

Biology 6th Edition – Lesson Plan Overview

Chapter 1: The Living Creation (Foundational)

PPT Pres. PowerPoint Presentation LM Lab Manual TLM Teacher Lab Manual EV ExamView

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
1.1 The Study of Life				
5–11	1.1.1 Define biology . 1.1.2 Compare how naturalists and Christians view biology. BWS Foundations (evaluate) 1.1.3 Explain the need for a worldview in the study of biology. BWS Foundations (explain) 1.1.4 Summarize the six attributes of life. BWS Foundations (recall) 1.1.5 Relate the six attributes of life to specific biological structures and functions. 1.1.6 Identify the sources of energy and information for a living organism.	Teacher Edition • Section 1.1 Review Answers	BJU Press Trove* • Video: <i>God’s World</i> • Video: <i>In the Beginning</i> • PPT Pres.: Section 1.1 Slides	Student Edition Section 1.1 Review Teacher Edition Formative Assessment: <i>Observation or Worldview-Based Interpretation?</i> Assessments Section 1.1 Quiz
1.2 The Work of Biology				
12–17	1.2.1 Explain the role of modeling in biology. BWS Models (explain) 1.2.2 Compare the terms theory, law, and hypothesis . 1.2.3 Describe the process of scientific inquiry.	Teacher Edition • Mini Lab: <i>Peer Review</i> • Section 1.2 Review Answers Materials • physical model (any subject) • miscellaneous building materials	BJU Press Trove • PPT Pres.: Section 1.2 Slides	Student Edition Section 1.2 Review Assessments Section 1.2 Quiz
Lab 1A A Method to This Madness—Scientific Inquiry				
LM 1–5	Define controlled experiment . Describe the process that scientists use to answer questions.			Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
1.3 The Balance of Life				
17–22	1.3.1 Relate environmentalism with conservation. 1.3.2 Explain a scientist’s obligation to others and the environment. <u>BWS</u> Ethics (explain) 1.3.3 Compare the positive and negative effects of tools used in the study of biology. 1.3.4 Summarize the process by which a Christian analyzes ethical issues. <u>BWS</u> Ethics (explain) 1.3.5 Recall the biblical ethics triad. <u>BWS</u> Ethics (recall) 1.3.6 Explain the principles of secular bioethics. <u>BWS</u> Ethics (explain)	Teacher Edition <ul style="list-style-type: none"> Ethics: <i>Christian Ethics and Biology</i> Ethics: <i>The Principles of Bioethics</i> Section 1.3 Review Answers 	BJU Press Trove <ul style="list-style-type: none"> Video: <i>Christian Bioethics</i> Video: <i>Secular Bioethics</i> PPT Presentation: Section 1.3 Slides 	Student Edition Section 1.3 Review Assessments Section 1.3 Quiz
Lab 1B More Than Meets the Eye—The Microscope				
LM 7–13	Label the parts of a microscope. Describe how to take care of a microscope. Draw an image of a microorganism from a microscope slide.			Lab Manual Lab Report
Ethics Day				
20–22	1.3.2 Explain a scientist’s obligation to others and the environment. <u>BWS</u> Ethics (explain) 1.3.4 Summarize the process by which a Christian analyzes ethical issues. <u>BWS</u> Ethics (explain) 1.3.5 Recall the biblical ethics triad. <u>BWS</u> Ethics (recall) 1.3.6 Explain the principles of secular bioethics. <u>BWS</u> Ethics (explain)	Teacher Edition <ul style="list-style-type: none"> Ethics: <i>Christian Ethics and Biology</i> Ethics: <i>The Principles of Bioethics</i> 		
Chapter 1 Review				
23–25	Summarize the attributes of living things. Relate the study of biology to worldview. Defend the necessity of a biblical worldview for making sound ethical decisions. Describe the process that scientists use to answer questions. (Lab 1A) Describe the care and use of a light microscope and identify its parts. (Lab 1B)	Teacher Edition <ul style="list-style-type: none"> Chapter 1 Review Answers 		Student Edition Chapter 1 Review

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 1 Test				
	Demonstrate knowledge of concepts from Chapter 1 by taking the test.		BJU Press Trove • EV: Chapter 1 Test Bank	Assessments Chapter 1 Test

