Science 5, 5th Edition • Lesson Plan Overview

Chapter 1: About Matter

IA Instructional Aid **PPT pres.** PowerPoint presentation

Pages	Objectives	Resources & Materials	Assessments
Lesson 1 Introduction to Matter			
2–8	1.1 Infer from key text features the topics for ***SCIENCE 5***. 1.2 Identify what matter is. 1.3 Relate matter and mass. 1.4 Explain why it is beneficial to know how matter works. **BWS** Importance of Humans (explain) 1.5 Differentiate worldviews regarding the origin of matter. **BWS** History of Nature (evaluate)	**Teacher Edition** • IA 1.1: Anticipation Guide: About Matter **Activities** • Answers in Genesis: Seeing the Invisible (pp. 7–8) **BJU Press Trove*** • Video: About Matter • PPT pres.: Lesson 001 **Materials** • supplies for lesson introduction • 14 sticky notes • supplies for Answers in Genesis mystery bag activity	**Student Edition** • Quick Check (p. 8)
Lesson 2 Measurements of Matter			
9–14	2.1 Identify what volume, mass, and density are. 2.2 Identify the scientific instruments used to measure volume and mass. 2.3 Explain how to determine the volume of a liquid and the volume of a solid. 2.4 Relate density to matter.	**Teacher Edition** • IA 1.2: Comparing Densities **BJU Press Trove** • Video: Density of Ice • Link: Triple-Beam Balance • PPT pres.: Lesson 002 **Materials** • cube-shaped wooden block • centimeter ruler	**Student Edition** • Quick Check (p. 14) **Activities** • Study Guide (pp. 9–11) **Assessments** • Quiz 1A
Lesson 3 Exploration: Measuring Matter Matters!			
15	3.1 Measure matter, using scientific instruments. 3.2 Collect, record, and interpret data related to length, mass, volume, and temperature of matter. 3.3 Communicate results of observations by comparing data.	**Teacher Edition** • IA 1.3: Science Inquiry Skills • IA 1.4: Science Safety Tips **Activities** • Science Inquiry Skills (p. 3) • Science Safety Tips (p. 4) • Exploration: Measuring Matter Matters! (pp. 13–15) **Materials** • supplies for measuring matter Exploration; see Activities p. 13	**Assessments** • Exploration Rubric

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lessons 4–5 Physical Properties of Matter			
16–23	4–5.1 Differentiate atoms, elements, molecules, and compounds. 4–5.2 Identify physical properties of matter. 4–5.3 Explain why distinguishing the physical properties of matter is beneficial. **BWS** Purpose of Science (explain) 4–5.4 Compare the states of matter. 4–5.5 Describe the job of a materials engineer. **BWS** Importance of Humans (explain)	**Teacher Edition** • IA 1.5: The Periodic Table of Elements • IA 1.1: Anticipation Guide: About Matter • IA 1.1 Key: Anticipation Guide: About Matter **BJU Press Trove** • Video: Plasma • Video: Materials Engineer • PPT pres.: Lessons 004–5 **Materials** • supplies for lesson introduction • assortment of colored, interlocking building blocks • long-stemmed rose, with thorns • plastic syringe	**Student Edition** • Quick Check (p. 23) **Activities** • Study Guide (pp. 17–19) **Assessments** • Quiz 1B
Lessons 6–7 Exploration: "Ph"antastic Physical Properties			
24	6–7.1 Observe physical properties of matter. 6–7.2 Collect, record, and interpret data about each form of matter. 6–7.3 Classify the matter according to its physical properties. 6–7.4 Explain why understanding the physical properties of matter can be beneficial. **BWS** Purpose of Science (explain)	**Teacher Edition** • IA 1.7: Building a Circuit Tester **Activities** • Exploration: "Ph"antastic Physical Properties (pp. 21–23) **Materials** • supplies for physical properties of matter review game • supplies for physical properties Exploration; see Activities p. 21	**Assessments** • Exploration Rubric
Lessons 8–9 STEM: Float a Boat			
25	8–9.1 Design a model boat that will float, using the engineering design process. 8–9.2 Create a model boat that will float. 8–9.3 Test and compare models to improve the original design. 8–9.4 Communicate how the design solves the problem. **BWS** Purpose of Science (apply)	**Teacher Edition** • IA 1.8: STEM: The Engineering Design Process **Activities** • STEM: The Engineering Design Process (p. 5) • STEM: Float a Boat (pp. 25–27) **Materials** • supplies for designing a boat that will float; see Teacher Edition p. 25	**Assessments** • STEM Rubric

Pages	Objectives	Resources & Materials	Assessments
Lesson 10 Review			
	10.1 Recall terms and concepts from Chapter 1.	**Activities** • Study Guides from Chapter 1 **Assessments** • Quizzes 1A–1B **Materials** • 2 magnetic or paper markers	
Lesson 11 Test			
	11.1 Apply terms and concepts from Chapter 1.		**Assessments** • Test 1 **BJU Press Trove** • Chapter 1 Test Bank

Chapter 2: Changes in Matter

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Pages	Objectives	Resources & Materials	Assessments
Lesson 12 Physical Changes to Matter			
26–31	12.1 Relate the conservation of matter to the origin of matter. **BWS** History of Nature (explain) 12.2 Explain what a physical change is. 12.3 Identify physical changes to the states of matter. 12.4 Explain the effect temperature has on physical changes to the states of matter.	**BJU Press Trove*** • Video: Changes in Matter • PPT pres.: Lesson 012 **Materials** • several ice cubes in a clear plastic cup	**Student Edition** • Quick Check (p. 31) **Activities** • Study Guide (pp. 29–30) **Assessments** • Quiz 2A
Lesson 13 Investigation: Matter and Mass			
32	13.1 Predict whether the mass of matter will change due to a physical change in matter. 13.2 Measure the mass of matter. 13.3 Infer whether matter has been added or lost due to a physical change.	**Teacher Edition** • IA 2.1: Scientific Investigation • IA 2.2: Scientific Variables **Activities** • Scientific Investigation (p. 1) • Scientific Variables (p. 2) • Investigation: Matter and Mass (pp. 31–32) **Materials** • twisting balloon, per group • supplies for matter and mass Investigation; see Activities p. 31	**Assessments** • Investigation Rubric
Lessons 14–15 Heterogeneous Mixtures			
33–37	14–15.1 Identify what a mixture is. 14–15.2 Explain what a heterogeneous mixture is. 14–15.3 Identify examples of heterogeneous mixtures. 14–15.4 Identify ways substances in a heterogeneous mixture can be separated using the physical properties of matter.	**Teacher Edition** • IA 1.2: Comparing Densities **BJU Press Trove** • PPT pres.: Lessons 014–15 **Materials** • snack mix in resealable snack-sized plastic bag, per student • tea bag	**Student Edition** • Quick Check (p. 37) **Activities** • Study Guide (pp. 33–34) **Assessments** • Quiz 2B
Lesson 16 Investigation: Separating Mixtures			
38	16.1 Predict which method will separate heterogeneous mixtures into their individual substances. 16.2 Experiment to test the hypotheses. 16.3 Collect, record, and interpret data for each method of separation. 16.4 Infer why knowing how to separate heterogeneous mixtures is beneficial. **BWS** Purpose of Science (explain)	**Activities** • Investigation: Separating Mixtures (pp. 35–37) **Materials** • supplies for separating mixtures; see Activities p. 35	**Assessments** • Investigation Rubric

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Pages	Objectives	Resources & Materials	Assessments
Lesson 17 Inquiry: Separating More Mixtures			
38	17.1 Formulate hypotheses to test methods for separating heterogeneous mixtures. 17.2 Plan the procedure to test the hypotheses. 17.3 Collect, record, and interpret data for each method of separation. 17.4 Communicate the results of the methods of separation tested.	**Activities** • Inquiry: Separating More Mixtures (pp. 39–41) **Materials** • supplies for separating more mixtures; see Activities p. 39	**Assessments** • Inquiry Rubric
Lesson 18 Homogeneous Mixtures			
39–43	18.1 Relate the terms *solution* and *homogeneous mixture*. 18.2 Identify the parts of a solution. 18.3 Identify types of solutions. 18.4 Explain ways to increase the rate of dissolving.	**BJU Press Trove** • Link: Solutions • PPT pres.: Lesson 018 **Materials** • index card, per student	**Student Edition** • Quick Check (p. 43) **Activities** • Study Guide (pp. 43–44) **Assessments** • Quiz 2C
Lesson 19 Exploration: Where's the Fizz?			
44	19.1 Measure the mass of matter. 19.2 Observe changes in an open soft drink solution. 19.3 Collect, record, and interpret data. 19.4 Infer the relationship between the change to matter and the conservation of matter.	**Activities** • Exploration: Where's the Fizz? (pp. 45–48) **Materials** • supplies for soft drink solution Exploration; see Activities p. 45	**Assessments** • Exploration Rubric
Lesson 20 Investigation: A Disappearing Act			
45	20.1 Formulate a hypothesis to predict how surface area affects the ability of a solute to dissolve. 20.2 Experiment to determine how surface area affects the ability of a solute to dissolve. 20.3 Identify and control variables. 20.4 Infer how changing one variable can speed up the rate of dissolving.	**Activities** • Investigation: A Disappearing Act (pp. 49–50) **Materials** • supplies for dissolving a solute Investigation; see Activities p. 49	**Assessments** • Investigation Rubric

Pages	Objectives	Resources & Materials	Assessments
Lesson 21 Chemical Changes to Matter			
46–50	21.1 Explain what causes a chemical change to occur. 21.2 Identify evidence of a chemical change. 21.3 Relate chemical change to the conservation of matter. 21.4 Explain how understanding chemical changes in matter can be beneficial. **BWS** Purpose of Science (explain) 21.5 Infer how the job of a pastry chef relates to chemical changes in matter.	**Teacher Edition** • IA 1.5: The Periodic Table of Elements **BJU Press Trove** • Video: Pastry Chef • Link: Chemical Changes • PPT pres.: Lesson 021 **Materials** • labels, or containers with labels, of products in which water is the solvent • aluminum foil, 10 cm × 10 cm (4 in. × 4 in.); new candle in a candle holder; matches	**Student Edition** • Quick Check (p. 50) **Activities** • Study Guide (pp. 51–52) **Assessments** • Quiz 2D
Lesson 22 Investigation: A + B = WHAT?			
51	22.1 Create a hypothesis to predict which mixture will undergo a chemical change. 22.2 Experiment to determine which mixture will result in the formation of a new substance. 22.3 Collect, record, and interpret data. 22.4 Infer how matter was conserved during the chemical change.	**Activities** • Investigation: A + B = WHAT? (pp. 53–55) **Materials** • supplies for chemical change Investigation; see Activities p. 53	**Assessments** • Investigation Rubric
Lesson 23 Review			
	23.1 Recall terms and concepts from Chapter 2.	**Activities** • Study Guides from Chapter 2 **Assessments** • Quizzes 2A–2D **Materials** • supplies for review game	
Lesson 24 Test			
	24.1 Apply terms and concepts from Chapter 2.		**Assessments** • Test 2 **BJU Press Trove** • Chapter 2 Test Bank

