, nearest; sooner, soonest; more speedily, most speedily; more quickly, most quickly

**Practice** Words to cross out: **1** most **2** most **3** better **4** fastest **5** more **6** faster **7** most **8** more

**Detective Work** **2** dog **3** cat **4** fox **5** wolf **6** snake **7** mouse **8** lion **9** seal **10** lamb **11** skunk **12** hare **13** sheep **14** bear **15** tiger

## LESSON 117

### Unit 47

**Practice** Modified words are in parentheses. **1** industrious (squirrel); away, hastily (scampered) **2** shy (girl); sweetly (sang) **3** old (mill); still (stand) **4** Many (vegetables); sunny (garden); easily (grow) **5** worn (pages); mostly (worn) **6** iron (gate); rusty (gate); quite (rusty) **7** sick (she); continually (sick) **8** immigrant (family); near (poverty) **9** good (grades); early (decided) **10** yellow (pencil); suddenly (broke)

**More Practice** Modifiers vary; words being modified are listed. **1** sure (Adj) **2** put (V), dress (N) **3** sentences (N) **4** carefully (Adv) **5** does (V) **6** child (N), speaks (V) **7** quickly (Adv) **8** good (Adj) **9** shoes (N), small (Adj) **10** often (Adv) **11** waiting (V) **12** clearly (Adv)

## LESSON 119

### Unit 48

**Practice** Words to cross out: **1** awful **2** sure **3** good **4** real **5** real **6** good **7** real **8** well **9** sure **10** badly **11** real **12** sure **13** good **14** well **15** badly

# Science Textbook



## Page 407

### Write About It

Answers will vary. Student should explain why he chose the job.

## CHAPTER 9

## Lesson 1
## Describing Matter

## Page 410

### Learn and Wonder

Rainwater is a liquid. Ice is a solid.

## Page 411

### Explore

Possible prediction: The mixture will be a liquid.

**3** The mixture is softer than a solid, such as cornstarch, but firmer than a liquid. **4** No, it does not splash out of the bowl. **5** The penny will slowly sink into the mixture. **6** The mixture can be made into clumps like a solid, but it can also be poured like a liquid. Small objects sink into it, as in a liquid. **7** Student may think of the mixture as either a solid or a liquid since it has the properties of both. **8** Answers will vary.

### Explore More

Adding more water will make the mixture more like a liquid. Letting it dry will make it more like a solid.

## Page 412

**Read a Photo** You can tell that the rock has more mass because the balance pan containing the rock is lower.

## Page 413

### Quick Check

**Compare and Contrast** Alike: Both are properties of matter. Different: Mass is the amount of matter an object contains, but volume is the amount of space an object occupies.

**Critical Thinking** The desk has mass and volume in addition to other properties of matter, such as color, hardness, and shape.

## Page 415

### Quick Lab

**1** The ice cubes in the pan represent the solid state of matter. **2** The ice cubes have melted and represent the liquid state of matter. Some ice may remain in the pan. **4** After heating, the ice will continually melt into a liquid water. The water will change into a gas as more heat is applied.

### Quick Check

**Compare and Contrast** Similar: All solids, liquids, and gases have mass. Different: Solids and liquids keep the same volume, but gases do not. Solids keep the same shape, but liquids and gases do not. Particles in solids are held together tightly. Particles in gases can move about freely.

**Critical Thinking** The cornstarch mixture can be classified as both a solid and a liquid since it has properties of both states of matter.

## Page 416

**Read a Photo** They are classified as objects made by people and found in nature. They can be sorted according to color, hardness, size, shape, or use.

### Quick Check

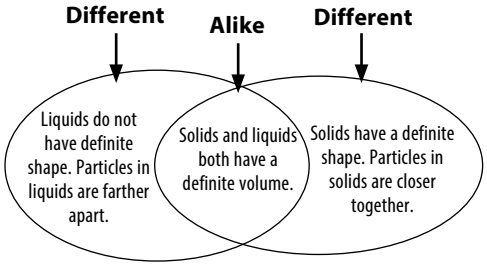
**Compare and Contrast** Using matter can mean using it more than once, using it up, or throwing it away. Reusing matter also means using it more than once, but it can also mean finding a new purpose for something that has already been used.

**Critical Thinking** Answers will vary.

## Page 417

### Lesson Review

**Think, Talk, and Write** **1** states **2**




**3** possible answers: solid: textbook, desks, door; liquid: water in an aquarium; gas: air, bubbles in an aquarium **4** C **5** Matter is anything that has mass and takes up space.

