Science 5, 5th Edition • Lesson Plan Overview

Chapter 1: About Matter

IA Instructional Aid PPT pres. PowerPoint presentation

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

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| 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
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| 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

IA Instructional Aid PPT pres. PowerPoint presentation

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

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

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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)
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| 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

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

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

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

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| 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)
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| 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

IA Instructional Aid PPT pres. PowerPoint presentation

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

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| 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 observationExploration; 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)
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| 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
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| 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
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Chapter 7: Minerals and Rocks

IA Instructional Aid PPT pres. PowerPoint presentation

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

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| 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
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| 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

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

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| 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 termdinosaur 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
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| 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

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

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| 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)
 |

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| 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

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| 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.

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| 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
 |

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| 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

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

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| 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
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| 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

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| --- | --- | --- | --- |
| 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.

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| 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

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

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| 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
 |

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| 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

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

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| 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)
 |

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| 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

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

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| 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)
 |

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| --- | --- | --- | --- |
| 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
 |