Chapter 3: Interactions in Ecosystems

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Pages	Objectives	Resources & Materials	Assessments
Lesson 25 Factors and Organization of an Ecosystem			
52–63	25.1 Relate the study of ecosystems to Genesis 1:28. **BWS** Importance of Humans (explain) 25.2 Identify the two kinds of factors in an ecosystem. 25.3 Explain the relationships among individual organisms, populations, and communities of organisms. 25.4 Describe the functions of producers, consumers, and decomposers. 25.5 Explain why scavengers and decomposers are important to an ecosystem. **BWS** Design in Nature (explain)	**Teacher Edition** • IA 3.1: Red Knot Migration Route **Activities** • Ecosystems (pp. 57–58) **BJU Press Trove*** • Video: Interactions in Ecosystems • PPT pres.: Lesson 025	**Student Edition** • Quick Check (p. 63) **Activities** • Study Guide (pp. 59–61) **Assessments** • Quiz 3A
Lessons 26–27 STEM: Model an Ecosystem			
64	26–27.1 Forage an ecosystem for the biotic and abiotic factors for a terrarium. 26–27.2 Design a terrarium that will model an ecosystem, using the engineering design process. 26–27.3 Create a terrarium that will model an ecosystem. 26–27.4 Compare models to improve the original design. 26–27.5 Communicate how the model solves the problem. **BWS** Modeling in Science (explain)	**Activities** • STEM: Model an Ecosystem (pp. 63–65) **BJU Press Trove** • Link: Harvest Ecosystem Materials **Materials** • supplies for designing a terrarium; see Teacher Edition p. 64	**Assessments** • STEM Rubric
Lesson 28 Energy and Matter in an Ecosystem			
65–70	28.1 Create a food chain. 28.2 Differentiate between a food chain and a food web. 28.3 Describe the transfer of energy and matter from one organism to another. 28.4 Explain how competition affects population size.	**Teacher Edition** • IA 3.2: Forest Food Web • IA 3.3: Hundred Square **Activities** • Food Chain Cards (pp. 67–68) **BJU Press Trove** • PPT pres.: Lesson 028 **Materials** • 9 pieces of yarn or string, 10 cm (4 in.) each, per student	**Student Edition** • Quick Check (p. 70) **Activities** • Study Guide (pp. 69–72) **Assessments** • Quiz 3B

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Pages	Objectives	Resources & Materials	Assessments
Lesson 29 Exploration: Competitions and Connections			
71	29.1 Model the movement of matter and energy in an ecosystem. 29.2 Identify available resources in an ecosystem. 29.3 Explain how competition affects populations. 29.4 Analyze a data graph to determine results.	**Teacher Edition** • IA 3.4: Plant Cards • IA 3.5: Exploration Cards **Activities** • Exploration: Competitions and Connections (pp. 73–76) **BJU Press Trove** • Video: Energy Pyramid **Materials** • card stock, hole punch, and yarn or string • supplies for competition Exploration; see Activities p. 73	**Assessments** • Exploration Rubric
Lesson 30 Exploration: Owl Pellet Dissection			
72	30.1 Dissect an owl pellet. 30.2 Collect and record data from the dissection of an owl pellet. 30.3 Analyze data by identifying the bones in an owl pellet, using a key. 30.4 Explain how a scientist can determine what an animal eats by examining its waste.	**Activities** • Exploration: Owl Pellet Dissection (pp. 77–80) **BJU Press Trove** • Link: What Are Owl Pellets? **Materials** • picture of a Eurasian eagle-owl • supplies for owl pellet Exploration; see Activities p. 77	**Assessments** • Exploration Rubric
Lesson 31 STEM Career: Ecologist Answers in Genesis: Not What It Used to Be			
73	31.1 Describe the job of an ecologist. 31.2 Describe relationships between animals and plants in an ecosystem. 31.3 State the sources of food for both people and animals before the Fall. **BWS** History of Nature (explain) 31.4 Compare the evolutionary and biblical views of the history of carnivores. **BWS** History of Nature (formulate)	**Activities** • Answers in Genesis: Not What It Used to Be (pp. 81–82) **BJU Press Trove** • Video: Ecologist • Link: South Dakota Prairie • PPT pres.: Lesson 031	**Student Edition** • Quick Check (p. 73)
Lesson 32 Adaptations			
74–78	32.1 Recall the basic needs of plants and animals. 32.2 Describe adaptations that help plants and animals survive. **BWS** Design in Nature (evaluate) 32.3 Explain why animals migrate. 32.4 Describe the characteristics of hibernation.	**Teacher Edition** • IA 3.6: Old Sayings **BJU Press Trove** • Link: Kinds • PPT pres.: Lesson 032	**Student Edition** • Quick Check (p. 78)

Pages	Objectives	Resources & Materials	Assessments
Lesson 33 Relationships and Behaviors			
79–82	33.1 Identify different kinds of symbiosis. 33.2 Differentiate between instincts and learned behaviors. 33.3 Explain how studying ecosystems allows people to exercise good dominion. **BWS** Importance of Humans (explain) 33.4 Apply knowledge of interactions within ecosystems to solve everyday situations. **BWS** Purpose of Science (apply)	**BJU Press Trove** • PPT pres.: Lesson 033 **Materials** • 3 pieces of yarn, 61 cm (2 ft) each	**Student Edition** • Quick Check (p. 82) **Activities** • Study Guide (pp. 83–85) **Assessments** • Quiz 3C
Lessons 34–36 Exploration: Ecosystem Scavenger Hunt WebQuest			
83	34–36.1 Research the parts, roles, energy, and relationships in an ecosystem, using a WebQuest. 34–36.2 Record data about an ecosystem from the research. 34–36.3 Create a brochure about an ecosystem from the research. 34–36.4 Explain how understanding the interactions within this ecosystem allows people to exercise good dominion. **BWS** Importance of Humans (apply) 34–36.5 Communicate about the ecosystem, using the brochure.	**Activities** • Exploration: Ecosystem Scavenger Hunt WebQuest (pp. 87–90) **BJU Press Trove** • Video: Symbiosis • Link: Ecosystem Scavenger Hunt WebQuest Journey **Materials** • supplies for WebQuest Exploration; see Activities p. 87	**Assessments** • Exploration Rubric
Lesson 37 Review			
	37.1 Recall terms and concepts from Chapter 3.	**Teacher Edition** • IA 3.2: Forest Food Web **Activities** • Study Guides from Chapter 3 • Graphic Organizer from Chapter 3 **Assessments** • Quizzes 3A–3C **Materials** • marker, per team	
Lesson 38 Test			
	38.1 Apply terms and concepts from Chapter 3.		**Assessments** • Test 3 **BJU Press Trove** • Chapter 3 Test Bank

Chapter 4: Changes in Ecosystems

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Pages	Objectives	Resources & Materials	Assessments
Lesson 39 Seasonal and Water Cycles			
84–91	39.1 Explain why the earth has regular cycles of change. **BWS** Design in Nature (explain) 39.2 Describe areas of the earth that have four seasons and two seasons. 39.3 Describe the changes in the states of matter for water in the water cycle.	**Teacher Edition** • IA 4.1: Tonga Volcano Location **Activities** • Cycles of Matter and Energy (p. 91) **BJU Press Trove*** • Video: Changes in Ecosystems • Link: Tonga Volcano Eruption • G/E: Lesson 39 Vocabulary • PPT pres.: Lesson 039 **Materials** • globe or world map	**Student Edition** • Quick Check (p. 91)
Lesson 40 Carbon, Oxygen, and Nitrogen Cycles			
92–96	40.1 Describe the carbon, oxygen, and nitrogen cycles. 40.2 Differentiate between photosynthesis and respiration. 40.3 Explain why decomposers are a part of cycles of change. 40.4 Infer ways that cycles work together in an ecosystem.	**Teacher Edition** • IA 4.3: Molecules **BJU Press Trove** • Video: Cycles Work Together • G/E: Lesson 40 Cause and Effect • PPT pres.: Lesson 040 **Materials** • peanuts, unshelled, or picture of unshelled peanuts	**Student Edition** • Quick Check (p. 96) **Activities** • Study Guide (pp. 93–96) **Assessments** • Quiz 4A
Lesson 41 Investigation: Decomposers at Work			
97	41.1 Hypothesize the effect of the amount of water on the rate of decomposition. 41.2 Create a chart to record observations. 41.3 Record observations, using scientific terms. 41.4 Identify the independent, dependent, and controlled variables. 41.5 Analyze the effects of water on the rate of decomposition.	**Teacher Edition** • IA 2.2: Scientific Variables **Activities** • Investigation: Decomposers at Work (pp. 97–100) **BJU Press Trove** • G/E: Lesson 41 Entrance Ticket **Materials** • food scraps and bowl • supplies for decomposers Investigation; see Activities p. 97	**Assessments** • Investigation Rubric

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Pages	Objectives	Resources & Materials	Assessments
Lesson 42 Inquiry: Different Soils			
97	42.1 Hypothesize the effect of the type of soil on the rate of decomposition. 42.2 Create a chart to record observations. 42.3 Record observations, using scientific terms. 42.4 Identify the independent, dependent, and controlled variables. 42.5 Analyze the effects of the type of soil on the rate of decomposition. **BWS** Importance of Humans (formulate)	**Activities** • Inquiry: Different Soils (pp. 101–4) **BJU Press Trove** • Link: Decomposers • G/E: Lesson 42 Variables **Materials** • supplies for soils Inquiry; see Activities p. 101	**Assessments** • Inquiry Rubric
Lesson 43 Stresses on an Ecosystem			
98–102	43.1 Identify natural stresses on an ecosystem. **BWS** History of Nature (explain) 43.2 Explain how fires and floods can be beneficial to an ecosystem. 43.3 Compare a flood with a drought. 43.4 Describe the process of succession. 43.5 Evaluate how natural stresses maintain the earth. **BWS** Design in Nature (evaluate)	**Teacher Edition** • IA 4.5: Frayer Model • IA 4.5 Key: Frayer Model • IA 4.7: Facts and Generalization **BJU Press Trove** • PPT pres.: Lesson 043 **Materials** • news article or other information about a recent natural disaster	**Student Edition** • Quick Check (p. 102)
Lesson 44 STEM Career: Aquatic Ecologist Answers in Genesis: God Ordained Change			
103	44.1 Describe the job of an aquatic ecologist. 44.2 Relate the changes of the Flood to the cycles of change and succession in an ecosystem. 44.3 Explain the water cycle, using a model. 44.4 Relate the cycles of change to God's care of His creation. **BWS** History of Nature (formulate)	**Activities** • Answers in Genesis: God Ordained Change (pp. 105–6) **BJU Press Trove** • Video: Aquatic Ecologist • Link: Aquatic Ecosystems • Link: Flood Initiation • PPT pres.: Lesson 044 **Materials** • supplies for water cycle model	**Student Edition** • Quick Check (p. 103)