**Writing Link** Student's paragraph should reflect an understanding of how the properties of their objects make them useful.

**Math Link** possible answers: two 2-quart; two 1-quart and one 2-quart; four 1-quart

## Page 418

### Write About It

Student should use words that describe how the items look, sound, smell, taste, and feel. A well-written description will show how the items are similar and different.

## Page 419

### Solve It

**1** 48 $cm^3$ **2** 6,138 $cm^3$ **3** 4,750 $cm^3$

## Lesson 2
## Measurement

## Page 420

### Look and Wonder

A builder uses his or her tools to make the measurements needed.

## Page 421

### Explore

Possible prediction: The ruler can be used to draw units of equal size in each shape, to determine which shape has the most number of units.

**2** Since all the squares are equal in size, the shape with the highest number of squares will be the largest. The smallest shape will be the one that has the lowest number of squares. **4** The shape with the fewest number of squares will be the smallest. The shape with the most squares will be the largest. **5** The 1-inch squares were drawn onto the shapes. Since the squares are all the same size, the shape that contained more 1-inch squares would be larger. **6** Answers will vary based on student's predictions.

### Explore More

Have student draw three different shapes onto graph paper and cut out the shapes. Have student count the number of boxes in each shape. Encourage student to discuss how he used the boxes from the graph paper to compare the sizes of the shapes.

## Page 422

**Read a Table** 100 cm = 1 m; 100,000 cm = 1 km

## Page 423

### Quick Check

**Problem and Solution** Multiplying the length by the width of the room will give you the area of the room. Multiplying the length times the width times the height will give you the volume of the room.

**Critical Thinking** Possible answers: Draw squares of identical size in the triangle, then count the number of squares. Draw the triangle on a piece of graph paper, and count the number of boxes in the triangle.

## Page 425

**Read a Diagram** Particles in hot air are farther apart than particles in cooler air. Because the particles are farther apart, hot air is less dense than cooler air. Since the air inside the balloon is less dense than the air outside the balloon, the balloon floats, or rises.

### Quick Lab

**1** Possible predictions: They will mix together; they will separate into layers. **3** The liquids separated into layers. From top to bottom the layers are oil, water, and syrup. Answers will vary based on student's predictions. **4** The stick will float above the oil. The pasta will float above the syrup. The crayon will float above the water and below the oil. A liquid or solid will float above something that is more dense than it is.

### Quick Check

**Problem and Solution** 8 g/cm$^3$

**Critical Thinking** The balloonist should heat the air in the balloon to make it rise. Since warm air has less mass per unit of volume than cooler air, warm air will have a lower density and will make the balloon rise.

## Page 426

### Quick Check

**Problem and Solution** A rock's mass is measured by a balance.

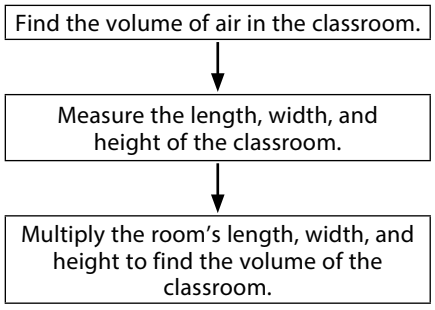
**Critical Thinking** A balance measures mass. A scale measures weight, or the force of gravity on mass.

## Page 427

### Lesson Review

**Think, Talk, and Write** **1** area

**2**




**3** Foam is much less dense than rocks are. It takes a much greater volume of foam to have the same mass as a rock. **4** D **5** rulers, meter sticks, measuring cups, balances, scales

**Writing Link** Student's report should describe measuring the length, width, height, mass, volume, density, and weight of objects.

**Math Link** The area will be the product of the length and width. The volume will be the product of the length, width, and height.

## Page 429

### Focus on Skills

**Apply It** **1** Student's estimates of mass and length will vary. Most students will say that it was easier for them to estimate length because they have had more opportunities to measure the lengths of objects.

# Lesson 3 Classifying Matter

## Page 430

### Look and Wonder

elements

## Page 431

### Explore

**Purpose** Student will discover that copper wire and aluminum foil are metals. He will also learn that charcoal is not a metal.

**Procedure** **2** Copper wire and aluminum are shiny and bendable. **3** The ends of the copper wire and aluminum foil became cold. The charcoal did not get cold.