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

Chapter 2: The Chemistry of Living Things (Key)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
2.1 Matter, Energy, and Life				
27–31	2.1.1 Compare the different types of energy. 2.1.2 Describe change in matter. 2.1.3 Compare ionic and covalent compounds. 2.1.4 Relate the terms <i>matter</i> , <i>atom</i> , <i>element</i> , <i>proton</i> , <i>neutron</i> , <i>electron</i> , <i>compound</i> , and <i>molecule</i> to one another.	Teacher Edition • Section 2.1 Review Answers Materials • index cards with vocabulary words • birthday candle (or other similar candle) • matches or lighter • watch glass, glass petri dish, or other small and flat glassware • electronic balance • periodic table of elements (classroom poster or individual copies)	BJU Press Trove* • PPT Pres.: Section 2.1 Slides	Student Edition Section 2.1 Review Assessments Section 2.1 Quiz
2.2 The Chemical Processes of Life				
32–37	2.2.1 Compare chemical and physical changes. 2.2.2 Relate Brownian motion to diffusion and the dissolving process. 2.2.3 Compare what happens during exothermic and endothermic reactions. 2.2.4 Compare the actions of catalysts and inhibitors. 2.2.5 Explain how chemistry can be used to help living things, especially people. BWS Foundations (explain)	Teacher Edition • Section 2.2 Review Answers Materials • beakers, glass (or other jars) (3) • food dye (1–2 colors) • table salt or Epsom salt • stirring rod or spoon • vegetable oil (any type)	BJU Press Trove • Link: <i>Endothermic and Exothermic Reactions</i> • Link: <i>Frog Enzyme Analogy</i> • PPT Pres.: Section 2.2 Slides	Student Edition Section 2.2 Review Teacher Edition Formative Assessment: <i>Exit Ticket</i> Assessments Section 2.2 Quiz
Lab 2 Lost in the Woods—Designing a Water Treatment System				
LM 15–18	Explain the biological and theological importance of providing treated water. Design a water treatment system that produces safe drinking water. Test the water treatment system through a series of water quality tests.	Teacher Lab Manual • Lab 2 Teacher Guide • Instructional Aid: <i>Lost in the Woods Rubric</i> • Water Treatment System Project		Teacher Lab Manual <i>Lost in the Woods</i> Rubric

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
2.3 Biochemistry				
38–43	<p>2.3.1 Relate the unique properties of water to its importance for living things.</p> <p>2.3.2 Define <i>organic compound</i>.</p> <p>2.3.3 Distinguish organic compounds from other kinds of compounds.</p> <p>2.3.4 Compare the structures and functions of carbohydrates, lipids, proteins, and nucleic acids.</p> <p>2.3.5 Analyze a model of biblical ethics regarding abortion. BWS Ethics (explain)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Case Study: <i>Shield of Ice</i> • Mini Lab: <i>Starch and Fat Test</i> (p. 44) • Ethics: <i>Using the Biblical Triad</i> (pp. 48–49) • Section 2.3 Review Answers <p>Materials</p> <ul style="list-style-type: none"> • vegetable oil (any kind) • table salt or Epsom salt • 4–6 fat food samples • 4–6 starch food samples • water • large brown paper bag • small cups • permanent marker • iodine • 2–3 food items with nutrition labels (If possible, choose one carbohydrate, one protein, and one fat/lipid.) 	<p>BJU Press Trove</p> <ul style="list-style-type: none"> • Video: <i>The Complexity of Life</i> • Video: <i>The Biblical Triad</i> • Link: <i>Basilisk Lizards</i> • Link: <i>Asian House Gecko</i> • Link: <i>Why Does Ice Float in Water?</i> • Link: <i>Inside a Beaver Lodge</i> • PPT Pres.: Section 2.3 Slides 	<p>Student Edition Section 2.3 Review</p> <p>Assessments Section 2.3 Quiz</p>
Ethics Day				
48–49	<p>2.3.5 Analyze a model of biblical ethics regarding abortion. BWS Ethics (explain)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Ethics: <i>Using the Biblical Triad</i> 		
Chapter 2 Review				
45–49	<p>Describe the composition of living things. Relate chemical processes to biological functions.</p> <p>Analyze the functions of organic compounds.</p> <p>Design a water treatment system to purify water and make it safe for human consumption. (Lab 2)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Chapter 2 Review Answers 		<p>Student Edition Chapter 2 Review</p>

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 2 Test				
	Demonstrate knowledge of concepts from Chapter 2 by taking the test.		BJU Press Trove • EV: Chapter 2 Test Bank	Assessments Chapter 2 Test