Pages	Objectives	Resources & Materials	Assessments
Lesson 45 Ecosystems and Humans			
104–10	45.1 Formulate a biblical approach to the use of natural resources. **BWS** Importance of Humans (formulate) 45.2 Describe man-made stresses on an ecosystem. 45.3 Differentiate between a native species and an invasive species. 45.4 Describe the requirements for a species to be considered extinct, endangered, or threatened. 45.5 Summarize the biblical relationship people should have with ecosystems. **BWS** Importance of Humans (apply)	**Teacher Edition** • IA 4.6: Opinion • IA 4.9: Ecosystem Changes **BJU Press Trove** • PPT pres.: Lesson 045 **Materials** • light bulb	**Student Edition** • Quick Check (p. 110) **Activities** • Study Guide (pp. 107–10) **Assessments** • Quiz 4B
Lessons 46–47 Exploration: Stress Alert!			
111	46–47.1 Design a food web for an ecosystem. 46–47.2 Create a model to show succession in an ecosystem after the stress of fire. **BWS** Modeling in Science (explain) 46–47.3 Observe succession in an ecosystem with a model. 46–47.4 Describe how the matter and energy in an ecosystem are affected by the stress of fire. 46–47.5 Summarize succession in an ecosystem.	**Teacher Edition** • IA 3.2: Forest Food Web **Activities** • Exploration: Stress Alert! (pp. 111–21) **BJU Press Trove** • Video: Succession **Materials** • supplies for stress Exploration; see Activities p. 111	**Assessments** • Exploration Rubric
Lesson 48 Review			
	48.1 Recall terms and concepts from Chapter 4.	**Activities** • Study Guides from Chapter 4 • Graphic Organizer from Chapter 4 **Assessments** • Quizzes 4A–4B **Materials** • 16 index cards	
Lesson 49 Test			
	49.1 Apply terms and concepts from Chapter 4.		**Assessments** • Test 4 **BJU Press Trove** • Chapter 4 Test Bank

Chapter 5: Biomes

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Pages	Objectives	Resources & Materials	Assessments
Lesson 50 Biomes			
112–20	50.1 Relate the biosphere, biomes, and ecosystems. 50.2 Describe the influence of location on a land biome's climate. 50.3 Locate land and aquatic biomes, using a map. 50.4 Describe the job of a game warden.	**Teacher Edition** • IA 5.1: Climate and Biomes • IA 5.2: Biomes of the World **Activities** • The Biosphere (p. 123) • Biomes (p. 124) **BJU Press Trove*** • Video: Biomes • Video: Game Warden • Link: Biomes of the World • PPT pres.: Lesson 050 **Materials** • globe • flashlight	**Student Edition** • Quick Check (p. 120)
Lesson 51 Tundra and Taiga			
121–25	51.1 Describe characteristics of the tundra and the taiga. 51.2 Identify ways that plants and animals survive in the tundra and taiga. **BWS** Design in Nature (explain) 51.3 Compare the characteristics of the tundra and the taiga.	**Activities** • Tundra and Taiga (p. 125) **BJU Press Trove** • Video: Musk Oxen • Link: Summer in the Taiga • Link: Winter in the Taiga • PPT pres.: Lesson 051 **Materials** • supplies for permafrost demonstration • globe	**Student Edition** • Quick Check (p. 125) **Activities** • Study Guide (pp. 127–30) **Assessments** • Quiz 5A
Lesson 52 Forests			
126–30	52.1 Describe characteristics of temperate forest and tropical rainforest biomes. 52.2 Give examples of ways that God designed plants and animals in the temperate forest to survive the changing seasons. **BWS** Design in Nature (explain) 52.3 Differentiate between coniferous and deciduous trees. 52.4 Sequence the layers of the rainforest.	**Teacher Edition** • IA 5.3: Forest Word Cards **Activities** • Temperate Forest and Tropical Rainforest (p. 131) **BJU Press Trove** • Link: Golden Frog and a Bromeliad • PPT pres.: Lesson 052 **Materials** • whole pineapple with leaves • pitcher of water • bowl or container, optional	**Student Edition** • Quick Check (p. 130)

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 53 Grasslands and Deserts			
131–36	53.1 Describe the characteristics of grasslands and savannas. 53.2 Describe the characteristics of deserts. 53.3 Give examples of ways that desert plants and animals survive extreme temperatures and a lack of water. 53.4 Evaluate why God's perfect design in creation no longer functions perfectly. **BWS** Design in Nature (evaluate)	**Activities** • Grassland, Savanna, and Desert (p. 132) **BJU Press Trove** • Link: Jackalberry Tree • Link: African Safari Virtual Field Trip • Link: Patagonian Desert • PPT pres.: Lesson 053 **Materials** • sticky note, per student	**Student Edition** • Quick Check (p. 136) **Activities** • Study Guide (pp. 133–35) **Assessments** • Quiz 5B
Lesson 54 Investigation: Help Prevent Water Loss!			
137	54.1 Predict how waxy surfaces on plants affect water loss. 54.2 Create a model of a waxy leaf. 54.3 Collect and record data. 54.4 Infer how God's design of a waxy coating on the leaves and stems of some plants allows them to survive in a desert biome. 54.5 Draw conclusions about how a model of a waxy leaf compares to a real leaf. **BWS** Modeling in Science (evaluate)	**Activities** • Investigation: Help Prevent Water Loss! (pp. 137–40) **BJU Press Trove** • Link: Fun Facts about Cacti **Materials** • plants or leaves with and without a waxy coating • supplies for water loss Investigation; see Activities p. 137	**Assessments** • Investigation Rubric
Lesson 55 Marine Biomes			
138–41	55.1 Differentiate between saltwater and freshwater biomes. 55.2 Describe characteristics of marine biomes. 55.3 Sequence the zones of the ocean. 55.4 Compare the characteristics of the ocean's zones.	**Teacher Edition** • IA 5.4: Saltwater Fish **Activities** • Aquatic Biomes (p. 141) • Ocean Zones (p. 142) **BJU Press Trove** • Link: Tide Pool Tour • Link: Coral Reefs • PPT pres.: Lesson 055	**Student Edition** • Quick Check (p. 141)
Lesson 56 Freshwater Biomes and Wetlands			
142–46	56.1 Differentiate between standing-water and flowing-water biomes. 56.2 Describe characteristics of freshwater biomes. 56.3 Explain why rivers empty into the ocean. 56.4 Compare different types of wetlands.	**Activities** • Freshwater Biomes (p. 143) • Answers in Genesis: Where Was the Garden of Eden? (pp. 145–46) **BJU Press Trove** • Link: Okefenokee Swamp • PPT pres.: Lesson 056	**Student Edition** • Quick Check (p. 146)

Pages	Objectives	Resources & Materials	Assessments
Lesson 57 Conservation			
147–50	57.1 Identify threats to land and aquatic biomes. 57.2 Research possible solutions to threats against land and aquatic biomes. **BWS** Importance of Humans (explain) 57.3 Formulate a way to protect a land or aquatic biome from a specific threat. **BWS** Importance of Humans (formulate)	**BJU Press Trove** • Link: Lesson 57 Research Links • PPT pres.: Lesson 057 **Materials** • articles about threats to the biome where you live	**Student Edition** • Quick Check (p. 150) **Activities** • Study Guide (pp. 147–50) **Assessments** • Quiz 5C
Lessons 58–59 Exploration: Build a Biome			
151	58–59.1 Research a land or aquatic biome. 58–59.2 Record information about the biome. 58–59.3 Create a model of the biome. 58–59.4 Communicate information about the biome.	**Activities** • Exploration: Build a Biome (pp. 151–53) **BJU Press Trove** • Link: Introduction to Biomes **Materials** • supplies for building a biome; see Teacher Edition p. 151	**Assessments** • Exploration Rubric
Lesson 60 Review			
	60.1 Recall terms and concepts from Chapter 5.	**Activities** • Study Guides from Chapter 5 • Graphic Organizers from Chapter 5 **Assessments** • Quizzes 5A–5C **Materials** • pictures of various biomes • bag or envelope, per picture	
Lesson 61 Test			
	61.1 Apply terms and concepts from Chapter 5.		**Assessments** • Test 5 **BJU Press Trove** • Chapter 5 Test Bank

Chapter 6: Weather

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Pages	Objectives	Resources & Materials	Assessments
Lesson 62 Atmosphere			
152–57	62.1 Describe the components of the atmosphere. 62.2 Explain how the design of the atmosphere works to support life on Earth. **BWS** Design in Nature (explain) 62.3 Sequence the layers of the atmosphere. 62.4 Identify the layer of the atmosphere where weather takes place.	**Teacher Edition** • IA 6.1: Anticipation Guide: Weather • IA 6.2: Atmosphere Word Cards **Activities** • Layers of the Atmosphere (p. 155) **BJU Press Trove*** • Video: Weather • PPT pres.: Lesson 062 **Materials** • apple • paring knife or vegetable peeler	**Student Edition** • Quick Check (p. 157)
Lesson 63 Moving Air			
158–62	63.1 Identify the meteorological tools used to measure air temperature, air pressure, wind speed, and wind direction. 63.2 Explain how air temperature affects wind. 63.3 Differentiate between global winds and local winds.	**BJU Press Trove** • PPT pres.: Lesson 063 **Materials** • supplies for wind demonstration • thermometer • barometer • wind vane • anemometer	**Student Edition** • Quick Check (p. 162) **Activities** • Study Guide (pp. 157–60) **Assessments** • Quiz 6A
Lesson 64 Moisture in the Air			
163–65	64.1 Relate the design of the hydrosphere to the atmosphere. **BWS** Design in Nature (explain) 64.2 Explain how clouds form. 64.3 Identify basic cloud formations. 64.4 Explain a biblical view of the evidence for one Ice Age. **BWS** History of Nature (explain)	**Activities** • Answers in Genesis: Ice Age (pp. 161–62) **BJU Press Trove** • Link: Ice Age • PPT pres.: Lesson 064 **Materials** • supplies for cloud demonstration • clear cup filled with water	**Student Edition** • Quick Check (p. 165)
Lesson 65 Precipitation			
166–68	65.1 Identify different types of precipitation. 65.2 Identify the meteorological tool used to measure rain. 65.3 Differentiate between dew and frost.	**BJU Press Trove** • Link: Precipitation Types • PPT pres.: Lesson 065 **Materials** • banner paper and markers • rain gauge • water	**Student Edition** • Quick Check (p. 168) **Activities** • Study Guide (pp. 163–64) **Assessments** • Quiz 6B