**Draw Conclusions** **4** Of the three materials, copper wire and aluminum foil have the most in common. **5** Copper wire and aluminum foil are metals.

### Explore More

Have student list the materials he uses in a chart. Emphasize that only simple

materials should be tested, not objects that may contain different materials.

## Page 433

### Quick Check

**Classify** possible answers: nitrogen and oxygen; iron and copper

**Critical Thinking** No, table salt is a compound that contains two different elements. An element is a substance that is made up of only one type of matter.

## Page 435

**Read a Table** 9; no; gas

### Quick Lab

**1** possible properties: shiny; bends; can be shaped into a sheet **3** The properties should be the same as those listed in step 1. **4** Yes, the smaller pieces of aluminum foil are still aluminum foil. The pieces of foil have the same properties as the whole sheet of foil. The atoms that make up the foil have not changed.

### Quick Check

**Classify** Answers will vary. Possible answer: Elements in the periodic table are grouped together based on their properties.

**Critical Thinking** Diamonds and coal are both made of carbon. They are different because of the way their carbon atoms are joined.

## Page 436

**Read a Diagram** magnetic elements: iron (Fe), cobalt (Co), nickel (Ni); elements that form salts when they react with any element from column 1: fluorine (F), chlorine (Cl), bromine (Br), iodine (I), and astatine (At)

### Quick Check

**Classify** Elements that have similar properties are grouped near each other.

**Critical Thinking** possible answers: to test how the element reacts with other elements; to be safe when doing experiments

## Page 437

### Lesson Review

**Think, Talk, and Write** **1** element **2**

| Element | Classification |
|---|---|
| oxygen | nonmetal |
| carbon | nonmetal |
| hydrogen | nonmetal |
| gold | metal |
| silver | metal |
| copper | metal |
| iron | metal |
| aluminum | metal |
| nickel | metal |
| nitrogen | nonmetal |
| silicon | metalloid |

**3** Elements cannot be broken down into a simpler form. All matter is composed of elements. **4** B **5** Matter is made of a single element or a combination of elements.

**Writing Link** Student's report should mention that few elements are used in their pure form. Most substances that student uses in everyday life contain a combination of elements.

**Math Link** The periodic table contains 99 solids, 11 gases, and 2 liquids.

## Page 439

### Write About It

In the field Sisir Mondal collects rock samples and makes a geologic map of where the rocks were found. In the lab he uses tools to get a closer look at the rock samples to find out which minerals they contain. Sisir may classify the rocks by location, quantity, the minerals they contain, or their use for industry.

## Pages 440–441

### Chapter 9 Review

**Vocabulary** **1** matter **2** weight **3** element **4** property **5** density **6** metals **7** gravity **8** periodic table **9** mass **10** atom

**Skills and Concepts** **11** You can recycle and reuse many kinds of matter. **12** Use a ruler to measure the length and width of the side of the box. Then multiply the length by the width to find the area. **13** Hydrogen cannot be broken down into anything simpler. It is made up of only one type of atom—hydrogen atoms. **14** Copper is a solid and a metal. It is shiny and bendable. Copper conducts heat. It is usually a brownish-orange color. **15** True. The density of the sailboat is less than the volume of water it is displacing, which allows the sailboat to float. **16** False. Mass is the amount of matter in an object. This would not change on the moon; however, your weight would be less on the moon because the moon has less gravity than Earth. **17** A **18** C **19** A **20** Matter is anything that has mass and takes up space. It is classified based on its properties.

**Performance Assessment**
**4 points:** Student has chosen an element from the periodic table; demonstrated that research was conducted; named four properties of the element; included illustrations.
**3 points:** Student has correctly completed 3 of the 4 activities.
**2 points:** Student has correctly completed 2 of the 4 activities.
**1 point:** Student has correctly completed 1 of the 4 activities.

## Pages 441A–441B

### Test Preparation

**1** A **2** D **3** C **4** B **5** D **6** B **7** C **8** A **9** Possible answers: shiny, can be bent or hammered into a shape, conducts heat, conducts electricity **10** Weight measures the amount of gravity between two objects. Mass is how much matter is in an object.

# CHAPTER 10

## Lesson 1
## How Matter Can Change

### Page 444

**Look and Wonder**

a chemical change to the outside of the car

### Page 445

**Explore**

Possible prediction: The mass and volume of a piece of clay will not change when its shape changes.

**1** The mass of the clay samples will vary. **5** The clay's physical shape changes, but its mass and volume do not. However, if student shapes the clay into a hollow, sealed shape, such as a balloon, its volume will change. **6** Some properties of matter, such as shape, can be changed easily. Other properties, such as mass and volume, are more difficult to change.