Chapter 3: Ecology (Foundational)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
3.1 Our Living Planet				
51–55	3.1.1 Distinguish between ecosystems and the biosphere. 3.1.2 Explain how biotic and abiotic factors work together to sustain life. <u>BWS</u> Design (explain)	Teacher Edition <ul style="list-style-type: none"> • Case Study: <i>The Great Barrier Reef</i> • Mini Lab: <i>Who Is in the Community?</i> • Section 3.1 Review Answers Materials <ul style="list-style-type: none"> • ecosystem photos • opaque bowl • colored marbles • sampling tools 	BJU Press Trove* <ul style="list-style-type: none"> • Video: <i>Cleaner Fish</i> • PPT Pres.: Section 3.1 Slides 	Student Edition Section 3.1 Review Assessments Section 3.1 Quiz
Lab 3A Tag!—Mark-and-Recapture Sampling and Population Size				
LM 19–24	Explain how mark and recapture can be used to estimate population size. Collect data by mark and recapture to answer a scientific question. Describe the limitations of the mark-and-recapture method of sampling.			Student Edition Lab Report
3.2 Biomes				
56–63	3.2.1 Explain the role of climate in determining biome types. 3.2.2 Classify biomes on the basis of their biotic and abiotic factors. 3.2.3 Compare biomes and vertical zonation.	Teacher Edition <ul style="list-style-type: none"> • Section 3.2 Review Answers Materials <ul style="list-style-type: none"> • sample climate data graphs 	BJU Press Trove <ul style="list-style-type: none"> • PPT Pres.: Section 3.2 Slides 	Student Edition Section 3.2 Review Assessments Section 3.2 Quiz
Lab 3B Must You Be So Competitive?—Inquiring into Growth Rate				
LM 25–26	Design and conduct an experiment to evaluate the effect of a selected factor on the growth rates of plants. Evaluate the experimental design on the basis of collected data.	Teacher Lab Manual <ul style="list-style-type: none"> • Lab 3B Teacher Guide 		Formal Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
3.3 Web of Life				
64–67	<p>3.3.1 Create food webs and ecological pyramids to represent the relationships between producers and consumers within an ecosystem.</p> <p>3.3.2 Give examples of neutralism, competition, predation, parasitism, commensalism, and mutualism.</p> <p>3.3.3 Evaluate a statement on the probability that life exists on other planets. BWS Design (evaluate, formulate)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Case Study: <i>Tide Pool Ecology</i> (p. 70) • Section 3.3 Review Answers <p>Materials</p> <ul style="list-style-type: none"> • images of animals 	<p>BJU Press Trove</p> <ul style="list-style-type: none"> • Video: <i>Web of Life</i> • PPT Pres.: Section 3.3 Slides 	<p>Student Edition</p> <p>Section 3.3 Review</p> <p>Assessments</p> <p>Section 3.3 Quiz</p>
Chapter 3 Review				
68–71	<p>Relate the study of ecology within the larger context of biology and to other content areas of science.</p> <p>Compare the workability of various models used in ecology.</p> <p>Evaluate the claim that Earth is divinely designed to support life.</p> <p>Estimate the size of a population of organisms using mark and recapture. (Lab 3A)</p> <p>Design, conduct, and evaluate an experiment to assess the effect of a selected factor on the growth rates of plants. (Lab 3B)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Chapter 3 Review Answers 		<p>Student Edition</p> <p>Chapter 3 Review</p>
Chapter 3 Test				
	<p>Demonstrate knowledge of concepts from Chapter 3 by taking the test.</p>		<p>BJU Press Trove</p> <ul style="list-style-type: none"> • EV: Chapter 3 Test Bank 	<p>Assessments</p> <p>Chapter 3 Test</p>