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 66 Exploration: Eye on the Sky! Part 1			
169	66.1 Create a weather station. 66.2 Demonstrate the proper use of a thermometer, rain gauge, anemometer, barometer, and wind vane to gather data about the weather. 66.3 Record data and observations.	**Teacher Edition** • IA 6.3: Weather Instruments: Wind Vane • IA 6.4: Weather Instruments: Rain Gauge • IA 6.5: Weather Instruments: Thermometer Holder • IA 6.6: Weather Instruments: Anemometer • IA 6.7: Weather Instruments: Barometer **Activities** • Exploration: Eye on the Sky! Part 1 (pp. 165–67) **BJU Press Trove** • Link: Weather **Materials** • supplies for weather observation Exploration; see Activities p. 165	**Assessments** • Exploration Rubric
Lesson 67 Air and Weather			
170–74	67.1 Differentiate between air masses that have high pressure and low pressure. 67.2 Identify three types of fronts. 67.3 Differentiate between El Niño and La Niña climate patterns.	**BJU Press Trove** • Link: High and Low Pressure • PPT pres.: Lesson 067 **Materials** • 14 sticky notes • supplies for air mass demonstration • red (or pink) sponge and blue sponge, same size	**Student Edition** • Quick Check (p. 174) **Activities** • Study Guide (pp. 169–70) **Assessments** • Quiz 6C
Lesson 68 Severe Weather			
175–78	68.1 Describe characteristics of severe weather events. 68.2 Differentiate between a weather watch and a weather warning. 68.3 Identify ways to prepare for severe weather. 68.4 Create a severe weather plan. **BWS** Importance of Humans (apply)	**Teacher Edition** • IA 6.8: Severe Weather Plan **BJU Press Trove** • Video: Weather Clues • Link: Tornadoes 101 • Link: Saffir-Simpson Hurricane Wind Scale • Link: Preparing Makes Sense • PPT pres.: Lesson 068 **Materials** • sticky note, per student • supplies for lightning demonstration • supplies for tornado demonstration	**Student Edition** • Quick Check (p. 178)

Pages	Objectives	Resources & Materials	Assessments
Lesson 69 Exploration: Dangerous Extremes			
179	69.1 Research the dangers of one type of severe weather event. 69.2 Record information about the dangers of the severe weather event. 69.3 Formulate ideas for safety precautions to take during the severe weather event. 69.4 Communicate the recommended safety precautions. **BWS** Importance of Humans (explain)	**Activities** • Exploration: Dangerous Extremes (pp. 171–72) **BJU Press Trove** • Link: Indiana Tornado **Materials** • supplies for severe weather Exploration; see Activities p. 171	**Assessments** • Exploration Rubric
Lesson 70 Weather Forecasting			
180–84	70.1 Interpret symbols on a weather map. 70.2 Predict future weather, using weather patterns. 70.3 Evaluate the strengths and limitations of science in relation to weather. **BWS** Purpose of Science (evaluate) 70.4 Describe the job of an atmospheric scientist.	**Teacher Edition** • IA 6.1: Anticipation Guide: Weather • IA 6.1 Key: Anticipation Guide: Weather **BJU Press Trove** • Video: Atmospheric Scientist • Link: Virginia Weather Report • Link: Understanding a Weather Map • PPT pres.: Lesson 070	**Student Edition** • Quick Check (p. 184) **Activities** • Study Guide (pp. 173–75) **Assessments** • Quiz 6D
Lesson 71 Exploration: Eye on the Sky! Part 2			
185	71.1 Compare recorded data and observations with predictions. 71.2 Create weather predictions based on data. 71.3 Present a weather forecast.	**Activities** • Exploration: Eye on the Sky! Part 2 (pp. 177–80) **BJU Press Trove** • Link: Weather 101 for Kids **Materials** • supplies for weather observation Exploration; see Activities p. 177	**Assessments** • Exploration Rubric
Lesson 72 Review			
	72.1 Recall terms and concepts from Chapter 6.	**Teacher Edition** • IA 6.9: Trade Ships **Activities** • Study Guides from Chapter 6 • Graphic Organizer from Chapter 6 **Assessments** • Quizzes 6A–6D	

Pages	Objectives	Resources & Materials	Assessments
Lesson 73 Test			
	73.1 Apply terms and concepts from Chapter 6.		**Assessments** • Test 6 **BJU Press Trove** • Chapter 6 Test Bank

Chapter 7: Minerals and Rocks

IA Instructional Aid **PPT pres.** PowerPoint presentation

Pages	Objectives	Resources & Materials	Assessments
Lesson 74 Earth's Layers and Interactions of Earth's Systems			
186–94	74.1 Identify the geosphere as a major system of the earth. 74.2 Compare the features of the core, mantle, and crust. 74.3 Relate weathering, erosion, and deposition on the earth's surface to sediment and soil. 74.4 Explain how God designed the earth's major systems (geosphere, biosphere, hydrosphere, and atmosphere) to interact. **BWS** Design in Nature (explain)	**BJU Press Trove*** • Video: Minerals and Rocks • Link: Extreme Caving • PPT pres.: Lesson 074 **Materials** • apple and knife • banner paper	**Student Edition** • Quick Check (p. 194) **Activities** • Study Guide (pp. 181–83) **Assessments** • Quiz 7A
Lesson 75 Exploration: Interacting Systems			
195	75.1 Research the interaction of two or more of the earth's major systems. 75.2 Organize the research to identify specific ways the systems interact. 75.3 Create a model to illustrate how the major systems interact. 75.4 Communicate, using the model, ways God designed the earth's major systems to interact. **BWS** Modeling in Science (apply)	**Activities** • Exploration: Interacting Systems (pp. 185–89) **BJU Press Trove** • Link: Interacting Systems Links **Materials** • freshly watered potted house plant • supplies for Earth systems Exploration; see Activities p. 185	**Assessments** • Exploration Rubric
Lesson 76 Physical Properties of Minerals			
196–203	76.1 Evaluate different views of the origin of minerals and rocks. **BWS** History of Nature (evaluate) 76.2 Differentiate the properties of minerals used for identification.	**Activities** • Properties of Minerals (p. 191) **BJU Press Trove** • Link: What Is a Mineral? • PPT pres.: Lesson 076 **Materials** • mineral crystal, or picture of mineral crystal	**Student Edition** • Quick Check (p. 203)
Lesson 77 Investigation: Salty Crystals, Part 1			
204	77.1 Predict the effect temperature has on crystal formation. 77.2 Experiment with a saturated solution of salt water to observe crystal formation. 77.3 Identify and control temperature as the independent variable. 77.4 Observe the formation of salt crystals.	**Activities** • Investigation: Salty Crystals, Part 1 (pp. 193–95) **BJU Press Trove** • Link: Salt Crystals **Materials** • supplies for salt crystals Investigation; see Activities p. 193	**Assessments** • Investigation Rubric

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 78 Uses of Minerals and Finding Minerals			
205–11	78.1 Differentiate the properties and uses of precious, semiprecious, and synthetic gemstones. 78.2 Identify properties and uses of minerals that are metals. 78.3 Identify uses of common minerals. **BWS** Importance of Humans (explain) 78.4 Explain where minerals are found. 78.5 Describe the job of a lapidary.	**BJU Press Trove** • Video: Rhinestones • Video: Lapidary • Link: Gold Leaf Gilding • PPT pres.: Lesson 078 **Materials** • variety of items made from minerals or that use minerals	**Student Edition** • Quick Check (p. 211) **Activities** • Study Guide (pp. 197–99) **Assessments** • Quiz 7B
Lesson 79 Exploration: Munching Minerals			
212	79.1 Collect, record, and interpret data by researching a mineral with nutritional value. 79.2 Create a presentation identifying the nutritional benefits of the mineral. **BWS** Design in Nature (formulate) 79.3 Communicate research findings.	**Activities** • Exploration: Munching Minerals (pp. 201–2) **BJU Press Trove** • Link: Munching Minerals Links **Materials** • nutrition labels from various food and beverage items, per pair of students • supplies for edible minerals Exploration; see Activities p. 201	**Assessments** • Exploration Rubric
Lesson 80 Rocks			
213–17	80.1 Relate rocks to Creation and the Flood, using the Bible's teaching. **BWS** History of Nature (formulate) 80.2 Differentiate igneous, sedimentary, and metamorphic rock. 80.3 Distinguish between intrusive and extrusive igneous rock. 80.4 Compare foliated and non-foliated metamorphic rock.	**BJU Press Trove** • Link: Cliffs at Dover Landslide 1 • Link: Cliffs at Dover Landslide 2 • PPT pres.: Lesson 080 **Materials** • crispy rice treat in a resealable snack-sized plastic bag, per student • sandstone sample • magnifying glass • banner paper and markers	**Student Edition** • Quick Check (p. 217) **Activities** • Study Guide (pp. 203–4) **Assessments** • Quiz 7C
Lesson 81 Exploration: Rock Hounding			
218	81.1 Collect and record data about rock samples. 81.2 Observe the appearance of each rock sample. 81.3 Classify the rocks using their physical properties. 81.4 Compare the physical properties used to classify the rocks.	**Activities** • Exploration: Rock Hounding (pp. 205–8) **BJU Press Trove** • Link: Rock Hounding **Materials** • assortment of colored pencils, colored pens, and colored markers • supplies for rock collection Exploration; see Activities p. 205	**Assessments** • Exploration Rubric

Pages	Objectives	Resources & Materials	Assessments
Lesson 82 Investigation: Salty Crystals, Part 2			
219	82.1 Observe the formation of salt crystals. 82.2 Interpret data to understand the role temperature plays in crystal formation.	**Activities** • Investigation: Salty Crystals, Part 1 (pp. 193–95) • Investigation: Salty Crystals, Part 2 (pp. 209–10) **Materials** • supplies for lesson introduction • supplies for salt crystals Investigation; see Activities p. 209	**Assessments** • Investigation Rubric
Lesson 83 Review			
	83.1 Recall terms and concepts from Chapter 7.	**Activities** • Study Guides from Chapter 7 • Graphic Organizer from Chapter 7 **Assessments** • Quizzes 7A–7C **Materials** • plastic jewels or foil-wrapped candy pieces	
Lesson 84 Test			
	84.1 Apply terms and concepts from Chapter 7.		**Assessments** • Test 7 **BJU Press Trove** • Chapter 7 Test Bank

Chapter 8: Fossils and Dinosaurs

IA Instructional Aid **PPT pres.** PowerPoint presentation **G/E** *Games/Enrichment*