**Explore More**

Have student repeat the experiment using dried clay. The mass and the volume will change. The difference will be the amount of water that is removed from the clay, which may be negligible.

### Page 447

**Quick Check**

**Sequence** When ice turns to water, it goes through a physical change. It changes state, from a solid to a liquid.

**Critical Thinking** Possible answers: Water vapor turning to rain is an example of both a physical change and a change in state from gas to liquid. Cracks in the sidewalk are physical changes. When paper is folded into an airplane shape, this causes a physical change to the paper.

### Page 449

**Read a Diagram** The particles of ice move faster, changing the ice into a liquid. When energy is added to water, the water changes into a gas.

**Quick Lab**

**2** Student's predictions will vary. **3** The water in the dish under the lamp or in sunlight evaporated first because the heat from the lamp or the sun, respectively, added energy to the water, giving the particles enough energy to move into the gas state.

**Quick Check**

**Sequence** Energy is added to the water and the water particles move faster and farther apart until the water changes to a gas. As water changes to a solid, it loses energy and its particles move slower and closer together, forming ice.

**Critical Thinking** The water absorbs energy from the sun and changes state from a liquid to a gas through the process of evaporation.

### Page 451

**Read a Diagram** Iron sulfide has a different color than the original materials and has different properties than iron and sulfur. Light and heat energy were released during the chemical reaction.

**Quick Check**

**Sequence** Tarnish forms on silver as a result of silver reacting with sulfur in the air. The change in the color of the silver indicates a chemical change. Polishing removes the tarnish, also causing a chemical change.

**Critical Thinking** Yes, it is a chemical change. The metal statue has changed color, indicating that a new substance has formed.

### Page 452

**Quick Check**

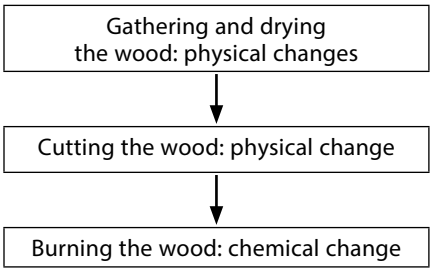
**Sequence** Physical changes: Different wet and dry ingredients are mixed together; kneading the dough changes its shape; slicing the bread changes its shape. Chemical change: Baking the dough changes dough to bread.

**Critical Thinking** A change in color indicates a chemical change. A brown apple has different properties than a fresh apple. The brown apple can smell and taste different.

### Page 453

**Lesson Review**

**Think, Talk, and Write** **1** evaporation **2**




**3** Folding or cutting the paper would show a physical change. Burning the paper would show a chemical change. **4** A **5** Possible answer: Matter can be changed physically in ways such as cutting, stretching, or melting. Matter can be changed chemically by burning or reacting with another material, such as acid rain.

**Writing Link** Student should explain the difference between a physical and chemical change.

**Health Link** Student should discuss changes that occur during chewing and digestion in the stomach and intestines.

### Page 455

**Write About It**

Student's chart and summary should include the following: First, the statue was reddish. Next, oxygen combined with the copper to form copper oxide, and the statue turned dark brown. Last, rainwater and carbon dioxide in the air reacted with the copper oxide to form copper hydroxide, and the statue turned green.

## Lesson 2
## Mixtures

### Page 456

#### Look and Wonder

Possible answers: Leaves, rocks; Some dissolve, some sink, some float.

### Page 457

#### Explore

Possible predictions: Salt and water will form a mixture; sand and water will not form a mixture; sugar and water will form a mixture; gelatin and water will form a mixture.

**3** The salt will dissolve in the water; the sand will not. **4** Both the sugar and gelatin will dissolve in water. The mixture will thicken and form a solid. **5** Student should review his prediction. He should conclude that some materials, such as salt, sugar, and gelatin will dissolve in water, while others, such as sand, will not.

#### Explore More

Warm water will dissolve the solids faster than cold water will. The warm water will also dissolve more of these solids than cold water will.

### Page 459

**Read a Photo** The four ways to make a mixture are to combine solids and solids, solids and liquids, solids and gases, and liquids and liquids.

#### Quick Check

**Classify** All three are combinations of two or more types of matter.

**Critical Thinking** The result is a mixture because the peas and the carrots are not blended completely. In the mixture the peas and carrots are still separate.