Chapter 4: Interacting with the Biosphere (Key)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
4.1 Sustainability				
73–82	4.1.1 Trace the flow of materials through the biochemical cycles. 4.1.2 Describe the factors that limit or promote population growth and biodiversity. 4.1.3 Analyze data on a population growth chart. 4.1.4 Distinguish between primary and secondary succession. 4.1.5 Formulate a statement on the significance of the predictability and orderliness of ecosystems. BWS Design (formulate)	Teacher Edition <ul style="list-style-type: none"> • Case Study: <i>Ferretting Out the Growth Rate</i> • Mini Lab: <i>Predation and Populations</i> (p. 83) • Section 4.1 Review Answers Materials <ul style="list-style-type: none"> • beans • pipe cleaners • chalk 	BJU Press Trove* <ul style="list-style-type: none"> • Link: <i>Are Fires Actually Good for Forests?</i> • PPT Pres.: Section 4.1 Slides 	Student Edition Section 4.1 Review Assessment Section 4.1 Quiz
Lab 4A Forest or Farm?—A Mathematical Model of Biodiversity				
LM 27–32	Carry out a field transect. Analyze the diversity of an ecosystem using Simpson’s Diversity Index. Interpret the meaning of the Simpson’s Diversity Index value for a particular ecosystem.			Lab Manual Lab Report
Lab 4B Hale Hardwoods or Sickly Cedars?—Monitoring Forest Health				
LM 33–38	Demarcate a forest plot. Measure tree circumference. Derive characteristic data related to forest health. Infer forest characteristics from indirect measurements.			Lab Manual Lab Report
4.2 The Human Niche (2 days)				
84–89	4.2.1 Explain the role that people play in managing the earth. BWS Foundations (explain) 4.2.2 Evaluate arguments about changes in the environment. BWS Modeling (evaluate) 4.2.3 Evaluate bias in the field of ecology BWS Foundations (evaluate) 4.2.4 Relate different fields of science to ecology.	Teacher Edition <ul style="list-style-type: none"> • Worldview Investigation: <i>Creatures and Climate Change</i> (p. 90) • Section 4.2 Review Answers 	BJU Press Trove <ul style="list-style-type: none"> • Link: <i>Ecological Footprint Calculator</i> • Links for Student Research • Instructional Aid: Worldview Investigation Rubric • PPT Pres.: Section 4.2 Slides 	Student Edition Section 4.2 Review Teacher Edition Worldview Investigation Rubric (Appendix F) Assessment Section 4.2 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 4 Review				
91–93	Analyze the sustainability of populations in various ecosystems. Evaluate various ecological claims from a biblical perspective. Analyze the biodiversity in a local habitat by conducting a transect. (Lab 4A) Evaluate the health of a forest using plot samples. (Lab 4B)	Teacher Edition • Chapter 4 Review Answers		Student Edition Chapter 4 Review
Chapter 4 Test				
	Demonstrate knowledge of concepts from Chapter 4 by taking the test.		BJU Press Trove • EV: Chapter 4 Test Bank	Assessment Chapter 4 Test

Chapter 5: Cytology (Foundational)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
5.1 The Structure and Function of Cells				
97–105	5.1.1 Relate the modern cell theory to the changing nature of models. BWS Foundations (evaluate) 5.1.2 Compare unicellular, multicellular, and colonial organisms. 5.1.3 Differentiate between prokaryotic and eukaryotic cell structures. 5.1.4 Illustrate a typical cell and describe the functions of its parts.	Teacher Edition • Mini Lab: <i>Scaling Up a Cell</i> • Section 5.1 Review Answers Materials • metric ruler • metric tape measure • calculator	BJU Press Trove* • Video: <i>Pattern of Life</i> • PPT Pres.: Section 5.1 Slides	Student Edition Section 5.1 Review Assessments Section 5.1 Quiz
Lab 5A Dwell on the Cell—Basic Cytology				
LM 39–43	Prepare wet mounts. Create labeled sketches of cell structures seen under magnification. Compare plant and animal cells.			Lab Manual Lab Report
5.2 The Cell Environment				
105–10	5.2.1 Describe how cells in a particular environment maintain homeostasis. 5.2.2 Compare how different solutions affect cells. 5.2.3 Explain how molecules are transported across the cell membrane. 5.2.4 Analyze the ethical model of bioethics regarding abortion. BWS Ethics (evaluate)	Teacher Edition • Case Study: <i>Passive Transport and Kidney Stones</i> • Section 5.2 Review Answers • Ethics: <i>Using the Principles of Bioethics Strategy</i> (pp. 114–15)	BJU Press Trove • PPT Pres.: Section 5.2 Slides	Student Edition Section 5.2 Review Teacher Edition Formative Assessment: <i>Transport Check</i> Assessments Section 5.2 Quiz
Lab 5B The Pressure Is On—Investigating Osmosis				
LM 45–47	Explain the effect of solute concentration on osmosis. Identify whether an osmotic system has reached equilibrium. Make predictions about how other factors may affect osmosis.			Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 5 Review				
111–15	Compare the structures and functions of cells in unicellular and multicellular organisms. Analyze cell processes for maintaining homeostasis. Compare the structures of plant and animal cells. (Lab 5A) Investigate the effects of solute concentration on osmosis. (Lab 5B)	Teacher Edition • Chapter 5 Review Answers		Student Edition Chapter 5 Review
Chapter 5 Test				
	Demonstrate knowledge of concepts from Chapter 5 by taking the test.		BJU Press Trove • EV: Chapter 5 Test Bank	Assessment Chapter 5 Test