Pages	Objectives	Resources & Materials	Assessments
Lesson 85 Fossil Formation			
220–27	85.1 Explain what a fossil is and what conditions are necessary for a fossil to form. 85.2 Compare worldviews to explain fossil formation. **BWS** History of Nature (evaluate) 85.3 Defend the biblical worldview regarding the location of fossils within rock layers. **BWS** History of Nature (formulate)	**Activities** • Fossils (pp. 211–12) **BJU Press Trove*** • Video: Fossils and Dinosaurs • Link: Fossils and the Flood • Link: Order of Fossils • PPT pres.: Lesson 085 **Materials** • fossil samples, or pictures of fossils	**Student Edition** • Quick Check (p. 227)
Lesson 86 Types of Fossils			
228–31	86.1 Differentiate the types of fossils preserved in sediment. 86.2 Identify materials, other than sediment, in which fossils have formed.	**BJU Press Trove** • Video: The Jarkov Mammoth • PPT pres.: Lesson 086	**Student Edition** • Quick Check (p. 231) **Activities** • Study Guide (pp. 213–15) **Assessments** • Quiz 8A
Lessons 87–88 Exploration: Molds and Casts			
232	87–88.1 Make models of cast and mold fossils. 87–88.2 Distinguish fossils as cast or mold. 87–88.3 Draw conclusions about the fossils formed.	**Activities** • Exploration: Molds and Casts (pp. 217–19) **BJU Press Trove** • G/E: Fossil Type Review **Materials** • supplies for fossil Exploration; see Activities p. 217	**Assessments** • Exploration Rubric
Lesson 89 Learning from Fossils and Fossil Fuels			
233–37	89.1 Explain how paleontologists excavate, prepare, and reconstruct fossils. 89.2 Identify limitations when reconstructing fossils. 89.3 Explain the importance of fossil fuels. **BWS** Importance of Humans (explain) 89.4 Describe the job of a petroleum geologist.	**BJU Press Trove** • Video: Petroleum Geologist • PPT pres.: Lesson 089 **Materials** • 14 sticky notes	**Student Edition** • Quick Check (p. 237) **Activities** • Study Guide (pp. 221–22) **Assessments** • Quiz 8B

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 90 Exploration: Fossil Dig			
238	90.1 Model the procedures a paleontologist uses while excavating. 90.2 Collect, record, and interpret data to complete a site map. 90.3 Classify the excavated fossils as cast or mold. 90.4 Communicate excavation results.	**Teacher Edition** • IA 8.1: Fossil Dig Preparation **Activities** • Exploration: Fossil Dig (pp. 223–26) **BJU Press Trove** • Link: Fossil Excavation **Materials** • supplies for excavation Exploration; see Activities p. 223	**Assessments** • Exploration Rubric
Lesson 91 What Dinosaur Fossils Teach Us			
239–43	91.1 Compare the original meaning of the term *dinosaur* to the scientific use of the term. 91.2 Identify what can be inferred about dinosaurs, flying reptiles, and marine reptiles from their fossils. 91.3 Explain why fossils harmonize with the Bible's teaching. **BWS** History of Nature (explain)	**Activities** • Dinosaurs (p. 227) **BJU Press Trove** • PPT pres.: Lesson 091 **Materials** • banner paper and markers	**Student Edition** • Quick Check (p. 243)
Lessons 92–93 What the Bible Teaches Us about Dinosaurs			
244–48	92–93.1 Defend the view that humans and dinosaurs lived at the same time, using the Bible's teaching. **BWS** History of Nature (formulate) 92–93.2 Relate dragons and dinosaurs, using the Bible's teaching and accounts from history. **BWS** History of Nature (explain) 92–93.3 Evaluate possible reasons for dinosaur extinction. **BWS** History of Nature (evaluate) 92–93.4 Describe soft tissue in fossils. 92–93.5 Evaluate soft-tissue evidence as a means of dating fossils. **BWS** Purpose of Science (evaluate)	**Activities** • Answers in Genesis: Soft Bones (pp. 229–30) **BJU Press Trove** • Link: Dinosaurs and Humans • Link: Ice Age • Link: Dinosaur Soft Tissue • PPT pres.: Lessons 092–93 **Materials** • white construction paper, per student	**Student Edition** • Quick Check (p. 248) **Activities** • Study Guide (pp. 231–33) **Assessments** • Quiz 8C

Pages	Objectives	Resources & Materials	Assessments
Lessons 94–95 Exploration: Which Viewpoint?			
249	94–95.1 Collect and record data from resources about fossils or dinosaurs. 94–95.2 Infer the author's worldview by referencing article phrases or statements. **BWS** History of Nature (evaluate) 94–95.3 Communicate conclusions about the worldview of the resources.	**Activities** • Exploration: Which Viewpoint? (pp. 235–37) **BJU Press Trove** • Link: Which Viewpoint Student Resources • Link: Which Viewpoint Teacher Resources **Materials** • supplies for viewpoint Exploration; see Activities p. 235	**Assessments** • Exploration Rubric
Lesson 96 Review			
	96.1 Recall terms and concepts from Chapter 8.	**Activities** • Study Guides from Chapter 8 • Graphic Organizers from Chapter 8 **Assessments** • Quizzes 8A–8C **Materials** • picture of a dinosaur skeleton, per team	
Lesson 97 Test			
	97.1 Apply terms and concepts from Chapter 8.		**Assessments** • Test 8 **BJU Press Trove** • Chapter 8 Test Bank

Chapter 9: The Solar System

IA Instructional Aid **PPT pres.** PowerPoint presentation

Pages	Objectives	Resources & Materials	Assessments
Lesson 98 The Sun			
250–58	98.1 Describe the solar system. 98.2 Evaluate different views of the origin of the solar system. **BWS** History of Nature (evaluate) 98.3 Identify the time and distance it takes for sunlight to reach the earth. 98.4 Identify the parts of the sun. 98.5 Describe types of solar storms and their effects on the earth's magnetic field.	**Teacher Edition** • IA 1.8: STEM: The Engineering Design Process **Activities** • The Sun (p. 239) **BJU Press Trove*** • Video: The Solar System • Link: Intro to Engineering • PPT pres.: Lesson 098 **Materials** • marble • empty, individual-sized, plastic soft drink bottle	**Student Edition** • Quick Check (p. 258)
Lessons 99–100 STEM: Heat It Up!			
259	99–100.1 Design a solar oven, using the engineering design process. 99–100.2 Create a solar oven. 99–100.3 Test and compare models to improve the original design. 99–100.4 Communicate how the design solves the problem. **BWS** Purpose of Science (explain)	**Teacher Edition** • IA 1.8: STEM: The Engineering Design Process **Activities** • STEM: Heat It Up! (pp. 241–43) **BJU Press Trove** • Link: How to Build a Solar Oven **Materials** • supplies for building a solar oven; see Teacher Edition p. 259	**Assessments** • STEM Rubric
Lesson 101 Patterns in the Solar System			
260–66	101.1 Differentiate between revolution and rotation. 101.2 Explain how shadows are evidence of the earth's movement. 101.3 Explain why the area near the Equator always experiences warm temperatures. 101.4 Explain the benefits of God's design for the patterns of time and seasons on Earth. **BWS** Design in Nature (explain)	**Teacher Edition** • IA 9.1: Chapter 9 Vocabulary Scoot • IA 9.1 Key: Chapter 9 Vocabulary Scoot **BJU Press Trove** • PPT pres.: Lesson 101 **Materials** • 14 index cards • marker • meterstick • masking tape • flashlight • globe	**Student Edition** • Quick Check (p. 266) **Activities** • Study Guide (pp. 245–47) **Assessments** • Quiz 9A

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 102 The Inner Planets			
267–71	102.1 Identify the inner planets and their locations in relation to the sun. 102.2 Describe characteristics of the inner planets. 102.3 Compare the sizes of the other inner planets with the size of Earth. 102.4 Evaluate how God's unique design of the earth supports life. **BWS** Design in Nature (evaluate)	**Activities** • The Inner Planets (p. 249) **BJU Press Trove** • Video: Inner Planets • PPT pres.: Lesson 102	**Student Edition** • Quick Check (p. 271)
Lesson 103 The Outer Planets			
272–76	103.1 Describe the outer planets and dwarf planets. 103.2 Compare characteristics of the outer planets and dwarf planets. 103.3 Compare the characteristics of the outer planets with those of the inner planets.	**Activities** • The Outer Planets (p. 250) **BJU Press Trove** • Video: Outer Planets • PPT pres.: Lesson 103 **Materials** • sticky note, per pair of students • supplies for planet demonstration	**Student Edition** • Quick Check (p. 276) **Activities** • Study Guide (pp. 251–53) **Assessments** • Quiz 9B
Lessons 104–6 Exploration: WebQuest to Space			
277	104–6.1 Research data about a planet, using a WebQuest. 104–6.2 Record data about the location, temperature, and other characteristics of the planet. 104–6.3 Create a display of the planet, using the recorded information. 104–6.4 Communicate information about the planet and its characteristics.	**Activities** • Exploration: WebQuest to Space (pp. 255–56) **BJU Press Trove** • Link: WebQuest to Space Links **Materials** • bulletin board paper • picture of a spacecraft • circle-shaped paper, per student • markers • supplies for creating a planet model; see Activities p. 255	**Assessments** • Exploration Rubric
Lesson 107 Getting to Space			
278–81	107.1 Identify resources used for space exploration. 107.2 Explain how living in the International Space Station is different from living on Earth. 107.3 Describe the job of a robotics engineer in the space program.	**BJU Press Trove** • Video: Robotics Engineer • Link: How Astronauts Live in Space • Link: Space Station Tracking Map • PPT pres.: Lesson 107 **Materials** • materials for ice cream activity • telescope	**Student Edition** • Quick Check (p. 281)

Pages	Objectives	Resources & Materials	Assessments
Lesson 108 Space Exploration			
282–85	108.1 Describe key events in the history of space exploration. 108.2 Explain the mission of the United States Space Force. 108.3 Describe benefits that resulted from the space program. 108.4 Evaluate reasons for space exploration. **BWS** Purpose of Science (evaluate)	**BJU Press Trove** • Link: Club for the Future • Link: Postcards to Space • PPT pres.: Lesson 108 **Materials** • space postcard template, per student • postcard stamps • large envelope	**Student Edition** • Quick Check (p. 285) **Activities** • Study Guide (pp. 257–59) **Assessments** • Quiz 9C
Lesson 109 Review			
	109.1 Recall terms and concepts from Chapter 9.	**Activities** • Study Guides from Chapter 9 • Graphic Organizers from Chapter 9 **Assessments** • Quizzes 9A–9C **Materials** • 11 index cards • 11 envelopes	
Lesson 110 Test			
	110.1 Apply terms and concepts from Chapter 9.		**Assessments** • Test 9 **BJU Press Trove** • Chapter 9 Test Bank

Chapter 10: The Moon

IA Instructional Aid **PPT pres.** PowerPoint presentation **G/E** *Games/Enrichment*