### Page 460

**Read a Photo** Dust and air form a mixture. Dust particles are denser than air and will settle over time.

### Page 461

#### Quick Lab

**2** The paper clips are attracted to the magnet. **3** The colander will catch the pebbles and allow the sand to pass through. **4** Physical properties, such as size and magnetism, can be used to separate the parts of a mixture. Smaller particles of sand will slip through a colander. Metal paper clips are attracted to magnets.

#### Quick Check

**Classify** Sand and water can be separated by settling; buttons and beads, by sorting; and spaghetti and water, by filtering.

**Critical Thinking** A filter works best since the fine particles of salt will pass through the filter, leaving the larger grains of sand behind.

### Page 462

#### Quick Check

**Classify** Solutions can be separated by evaporation and distillation.

**Critical Thinking** Distillation can be used to separate pure water from salt water. After the heated liquid becomes a gas, the salt remains behind. The salt is removed and the gas is then run through a condenser. The condenser cools the gas and collects the water.

### Page 463

#### Lesson Review

**Think, Talk, and Write**

**1** condensation

**2**

| Mixture | Solution |
|---|---|
| vegetable soup, smoke, apple juice and water, oil and water, trail mix | bronze, salt water |

**3** Blood is a mixture. Filtration can be used to separate the solids from blood. **4** C **5** Possible answer: Mixtures can be separated by settling, sorting, filtering, distillation, and evaporation.

**Math Link** ¾ or 75% copper

**Art Link** Student can use crayons to test his ideas. Red + blue = purple; red + yellow = orange; blue + yellow = green; red + blue + yellow = brown.

### Page 465

#### Focus on Skills

**Apply It** **1** The independent variable is the temperature of the air around each paper towel. The dependent variable is the amount of time it takes for the water to evaporate. **2** Student should find that the paper towel in the warmest location dried first. Heat speeds evaporation. A greater amount of heat transmits more energy to the water particles. This increase in energy helps the water particles to break away from the liquid and become water vapor. **3** Student should suggest that the independent variable, temperature, be put on the horizontal or *x*-axis and the dependent variable, time, be put on the vertical or *y*-axis.

## Lesson 3
## Compounds

### Page 466

#### Look and Wonder

Fireworks contain different kinds of compounds that give them their bright colors.

### Page 467

#### Explore

Possible prediction: The iron in the steel wool will rust.

**4** The oxygen and water vapor in the air react with the iron to form rust. Student should compare his results with his predictions. **5** possible answers: because the steel reacts with air; because the iron in the steel reacts with water vapor and oxygen

#### Explore More

Rusting occurs when iron reacts with oxygen to form iron oxide. Objects

can rust underwater since water contains oxygen. Student will find that the steel wool rusts underwater, but does so more slowly than in air.

## Page 469

**Read a Diagram** **1** The + (plus) sign means that the two elements are combined, or added together. **2** The arrows point to the new compounds that are formed when the elements are combined.

### Quick Check

**Problem and Solution** Elements in a compound must be chemically separated.

**Critical Thinking** Possible answers: The parts in a compound do not keep their own properties. In a mixture, they do. The parts that make up a compound must be chemically separated, but the parts that make up a mixture can be physically separated.

## Page 470

**Read a Diagram** Water is neutral and will not cause the litmus paper to change color.

### Quick Lab

**1** The red litmus paper will turn blue in the baking-soda solution. The blue litmus paper will stay the same. **2** The blue litmus paper will turn red in the vinegar. The red litmus paper will not change color. **3** The vinegar and baking soda will react. Student should observe the solution bubble. **4** Base: baking-soda solution; acid: vinegar. Red litmus paper reacts with acids, and blue litmus paper reacts with bases.

### Quick Check

**Problem and Solution** Combine an acid and a base.

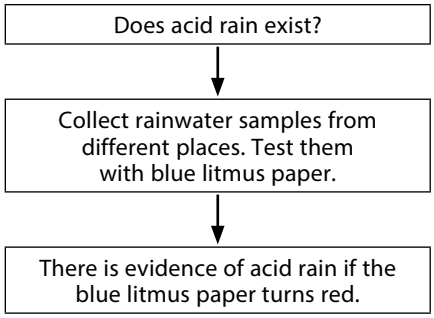
**Critical Thinking** The acid helps to dissolve food, making it easier to digest.