Chapter 6: Energy & Information in the Cell (Foundational)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
6.1 Metabolism				
117–19	6.1.1 Describe how metabolism maintains homeostasis. 6.1.2 Explain how energy is stored in ATP. 6.1.3 Track the flow of energy from ATP to ADP.	Teacher Edition <ul style="list-style-type: none"> • Worldview Investigation: <i>Signature in the Cell</i> • Section 6.1 Review Answers Materials <ul style="list-style-type: none"> • play money (various denominations) • fun-sized candy (or other shareable snack) 	BJU Press Trove* <ul style="list-style-type: none"> • PPT Pres.: Section 6.1 Slides • Instructional Aid: Worldview Investigation Rubric 	Student Edition Section 6.1 Review Teacher Edition Worldview Investigation Rubric (Appendix F) Assessments Section 6.1 Quiz
Lab 6A No Swimming Today—Oxygen and Metabolism				
LM 49–54	Define <i>biochemical oxygen demand</i> (BOD). Relate oxygen demand to cellular metabolism. Measure BOD using a dissolved oxygen test kit. Estimate the amount of organic pollution in a water sample using BOD.			Lab Manual Lab Report
6.2 DNA and Protein Synthesis				
120–27	6.2.1 Compare the structures of DNA and RNA. 6.2.2 Summarize the model of DNA replication. 6.2.3 Differentiate between transcription and translation. 6.2.4 Explain the role of DNA and RNA in protein synthesis. 6.2.5 Formulate a position on CRISPR technology using the biblical ethics triad. BWS Ethics: formulate	Teacher Edition <ul style="list-style-type: none"> • Mini Lab: <i>Modeling DNA and RNA</i> • Ethics: CRISPR Technology (p. 129) • Section 6.2 Review Answers 	BJU Press Trove <ul style="list-style-type: none"> • Link: <i>DNA Replication</i> • Video: <i>DNA Structure</i> • Video: <i>CRISPR Technology</i> • PPT Pres.: Section 6.2 Slides 	Student Edition Section 6.2 Review Assessments Section 6.2 Quiz
Ethics Day				
129	6.2.5 Formulate a position on CRISPR technology using the biblical ethics triad. BWS Ethics: formulate	Teacher Edition <ul style="list-style-type: none"> • Ethics: <i>CRISPR Technology</i> 		

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Lab 6B Hidden Code—Extracting DNA from Cells				
LM 55–58	Extract DNA from plant cells. Observe DNA strands separated from the nucleus.			Lab Manual Lab Report
Chapter 6 Review				
128–29	Relate metabolism and energy in living organisms. Describe the processes of DNA and protein synthesis. Determine the biochemical oxygen demand of water samples over time. (Lab 6A) Analyze DNA after extracting it from plant cells. (Lab 6B)	Teacher Edition • Chapter 6 Review Answers		Student Edition Chapter 6 Review
Chapter 6 Test				
	Demonstrate knowledge of concepts from Chapter 6 by taking the test.		BJU Press Trove • EV: Chapter 6 Test Bank	Assessments Chapter 6 Test