Pages	Objectives	Resources & Materials	Assessments
Lesson 111 The Moon's Origin			
286–92	111.1 Evaluate theories of the moon's origin. **BWS** History of Nature (evaluate) 111.2 Describe the two kinds of science. 111.3 Explain a biblical view of the origin of the moon.	**Teacher Edition** • IA 10.1: Word Pairs • IA 10.1 Key: Word Pairs **Activities** • The Moon's Origin (p. 261) **BJU Press Trove*** • Video: The Moon • Video: The Moon's Origin • Link: Launch into Space • PPT pres.: Lesson 111 **Materials** • small paper bag with a stapler inside	**Student Edition** • Quick Check (p. 292)
Lesson 112 The Moon's Exploration **Exploration: Moonwatchers**			
293–98	112.1 Explain how Project Apollo increased understanding of the moon. 112.2 Describe the purpose of lunar projects. 112.3 Describe the job of an aerospace engineer. 112.4 Describe the sky conditions and the observations of the moon. 112.5 Record data.	**Activities** • Exploration: Moonwatchers (pp. 265–66) **BJU Press Trove** • Video: Aerospace Engineer • Link: Liftoff • Link: Raising the American Flag • PPT pres.: Lesson 112	**Student Edition** • Quick Check (p. 297) **Activities** • Study Guide (pp. 263–64) **Assessments** • Quiz 10A
Lessons 113–14 STEM: Moon Landing			
299	113–14.1 Design a shock-absorbing system to protect two astronauts landing on the moon, using the engineering design process. 113–14.2 Create a shock-absorbing system. 113–14.3 Test and compare models to improve the original design. 113–14.4 Communicate how the design solves the problem. **BWS** Importance of Humans (explain)	**Teacher Edition** • IA 10.2: Lunar Lander **Activities** • STEM: Moon Landing (pp. 267–69) **BJU Press Trove** • Link: Landing on the Moon • Link: Falling Objects **Materials** • supplies for designing a shock-absorbing system; see Teacher Edition p. 299	**Assessments** • STEM Rubric

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 115 The Moon's Properties			
300–303	115.1 Describe the moon's properties. 115.2 Compare the moon and the earth. 115.3 Explain the effects of gravity on mass and weight. 115.4 Explain the source of the moon's light.	**Teacher Edition** • IA 10.3: The Moon's Size **Activities** • The Moon (p. 271) **BJU Press Trove** • PPT pres.: Lesson 115 **Materials** • shoe	**Student Edition** • Quick Check (p. 303)
Lesson 116 The Moon's Surface			
304–7	116.1 Identify the landforms on the moon's surface. 116.2 Compare the landforms on the moon and the earth.	**Teacher Edition** • IA 10.1: Word Pairs • IA 10.1 Key: Word Pairs **BJU Press Trove** • Link: Moon Landforms • Link: Keyboard Shortcuts • PPT pres.: Lesson 116 **Materials** • pieces of velvet and corduroy	**Student Edition** • Quick Check (p. 307) **Activities** • Study Guide (pp. 273–75) **Assessments** • Quiz 10B
Lessons 117–18 Exploration: Moon Model			
308	117–18.1 Research lunar surface features to make a model. 117–18.2 Measure ingredients to make modeling clay. 117–18.3 Make a model of the moon's surface. 117–18.4 Label features on the moon's surface. 117–18.5 Apply scientific modeling to describing God's creation. **BWS** Modeling in Science (explain)	**Activities** • Exploration: Moon Model (p. 277) **BJU Press Trove** • G/E: Moon Landforms Review **Materials** • supplies for moon model Exploration; see Activities p. 277	**Assessments** • Exploration Rubric
Lesson 119 The Moon's Motions and Phases			
309–12	119.1 Explain the revolution and the rotation of the moon. 119.2 Describe the phases of the moon. 119.3 Identify the phases of the moon. 119.4 Relate the observed phases of the moon to the time period of observation.	**Teacher Edition** • IA 10.1: Word Pairs • IA 10.1 Key: Word Pairs **Activities** • Exploration: Moonwatchers (pp. 265–66) • Phases of the Moon (p. 279) **BJU Press Trove** • PPT pres.: Lesson 119 **Materials** • 12-month calendar • 8 index cards • supplies for moon phases model	**Student Edition** • Quick Check (p. 312) **Assessments** • Exploration Rubric

Pages	Objectives	Resources & Materials	Assessments
Lesson 120 Eclipses and Tides			
313–17	120.1 Explain the relationships of the sun, moon, and earth. 120.2 Distinguish between a lunar eclipse and a solar eclipse. 120.3 Label a solar eclipse and a lunar eclipse on diagrams. 120.4 Explain what causes a tide. 120.5 Explain the benefits God gave Earth through His creation of the moon. **BWS** Design in Nature (explain)	**Teacher Edition** • IA 10.1: Word Pairs • IA 10.1 Key: Word Pairs • IA 10.4: Daily Tides A • IA 10.5: Daily Tides B **Activities** • Eclipses (p. 281) • Tides (p. 282) **BJU Press Trove** • G/E: Moon Motion and Phases Review • PPT pres.: Lesson 120 **Materials** • brass fastener • penny, per student	**Student Edition** • Quick Check (p. 317) **Activities** • Study Guide (pp. 283–86) **Assessments** • Quiz 10C
Lesson 121 Review			
	121.1 Recall terms and concepts from Chapter 10.	**Activities** • Study Guides from Chapter 10 • Graphic Organizers from Chapter 10 **Assessments** • Quizzes 10A–10C	
Lesson 122 Test			
	122.1 Apply terms and concepts from Chapter 10.		**Assessments** • Test 10 **BJU Press Trove** • Chapter 10 Test Bank

Chapter 11: The Stars

IA Instructional Aid **PPT pres.** PowerPoint presentation **G/E** *Games/Enrichment*

Pages	Objectives	Resources & Materials	Assessments
Lesson 123 Characteristics of Stars			
318–23	123.1 Relate how God's glory is reflected in the vastness of the stars. **BWS** Purpose of Science (explain) 123.2 Explain how stars produce their own light. 123.3 Interpret diagrams about stars. 123.4 Distinguish apparent magnitude and absolute magnitude of stars. 123.5 Identify classifications of stars according to color. 123.6 Explain how distance is measured in space.	**BJU Press Trove*** • Video: The Stars • G/E: Lesson 123 Vocabulary • PPT pres.: Lesson 123 **Materials** • deck of Uno game cards • 4 centimeter rulers and calculator	**Student Edition** • Quick Check (p. 323) **Activities** • Study Guide (pp. 287–90) **Assessments** • Quiz 11A
Lesson 124 Inquiry: Brightness of Stars			
324	124.1 Write a hypothesis to test the apparent magnitude of stars. 124.2 Experiment to test the hypothesis. 124.3 Simulate the apparent magnitude of stars of different sizes, of similar sizes, and of different distances. 124.4 Draw conclusions about the causes of apparent magnitude.	**Activities** • Inquiry: Brightness of Stars (pp. 291–92) **Materials** • supplies for the star brightness Inquiry; see Activities p. 291 • 1 round balloon of each color: blue, white, yellow, red • 2 cards, labeled *coldest* and *hottest*	**Assessments** • Inquiry Rubric
Lesson 125 Kinds of Stars			
325–27	125.1 Differentiate between a pulsating variable star and an eclipsing variable star. 125.2 Describe the causes of novas and supernovas. 125.3 Describe how astronomers think black holes are formed.	**Activities** • Star Web, p. 293 **BJU Press Trove** • Link: Blue Stars • Link: Crab • PPT pres.: Lesson 125 **Materials** • supplies for variable star demonstration	**Student Edition** • Quick Check (p. 327)
Lesson 126 Observing the Heavens			
328–32	126.1 Identify various constellations. 126.2 Formulate a reason why some people study the stars. **BWS** Design in Nature (formulate) 126.3 Differentiate between a reflecting telescope and a refracting telescope. 126.4 Identify instruments used to study the stars.	**BJU Press Trove** • Link: Taurus • G/E: Lesson 126 Vocabulary • PPT pres.: Lesson 126 **Materials** • unlined index card, per student	**Student Edition** • Quick Check (p. 332) **Activities** • Study Guide (pp. 295–97) **Assessments** • Quiz 11B

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 127 Exploration: Pinhole Constellations			
333	127.1 Make a model of a constellation. 127.2 Identify several model constellations. 127.3 Record names of model constellations observed.	**Activities** • Exploration: Pinhole Constellations (pp. 299–302) **Materials** • umbrella • adhesive dots or chalk • supplies for the constellation Exploration; see Activities p. 299	**Assessments** • Exploration Rubric
Lesson 128 Star Groups			
334–38	128.1 Compare how many stars are in binary groups and multiple star groups. 128.2 Differentiate between an open star cluster and a globular cluster. 128.3 Describe the Milky Way and its neighborhood. 128.4 Describe the job of an astronautical engineer.	**Teacher Edition** • IA 11.1: Star Group • IA 11.1 Key: Star Group **BJU Press Trove** • Video: Legendary Stars • Video: Astronautical Engineer • Link: Stars • PPT pres.: Lesson 128	**Student Edition** • Quick Check (p. 338)
Lesson 129 Star Maps **Exploration: Stargazing**			
339–43	129.1 Compare the positions of constellations at the same time of night during January and June. 129.2 Read a star map. 129.3 Interpret and use a star map. 129.4 Identify objects in the night sky. 129.5 Record observations.	**Teacher Edition** • IA 11.2: Southern Hemisphere **Activities** • Exploration: Stargazing (pp. 303–5) **BJU Press Trove** • Video: Star Maps • Link: Map Tool • G/E: Lesson 128 Concepts Review • PPT pres.: Lesson 129 **Materials** • umbrella with constellations from Lesson 127 • yellow and orange markers, per student • supplies for stargazing Exploration; see Activities p. 303	**Student Edition** • Quick Check (p. 342) **Assessments** • Exploration Rubric

Pages	Objectives	Resources & Materials	Assessments
Lesson 130 Other Space Objects			
344–46	130.1 Describe theories on the formation of asteroids. 130.2 Differentiate between a meteor and a meteorite. 130.3 Describe the three parts of a comet.	**BJU Press Trove** • Link: Shooting Stars • Link: Asteroid Belt • PPT pres.: Lesson 130 **Materials** • 2 index cards, per student • world map or United States map	**Student Edition** • Quick Check (p. 346) **Activities** • Study Guide (pp. 307–10) **Assessments** • Quiz 11C
Lessons 131–33 STEM: Asteroid Mining			
347	131–33.1 Identify the first step of the mining process. 131–33.2 Design a machine to collect a core sample from the surface of a potato asteroid, using the engineering design process. 131–33.3 Create a machine to collect core samples from a potato asteroid. 131–33.4 Test and compare models to improve the original design. 131–33.5 Communicate how the design solves the problem. **BWS** Modeling in Science (evaluate)	**Activities** • STEM: Asteroid Mining (pp. 311–13) **BJU Press Trove** • Link: Iron Mining Process • Link: Moon Robot • Link: Asteroid Surface **Materials** • supplies for designing a machine for asteroid mining; see Teacher Edition p. 347	**Assessments** • STEM Rubric
Lesson 134 Review			
	134.1 Recall terms and concepts from Chapter 11.	**Activities** • Graphic Organizer from Chapter 11 • Study Guides from Chapter 11 **Assessments** • Quizzes 11A–11C **Materials** • index card, per team	
Lesson 135 Test			
	135.1 Apply terms and concepts from Chapter 11.		**Assessments** • Test 11 **BJU Press Trove** • Chapter 11 Test Bank