## Page 471

### Lesson Review

**Think, Talk, and Write** **1** base

**2**




**3** The oxygen in the air is part of a mixture. It still has its original physical properties. The oxygen in water is chemically combined with hydrogen. It forms a new substance with its own properties and cannot be inhaled. **4** C **5** Possible answer: When matter goes through a chemical change, a new compound can form, or a compound can break down into two or more elements.

**Writing Link** The report should indicate that most of the materials we work with are compounds.

**Art Link** Student's chart will vary depending on the materials he chose.

## Pages 472–473

## Be a Scientist

### Structured Inquiry

**Form a Hypothesis** Possible hypothesis: If an apple slice is exposed to oxygen, covering the apple slice with lemon juice will prevent oxidation.

**Test Your Hypothesis** **4** The apple slices on plate A did not turn brown. The apple slices on plates B and C did turn brown.

**Draw Conclusions** **5** Lemon juice on sliced apples did prevent oxidation. Water and lemon juice are different kinds of matter. Water does not prevent the oxidation process from occurring. **6** Lemon juice on sliced apples prevents a reaction with oxygen from taking place. Lemon juice is an antioxidant, or a substance that prevents or slows down oxidation.

### Guided Inquiry

**Form a Hypothesis** Possible hypothesis: If the apple slices are covered with vinegar, oxidation will stop.

**Draw Conclusions** Vinegar is another liquid that stops oxidation. Lemon juice could be added to fruit salad to keep the fruit from oxidizing.

## Pages 474–475

### Chapter 10 Review

**Vocabulary** **1** mixture **2** chemical change **3** compound **4** change of state **5** alloy **6** base **7** solution **8** evaporation **9** tarnish **10** distillation

**Skills and Concepts** **11** First, energy must be added to ice to change its state. As its temperature rises, the particles move faster. When the particles gain enough energy, the solid changes into a liquid. **12** The variable that should change is the amount of light to which the nails are exposed. Student should keep variables such as the nail's exposure to air, the temperature, and amount of water the same. **13** Carbon dioxide is a compound because a compound is formed when two or more elements combine chemically to become a new substance with new properties. **14** A base tastes bitter and has a slippery, soapy feel. **15** Physical changes take place as the different ingredients are blended together. Chemical changes take place when the batter is made into pancakes. **16** B **17** C **18** D **19** True. **20** Matter changes from one form to another as a result of physical changes and chemical changes.

**Performance Assessment**
**4 points:** Student has gathered the appropriate substances or made appropriate substitutions based on availability; defined and created a mixture; defined and created a

solution; described the possible results of heating or cooling his mixture and solution.
**3 points:** Student has completed 3 of the 4 possible parts of the task.
**2 points:** Student has completed 2 of the 4 possible parts of the task.
**1 point:** Student has completed 1 of the 4 possible parts of the task.

## Pages 475A–475B

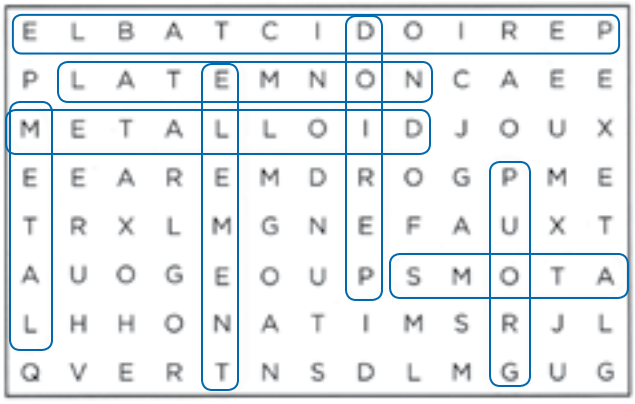
### Test Preparation

**1** C **2** D **3** C **4** D **5** A **6** C
**7** Physical change: the liquid in the kettle is turning into steam, which is water vapor (water in the gas state). Liquid water and water vapor are both water so this is a physical change.
**8** Chemical change: As the wood burns, it changes into energy and other types of matter. It is no longer wood. Therefore it is a chemical change.

## ACTIVITY 17

### Properties of Matter Word Search

(Science Eleventh Review Lesson)



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## ACTIVITY 18

### How Big Is the Bubble?

(Science Lesson 111)

#### Procedure

**5** Possible answers: The bubbles varied in size from small to large and were generally round in shape. **6** Possible answer: The soap looked the same before and after blowing bubbles. **7** The soap solution changed size and shape but each time the bubble burst the soap returned to the shape of the pan. The bubble solution remained unchanged and more bubbles could be formed.


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