Chapter 7: Cell Processes (Foundational)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
7.1 Photosynthesis				
131–36	7.1.1 Relate photosynthesis to life in the biosphere according to Genesis 1:29–31. BWS Design (explain) 7.1.2 Give examples for exercising dominion using the process of photosynthesis. BWS Foundations (explain) 7.1.3 Diagram the reactants and products of photosynthesis using a chemical equation. 7.1.4 Relate the roles of pigments, light, and chemical energy to the process of photosynthesis. 7.1.5 Describe what occurs during the light-dependent and light-independent phases of photosynthesis. 7.1.6 Give examples of factors that affect photosynthesis.	Teacher Edition • Section 7.1 Review Answers	BJU Press Trove* • PPT Pres.: Section 7.1 Slides	Student Edition Section 7.1 Review Teacher Edition Formative Assessment: <i>Light-Dependent Phase Check</i> Assessments Section 7.1 Quiz
Lab 7A Whatever Floats Your Leaf—Rates of Photosynthesis				
LM 59–64	Observe the results of photosynthesis in leaf disks. Form a hypothesis about factors affecting photosynthesis. Test a hypothesis about photosynthesis.			Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
7.2 Cellular Respiration and Fermentation				
137–44	<p>7.2.1 Trace the flow of energy from glucose in glycolysis to ATP in the electron transport chain.</p> <p>7.2.2 List the amounts of ATP produced in each step of aerobic respiration.</p> <p>7.2.3 Differentiate between aerobic and anaerobic respiration.</p> <p>7.2.4 Explain the role of aerobic and anaerobic respiration in the environment.</p> <p>7.2.5 Relate cellular respiration to its effects on the environment.</p> <p>7.2.6 Reflect on how God’s care for creation is seen in cell processes. BWS Design (apply)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Case Study: <i>Hydrothermal Vents</i> • Mini Lab: <i>The Effect of Temperature on Fermentation</i> (p. 145) • Section 7.2 Review Answers <p>Materials</p> <ul style="list-style-type: none"> • large test tubes (3) • disposable pipettes (3) • washers (6) • scissors • tape • marking pen • yeast-sugar solution • cold water • room-temperature water • warm water • marshmallow • ignition source (e.g., match, laboratory burner) • rechargeable battery 	<p>BJU Press Trove</p> <ul style="list-style-type: none"> • Video: <i>Cellular Respiration and Photosynthesis</i> • PPT Pres.: Section 7.2 Slides 	<p>Student Edition Section 7.2 Review</p> <p>Teacher Edition Formative Assessment: <i>Cellular Respiration Check</i></p> <p>Assessments Section 7.2 Quiz</p>
Lab 7B On the Road to Alternative Fuels—Fermentation and Biofuels				
LM 65–68	<p>Define <i>fermentation</i>.</p> <p>Determine which of three feedstocks is the most effective for fermentation.</p> <p>Describe the issues regarding ethanol production and use.</p> <p>Explain how worldview affects one’s response to new technologies.</p>			<p>Lab Manual Lab Report</p>
Chapter 7 Review				
146–47	<p>Summarize the processes that a cell undergoes to obtain and use energy.</p> <p>Describe the way an organism’s environment affects cellular processes.</p> <p>Design and conduct an experiment to test a factor that may affect the rate of photosynthesis. (Lab 7A)</p> <p>Determine which of three feedstocks is the best for fermentation. (Lab 7B)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Chapter 7 Review Answers 		<p>Student Edition Chapter 7 Review</p>

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 7 Test				
	Demonstrate knowledge of concepts from Chapter 7 by taking the test.		BJU Press Trove • EV: Chapter 7 Test Bank	Assessments Chapter 7 Test

Chapter 8: Basic Genetics (Foundational)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
8.1 Cell Division				
149–56	8.1.1 Differentiate between a gene and a chromosome. 8.1.2 Differentiate between a sex chromosome and an autosome. 8.1.3 Relate DNA to chromosomes. 8.1.4 Trace the growth and reproduction of a cell through the cell cycle. 8.1.5 Illustrate the phases of mitosis and meiosis. 8.1.6 Compare mitosis and meiosis.	Teacher Edition • Section 8.1 Review Answers	BJU Press Trove* • Video: <i>Mitosis and Meiosis</i> • PPT Pres.: Section 8.1 Slides	Student Edition Section 8.1 Review Assessments Section 8.1 Quiz
Lab 8A Let's Split—Mitosis and Meiosis				
LM 69–73	Draw the stages of mitosis. Explain the differences between cytokinesis in animal and plant cells. Identify the stages of meiosis. Explain the differences between mitosis and meiosis.			Lab Manual Lab Report
8.2 The Inheritance of Traits				
157–67	8.2.1 List the three genetic principles proposed by Mendel. 8.2.2 Differentiate between recessive and dominant traits. 8.2.3 Construct monohybrid and dihybrid crosses using Punnett squares. 8.2.4 Explain the differences between the kinds of genetic inheritance. 8.2.5 Evaluate the prevailing cultural views of race and gender in light of biological facts. BWS Design (evaluate)	Teacher Edition • Case Study: <i>Experimenting with Animals</i> • Case Study: <i>Hemophilia</i> (p. 175) • Mini Lab: <i>Predicting Genotypes</i> • Section 8.2 Review Answers	BJU Press Trove • Video: <i>Patterns of Inheritance</i> • PPT Pres.: Section 8.2 Slides	Student Edition Section 8.2 Review Teacher Edition Formative Assessment: <i>Punnett Square Practice</i> Assessments Section 8.2 Quiz
Lab 8B The Punnett Square Dance—Inheritance Patterns				
LM 75–84	Identify the different basic inheritance patterns. Apply knowledge of inheritance patterns by making Punnett squares.			Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
8.3 Gene Expression				
167–70	8.3.1 Explain how genes control cell development. 8.3.2 Relate the roles of DNA and the environment to gene expression. 8.3.3 Differentiate between embryonic and somatic stem cells.	Teacher Edition <ul style="list-style-type: none"> Case Study: <i>Hope in Hox Genes</i> (p. 174) Section 8.3 Review Answers 	BJU Press Trove <ul style="list-style-type: none"> Link: <i>Nature versus Nurture</i> PPT Pres.: Section 8.3 Slides 	Student Edition Section 8.3 Review Assessments Section 8.3 Quiz
Chapter 8 Review				
171–75	Describe the processes of mitosis and meiosis. Summarize how traits are inherited within a species. Analyze factors that influence gene expression. Differentiate between mitosis and meiosis. (Lab 8A) Analyze inheritance patterns using Punnett squares. (Lab 8B)	Teacher Edition <ul style="list-style-type: none"> Chapter 8 Review Answers 		Student Edition Chapter 8 Review
Chapter 8 Test				
	Demonstrate knowledge of concepts from Chapter 8 by taking the test.		BJU Press Trove <ul style="list-style-type: none"> EV: Chapter 8 Test Bank 	Assessments Chapter 8 Test