Chapter 12: The Immune System

IA Instructional Aid **PPT pres.** PowerPoint presentation

Pages	Objectives	Resources & Materials	Assessments
Lesson 136 Infectious Diseases			
348–57	136.1 Explain the origin of disease. **BWS** History of Nature (explain) 136.2 Identify what a disease is. 136.3 Differentiate between infectious and noninfectious diseases. 136.4 Compare common pathogens.	**Activities** • Diseases (p. 315) **BJU Press Trove*** • Video: The Immune System • Link: Louis Pasteur • Link: Microbes • PPT pres.: Lesson 136 **Materials** • 20 sticky notes	**Student Edition** • Quick Check (p. 357)
Lessons 137–38 Infectious and Noninfectious Diseases			
358–66	137–38.1 Identify ways that pathogens are spread. 137–38.2 Differentiate between an epidemic and a pandemic. 137–38.3 Identify characteristics of noninfectious diseases. 137–38.4 Describe the job of an epidemiologist. **BWS** Purpose of Science (explain)	**BJU Press Trove** • Video: Epidemiologist • Link: Mosquito Net • Link: How Germs Spread • PPT pres.: Lessons 137–38 **Materials** • spray bottle with water • meterstick	**Student Edition** • Quick Check (p. 366) **Activities** • Study Guide (pp. 317–19) **Assessments** • Quiz 12A
Lessons 139–40 Exploration: Of Epidemic Proportions			
367	139–40.1 Model how pathogens spread disease during an epidemic. 139–40.2 Observe changes to a chemical solution. 139–40.3 Collect and record data related to the model epidemic. 139–40.4 Infer the source of contamination.	**Activities** • Exploration: Of Epidemic Proportions (pp. 321–23) **Materials** • supplies for epidemic Exploration; see Teacher Edition p. 367 and Activities p. 321	**Assessments** • Exploration Rubric
Lesson 141 Immune System Defenses and God's Design			
368–74	141.1 Identify defensive barriers of the human body. 141.2 Compare the body's nonspecific and specific defenses. 141.3 Identify the functions of white blood cells during an immune response. 141.4 Formulate a statement explaining how God's design of the immune system shows His love. **BWS** Design in Nature (formulate)	**Activities** • The Immune System (p. 325) **BJU Press Trove** • Link: Scabs • PPT pres.: Lesson 141 **Materials** • replica versions or images of knights, armor, and weapons from the Middle Ages	**Student Edition** • Quick Check (p. 374)

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 142 Immunity and Responses			
375–80	142.1 Identify ways the body can obtain immunity. 142.2 Compare antibodies and antibiotics. 142.3 Identify responses of the immune system. 142.4 Propose a way to demonstrate love by accommodating someone with an allergy or autoimmune deficiency. **BWS** Importance of Humans (apply)	**BJU Press Trove** • Link: Antibodies • Link: Allergies • PPT pres.: Lesson 142 **Materials** • banner paper and colored markers	**Student Edition** • Quick Check (p. 380) **Activities** • Study Guide (pp. 327–30) **Assessments** • Quiz 12B
Lessons 143–45 Exploration: Breaking News! WebQuest			
381	143–45.1 Research a medical discovery related to the immune system using a WebQuest. 143–45.2 Organize the research about the medical discovery. 143–45.3 Write a news report about how the discovery proved to be beneficial. **BWS** Purpose of Science (apply) 143–45.4 Create a Breaking News broadcast.	**Activities** • Exploration: Breaking News! WebQuest (pp. 331–33) **BJU Press Trove** • Link: Breaking News! WebQuest Links **Materials** • supplies for breaking news Exploration; see Activities p. 331	**Assessments** • Exploration Rubric
Lesson 146 Review			
	146.1 Recall terms and concepts from Chapter 12.	**Activities** • Study Guides from Chapter 12 • Graphic Organizer from Chapter 12 **Assessments** • Quizzes 12A–12B **Materials** • masking tape • paper, labeled “Immune System” • paper, labeled “Pathogens”	
Lesson 147 Test			
	147.1 Apply terms and concepts from Chapter 12.		**Assessments** • Test 12 **BJU Press Trove** • Chapter 12 Test Bank

Chapter 13: The Respiratory System

IA Instructional Aid **PPT pres.** PowerPoint presentation

Pages	Objectives	Resources & Materials	Assessments
Lesson 148 Breathing			
382–86	148.1 Explain the purpose of the respiratory system. 148.2 Describe the process of breathing. 148.3 Differentiate between voluntary and involuntary breathing.	**Activities** • The Respiratory System (p. 335) **BJU Press Trove*** • Video: The Respiratory System • Video: Human Respiratory Development • Link: Amazing Grace Bagpipe • PPT pres.: Lesson 148 **Materials** • stopwatch • 2 index cards, per student	**Student Edition** • Quick Check (p. 386)
Lesson 149 The Diaphragm			
387–88	149.1 Identify the organs and muscles that are used in breathing. 149.2 Compare the movements of the body and of air when inhaling and exhaling.	**BJU Press Trove** • Link: Hot Water Bottle Burst • Link: Free Diving • PPT pres.: Lesson 149	**Student Edition** • Quick Check (p. 388) **Activities** • Study Guide (pp. 337–38) **Assessments** • Quiz 13A
Lesson 150 Exploration: Breathe In, Breathe Out			
389	150.1 Create a model of the human respiratory system. 150.2 Demonstrate the movement of the diaphragm during breathing, using the model. 150.3 Compare the structures and functions of the model with the structures and functions of the respiratory system. 150.4 Relate the lessons learned from the model to obeying God's command to praise Him using breath. **BWS** Modeling in Science (apply)	**Activities** • Exploration: Breathe In, Breathe Out (pp. 339–41) **BJU Press Trove** • Link: The Diaphragm **Materials** • sharp scissors or box cutter • book, per student • supplies for respiratory system model; see Activities p. 339	**Assessments** • Exploration Rubric
Lesson 151 The Nose and Sinuses			
390–92	151.1 Identify the structures and functions of the nose. 151.2 Explain how mucus and cilia help keep the respiratory system clean. 151.3 Identify the locations and functions of the sinus cavities.	**Activities** • Upper Respiratory System (p. 343) **BJU Press Trove** • Link: Healthy Mucus • PPT pres.: Lesson 151 **Materials** • 12 sticky notes	**Student Edition** • Quick Check (p. 392)

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 152 The Pharynx and Larynx			
393–95	152.1 Identify the structures and functions of the throat and the larynx. 152.2 Explain how the vocal cords produce sound. 152.3 Sequence the path of air through the upper respiratory system.	**Teacher Edition** • IA 13.1: Upper Respiratory System Cards 1 • IA 13.2: Upper Respiratory System Cards 2 **Activities** • Upper Respiratory System (p. 344) **BJU Press Trove** • Link: Epiglottis • Link: Vocal Cords • PPT pres.: Lesson 152	**Student Edition** • Quick Check (p. 395)
Lesson 153 The Trachea and Lungs			
396–99	153.1 Identify the structures and functions of the lower respiratory system. 153.2 Differentiate between the structures of the upper and lower respiratory systems. 153.3 Explain God's design for oxygen to travel through the lower respiratory system to the body.	**Teacher Edition** • IA 13.3: Stethoscope • IA 13.4: Lower Respiratory System Cards **BJU Press Trove** • PPT pres.: Lesson 153 **Materials** • stethoscope, or materials to make stethoscopes • vacuum cleaner hose or flexible aluminum dryer vent duct • empty 1 L (34 oz) water bottle • 50 counters each of two different colors; 2 small containers • Upper Respiratory System Cards from Lesson 152 • sticky tack	**Student Edition** • Quick Check (p. 399) **Activities** • Study Guide (pp. 345–47) **Assessments** • Quiz 13B
Lesson 154 Investigation: How Much Air Is in Your Lungs?			
400	154.1 Measure the amount of air exhaled in one breath, using a balloon. 154.2 Infer lung capacity based on the average diameter of the balloon. 154.3 Compare inferred lung capacity between students. 154.4 Compare lung capacity in several positions. **BWS** Purpose of Science (evaluate)	**Activities** • Investigation: How Much Air Is in Your Lungs? (pp. 349–52) • Answers in Genesis: The Breath of Life (pp. 353–54) **BJU Press Trove** • Link: Breathing **Materials** • spirometer • supplies for lung capacity Investigation; see Activities p. 349	**Assessments** • Investigation Rubric

Pages	Objectives	Resources & Materials	Assessments
Lesson 155 Respiratory Sounds and Diseases			
401–5	155.1 Explain the causes of respiratory sounds. 155.2 Identify some diseases that make it difficult to breathe. 155.3 Describe the job of a pulmonologist.	**Activities** • Tuberculosis around the World (pp. 355–56) **BJU Press Trove** • Video: Pulmonologist • Link: Coughing • Link: Snoring Lion • PPT pres.: Lesson 155 **Materials** • box of tissues	**Student Edition** • Quick Check (p. 405)
Lesson 156 Other Respiratory Problems			
406–9	156.1 Describe the effects of allergies on the respiratory system. 156.2 Identify potential causes of asthma. 156.3 Describe what happens to the body during an asthma attack. 156.4 Infer how smoking and vaping can cause respiratory problems. 156.5 Formulate a plan for caring for the respiratory system. **BWS** Purpose of Science (formulate)	**BJU Press Trove** • Link: Using an Inhaler • PPT pres.: Lesson 156 **Materials** • banner paper and colored markers • inhaler	**Student Edition** • Quick Check (p. 409) **Activities** • Study Guide (pp. 357–59) **Assessments** • Quiz 13C
Lesson 157 Review			
	157.1 Recall terms and concepts from Chapter 13.	**Activities** • Study Guides from Chapter 13 • Graphic Organizers from Chapter 13 **Assessments** • Quizzes 13A–13C **Materials** • game token, per team	
Lesson 158 Test			
	158.1 Apply terms and concepts from Chapter 13.		**Assessments** • Test 13 **BJU Press Trove** • Chapter 13 Test Bank

Chapter 14: The Circulatory System

IA Instructional Aid **PPT pres.** PowerPoint presentation

Pages	Objectives	Resources & Materials	Assessments
Lesson 159 The Heart			
410–16	159.1 Identify the parts of the circulatory system. 159.2 Sequence the path of blood through the heart. 159.3 Demonstrate how to find and count a pulse. 159.4 Explain the function of the heart's pacemaker.	**Teacher Edition** • IA 14.1: Anticipation Guide: The Circulatory System **Activities** • The Circulatory System (p. 361) **BJU Press Trove*** • Video: The Circulatory System • PPT pres.: Lesson 159 **Materials** • United States road map • 6 unlined index cards • stopwatch • stethoscope	**Student Edition** • Quick Check (p. 416)
Lesson 160 Investigation: How Fast Is the Beat?			
417	160.1 Predict how long it will take the heart rate to return to normal after exercise. 160.2 Calculate heart rate before and after exercise. 160.3 Measure and record data about the heart rate. 160.4 Graph the data. 160.5 Communicate why the data is useful.	**Activities** • Investigation: How Fast Is the Beat? (pp. 363–65) **BJU Press Trove** • Link: The Heart **Materials** • supplies for heartbeat Investigation; see Activities p. 363	**Assessments** • Investigation Rubric
Lesson 161 Blood Vessels			
418–22	161.1 Explain the function of blood vessels. 161.2 Differentiate between arteries and veins. 161.3 Identify the largest artery and the largest veins. 161.4 Explain how the exchange of gases and wastes occurs in the body. 161.5 Evaluate views of the origin of the circulatory system. **BWS** History of Nature (evaluate)	**Teacher Edition** • IA 14.2: Chapter 14 Vocabulary Scoot • IA 14.2 Key: Chapter 14 Vocabulary Scoot **BJU Press Trove** • Video: Blue Blood • Link: Blood Vessels • PPT pres.: Lesson 161 **Materials** • 8 index cards • beanbag • stopwatch • twisting balloon • water	**Student Edition** • Quick Check (p. 422) **Activities** • Study Guide (pp. 367–69) **Assessments** • Quiz 14A

*Digital resources for homeschool users are available on Homeschool Hub.

Lesson 162 Exploration: The Heart of the Matter			
423	162.1 Research the structures and functions of the human heart. 162.2 Create a model of the heart. 162.3 Communicate about the structures and functions of the heart, using the model. 162.4 Compare the human heart model to the human heart.	**Activities** • Exploration: The Heart of the Matter (pp. 371–72) **BJU Press Trove** • Link: Learn about Valves **Materials** • supplies for building a heart model; see Activities p. 371	**Assessments** • Exploration Rubric
Lesson 163 The Blood			
424–29	163.1 Identify the functions of the blood in the body. 163.2 Identify the components of the blood. 163.3 Describe the functions of the plasma, red blood cells, white blood cells, and platelets. 163.4 Identify the four main blood types. 163.5 Write an argument in favor of blood donation. **BWS** Importance of Humans (apply)	**BJU Press Trove** • Link: Bone Marrow • PPT pres.: Lesson 163 **Materials** • supplies for contents of the blood demonstration	**Student Edition** • Quick Check (p. 429) **Activities** • Study Guide (pp. 373–74) **Assessments** • Quiz 14B
Lesson 164 Investigation: Exploring Blood Types			
430	164.1 Predict which blood types can safely mix with others. 164.2 Experiment to see which blood types can safely mix. 164.3 Collect and record data. 164.4 Communicate why it is important to know which blood types can safely mix with others.	**Activities** • Investigation: Exploring Blood Types (pp. 375–77) **BJU Press Trove** • Link: Blood Factory **Materials** • supplies for liquid representing blood types • supplies for blood type Investigation; see Activities p. 375	**Assessments** • Investigation Rubric
Lesson 165 Cleaning the Blood			
431–33	165.1 Identify organs that help remove wastes from the blood. 165.2 Describe how the skin, lungs, and kidneys remove wastes from the blood. 165.3 Differentiate between perspiration and respiration.	**Activities** • Cleaning the Blood (p. 379) **BJU Press Trove** • Link: What Are Kidneys? • PPT pres.: Lesson 165 **Materials** • banner paper and markers • supplies for wastes in the blood demonstration	**Student Edition** • Quick Check (p. 433)

Pages	Objectives	Resources & Materials	Assessments
Lesson 166 Caring for the Heart			
434–38	166.1 Identify some types of heart problems. 166.2 Differentiate between heart problems that are congenital and those that result from unhealthy choices. 166.3 Identify heart-healthy behaviors. 166.4 Formulate a plan for a heart-healthy lifestyle. **BWS** Importance of Humans (formulate) 166.5 Describe the job of a cardiologist.	**Teacher Edition** • IA 14.1: Anticipation Guide: The Circulatory System • IA 14.1 Key: Anticipation Guide: The Circulatory System **BJU Press Trove** • Video: Cardiologist • Link: Congenital Heart Disease • PPT pres.: Lesson 166	**Student Edition** • Quick Check (p. 438) **Activities** • Study Guide (pp. 381–83) **Assessments** • Quiz 14C
Lesson 167 Investigation: Pump and Pour			
439	167.1 Predict how much water can be pumped in one minute. 167.2 Measure the amount of water pumped in one minute. 167.3 Collect and record data about how much water was pumped. 167.4 Compare how much water was pumped with how much blood the heart pumps in one minute.	**Activities** • Investigation: Pump and Pour (pp. 385–88) **BJU Press Trove** • Link: The Circulatory System **Materials** • supplies for heart function Investigation; see Activities p. 385	**Assessments** • Investigation Rubric
Lesson 168 Review			
	168.1 Recall terms and concepts from Chapter 14.	**Activities** • Study Guides from Chapter 14 • Graphic Organizer from Chapter 14 **Assessments** • Quizzes 14A–14C	
Lesson 169 Test			
	169.1 Apply terms and concepts from Chapter 14.		**Assessments** • Test 14 **BJU Press Trove** • Chapter 14 Test Bank

Chapter 15: The Nervous System

IA Instructional Aid **PPT pres.** PowerPoint presentation **G/E** *Games/Enrichment*

Pages	Objectives	Resources & Materials	Assessments
Lesson 170 Structure of the Nervous System			
440–47	170.1 Evaluate people's inferences about the nervous system. **BWS** Modeling in Science (evaluate) 170.2 Identify the two main parts of the nervous system. 170.3 Explain how the parts of the central nervous system work together. **BWS** Design in Nature (explain) 170.4 Identify the four lobes of the cerebrum. 170.5 Differentiate among the functions of the three parts of the brain.	**Activities** • Parts of the Nervous System (pp. 389–90) **BJU Press Trove*** • Video: The Nervous System • Link: Brain Sizes • PPT pres.: Lesson 170 **Materials** • 3 index cards, per student	**Student Edition** • Quick Check (p. 447)
Lesson 171 The Peripheral Nervous System			
448–51	171.1 Describe the parts of a neuron. 171.2 Explain how neurons send messages. 171.3 Describe how a reflex occurs.	**Teacher Edition** • IA 15.1: Nervous System • IA 15.1 Key: Nervous System **Activities** • Parts of the Nervous System (p. 390) **BJU Press Trove** • PPT pres.: Lesson 171 **Materials** • 2 dice • 2 different-colored dry-erase markers • ruler	**Student Edition** • Quick Check (p. 451) **Activities** • Study Guide (pp. 391–93) **Assessments** • Quiz 15A
Lesson 172 Investigation: Reaction Time			
452	172.1 Hypothesize the effects of changing a variable on reaction time. 172.2 Record the measurement of each test. 172.3 Graph the results. 172.4 Identify and control the variables. 172.5 Infer conclusions based on the results.	**Activities** • Investigation: Reaction Time (pp. 395–98) **BJU Press Trove** • G/E: Lesson 172 Review **Materials** • yellow, red, and green posterboard • supplies for reaction time Investigation; see Activities p. 395	**Assessments** • Investigation Rubric

*Digital resources for homeschool users are available on Homeschool Hub.

Pages	Objectives	Resources & Materials	Assessments
Lesson 173 Interactions with the Nervous System			
453–58	173.1 Describe how the five senses interact with the nervous system. 173.2 Interpret infographics for sensory information. 173.3 Identify the nerves associated with hearing, sight, and smell. 173.4 Explain how the different senses communicate with the brain.	**BJU Press Trove** • Video: Optical Illusions • Link: Pinhole Viewer • PPT pres.: Lesson 173 **Materials** • 5 socks with a different small object in each • 3 index cards, 10 cm × 15 cm (4” × 6”), or sentence strips • supplies for the eye demonstration	**Student Edition** • Quick Check (p. 458) **Activities** • Study Guide (pp. 399–400) **Assessments** • Quiz 15B
Lesson 174 Investigation: Touch Points			
459	174.1 Predict whether the arm, finger, palm, or neck is most sensitive to touch. 174.2 Measure the distance between the touch tester points. 174.3 Record the touch tester data. 174.4 Draw conclusions about which tested area of the body is most sensitive to touch.	**Activities** • Investigation: Touch Points (pp. 401–5) **Materials** • prepared index cards from Lesson 173 • supplies for touch points Investigation; see Activities p. 401	**Assessments** • Investigation Rubric
Lesson 175 Inquiry: More Touch Points			
459	175.1 Hypothesize whether the cheek, forehead, upper arm, or calf is most sensitive to touch. 175.2 Measure the distance between the touch tester points. 175.3 Record the touch tester data. 175.4 Draw conclusions about which tested area of the body is most sensitive to touch. 175.5 Compare the results of the Inquiry with the results of the Investigation.	**Activities** • Inquiry: More Touch Points (pp. 407–8) **BJU Press Trove** • Link: Sense of Touch **Materials** • Touch Testers from Lesson 174	**Assessments** • Inquiry Rubric
Lesson 176 Memory and Sleep			
460–63	176.1 Differentiate between short-term memory and long-term memory. 176.2 Describe some characteristics of REM sleep. 176.3 Explain why sleep is important to the body.	**Teacher Edition** • IA 15.2: Memory • IA 15.2 Key: Memory **Activities** • Sleepy Animals (pp. 409–10) **BJU Press Trove** • Video: Memory • PPT pres.: Lesson 176	**Student Edition** • Quick Check (p. 463)

Pages	Objectives	Resources & Materials	Assessments
Lesson 177 Nervous System Disorders			
464–65	177.1 Explain the difference between a disease and a disorder. 177.2 Identify some common nervous system disorders.	**Teacher Edition** • IA 15.3: Nervous System Review • IA 15.3 Key: Nervous System Review **BJU Press Trove** • PPT pres.: Lesson 177 **Materials** • 2 dice • 2 different-colored dry-erase markers	**Student Edition** • Quick Check (p. 465)
Lesson 178 Medications			
466–71	178.1 Describe some common categories of drugs. 178.2 Describe some of the problems resulting from drug abuse. 178.3 Explain how illegal drugs affect the nervous system. 178.4 Describe biblical reasons for not abusing drugs. **BWS** Importance of Humans (explain) 178.5 Describe the job of a pharmacist.	**BJU Press Trove** • Video: Pharmacist • Link: Medication Safety • Link: Prescription and Nonprescription Medicines • PPT pres.: Lesson 178 **Materials** • index card, per student	**Student Edition** • Quick Check (p. 471) **Activities** • Study Guide (pp. 411–14) **Assessments** • Quiz 15C
Lesson 179 Review			
	179.1 Recall terms and concepts from Chapter 15.	**Activities** • Study Guides from Chapter 15 • Graphic Organizer from Chapter 15 **Assessments** • Quizzes 15A–15C **Materials** • object, such as a dry-erase marker or a book, per team	
Lesson 180 Test			
	180.1 Apply terms and concepts from Chapter 15.		**Assessments** • Test 15 **BJU Press Trove** • Chapter 15 Test Bank