Chapter 9: Advanced Genetics (Key)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
9.1 Population Genetics				
177–79	9.1.1 List the factors that affect a gene pool. 9.1.2 Describe the different sources of genetic variation. 9.1.3 Differentiate between genetic drift and genetic flow. 9.1.4 Evaluate the models of genetic change. BWS Modeling: evaluate 9.1.5 Analyze how genetic load can affect the genetic variability within a population.	Teacher Edition • Case Study: <i>Citrus Greening</i> • Section 9.1 Review Answers	BJU Press Trove* • Video: <i>Genetic Load</i> • PPT Pres.: Section 9.1 Slides	Student Edition Section 9.1 Review Assessments Section 9.1 Quiz
Lab 9A Fix It!—Modeling Genetic Drift				
LM 85–90	Explain how genetic drift works. Explain why genetic drift may be an inadequate means of fixing new traits within populations.			Lab Manual Lab Report
9.2 Mutations				
180–86	9.2.1 Describe the occurrence of gene mutations within DNA. 9.2.2 Classify the three types of point mutations. 9.2.3 Explain how a mutation can affect chromosomes. 9.2.4 Explain how nondisjunction affects chromosome number. 9.2.5 Give examples of the ways that a mutation can be expressed in an organism. 9.2.6 Refute the claim that mutation-based diseases are a challenge to the existence of God. BWS Design: formulate	Teacher Edition • Mini Lab: <i>Point Mutations</i> • Section 9.2 Review Answers	BJU Press Trove • Video: <i>Mutations</i> • PPT Pres.: Section 9.2 Slides	Student Edition Section 9.2 Review Assessments Section 9.2 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
9.3 Genetic Engineering				
187–91	<p>9.3.1 Give support for the importance of gene sequencing.</p> <p>9.3.2 Describe how a gene can be transferred from one organism to another.</p> <p>9.3.3 Explain four ways that DNA can be manipulated.</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> Worldview Investigation: <i>Fighting Drought with Genetics</i> (p. 192) Case Study: Gene Therapy for SCID (p. 196) Section 9.3 Review Answers 	<p>BJU Press Trove</p> <ul style="list-style-type: none"> PPT Pres.: Section 9.3 Slides Instructional Aid: Worldview Investigation Rubric 	<p>Student Edition Section 9.3 Review</p> <p>Teacher Edition Worldview Investigation Rubric (Appendix F)</p> <p>Assessments Section 9.3 Quiz</p>
Lab 9B Whodunit?—DNA Fingerprinting				
LM 91–96	<p>Outline the process of DNA fingerprinting.</p> <p>Explain how DNA fingerprinting is used to help solve criminal cases.</p>			<p>Lab Manual Lab Report</p>
Chapter 9 Review				
193–97	<p>Analyze factors that affect genetic variability.</p> <p>Compare the different types of mutations that may occur within cells.</p> <p>Explain how mutations affect the growth and reproduction of cells.</p> <p>Explain how genetic engineering has influenced scientific study.</p> <p>Evaluate the effectiveness of genetic drift as a mechanism for fixing new traits in populations. (Lab 9A)</p> <p>Solve a crime scenario using DNA fingerprinting. (Lab 9B)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> Chapter 9 Review Answers 		<p>Student Edition Chapter 9 Review</p>
Chapter 9 Test				
	<p>Demonstrate knowledge of concepts from Chapter 9 by taking the test.</p>		<p>BJU Press Trove</p> <ul style="list-style-type: none"> EV: Chapter 9 Test Bank 	<p>Assessments Chapter 9 Test</p>

Chapter 10: When Worldviews Collide (Foundational)

PPT Pres. PowerPoint Presentation LM Lab Manual TLM Teacher Lab Manual EV ExamView

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
10.1 Darwin's Theory of Evolution				
199–206	10.1.1 Define <i>evolution</i> . 10.1.2 Summarize the observations and ideas that contributed to Darwin's theory of natural selection. 10.1.3 Explain what Darwin meant by "descent with modification."	Teacher Edition • Section 10.1 Review Answers	BJU Press Trove* • Video: <i>Trilobites</i> • PPT Pres.: Section 10.1 Slides	Student Edition Section 10.1 Review Assessments Section 10.1 Quiz
Lab 10A In Darwin's Own Words—Examining On the Origin of Species				
LM 97–102	Identify the main themes of Darwin's <i>On the Origin of Species</i> . Analyze Darwin's ideas from a biblical worldview.			Lab Manual Lab Report
10.2 The Modern Theory of Evolution				
207–14	10.2.1 Summarize additional contributions to the Darwinian model. 10.2.2 Summarize current naturalistic views of the early earth, the origins of species, and the history of man. 10.2.3 Explain how evolutionists use various forms of evidence to support the modern synthesis theory.	Teacher Edition • Section 10.2 Review Answers	BJU Press Trove • PPT Pres.: Section 10.2 Slides	Student Edition Section 10.2 Review Assessments Section 10.2 Quiz
10.3 Evaluating Modern Evolutionary Theory				
215–25	10.3.1 Evaluate the workability of the modern synthesis model. 10.3.2 Explain how Christians attempt to reconcile the biblical account of Creation with evolution. BWS (Foundations: evaluate)	Teacher Edition • Mini Lab: <i>Conflating Evolution and Natural Selection</i> • Section 10.3 Review Answers Materials • wooden mousetraps (one intact, one disassembled)	BJU Press Trove • Video: <i>Circular Reasoning</i> • PPT Pres.: Section 10.3 Slides	Student Edition Section 10.3 Review Assessments Section 10.3 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Lab 10B Worldview Sleuthing—Evaluating Worldview in Popular Science Literature				
LM 103–8	Identify places in popular science literature in which a writer’s worldview is apparent. Evaluate ideas in popular science literature. Rebuild secular, naturalistic ideas in science literature according to a biblical worldview.			Lab Manual Lab Report
10.4 The Biblical Account				
225–31	10.4.1 Summarize the biblical Creation account. 10.4.2 Summarize how biblical creationists explain how life changes over time. 10.4.3 Compare the modern synthesis and biblical creation models. BWS Modeling: evaluate 10.4.4 Defend the special status of mankind within the biblical creation model. BWS Modeling: formulate	Teacher Edition • Case Study: <i>The Evolutionary Roots of Planned Parenthood</i> • Case Study: <i>Experiment in Evolution</i> (p. 235) • Section 10.4 Review Answers	BJU Press Trove • Video: <i>Alien Life</i> • PPT Pres.: Section 10.4 Slides	Student Edition Section 10.4 Review Assessments Section 10.4 Quiz
Chapter 10 Review				
232–35	Summarize Darwin’s theory of evolution. Compare Darwinian evolution and the modern synthesis. Evaluate the workability of the modern synthesis model. Compare biblical Creation and evolutionary theory. Assess the main themes of <i>On the Origin of Species</i> from a biblical perspective. (Lab 10A) Evaluate the worldviews presented in examples of popular science literature for their compatibility with biblical models of origins and change. (Lab 10B)	Teacher Edition • Chapter 10 Review Answers		Student Edition Chapter 10 Review
Chapter 10 Test				
	Demonstrate knowledge of concepts from Chapter 10 by taking the test.		BJU Press Trove • EV: Chapter 10 Test Bank	Assessments Chapter 10 Test

Chapter 11: Classifying Life (Foundational)

PPT Pres. PowerPoint Presentation LM Lab Manual TLM Teacher Lab Manual EV ExamView

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
11.1 Taxonomy				
239–44	11.1.1 Explain the importance of classifying living things. 11.1.2 Compare the characteristics of the three domains of life. 11.1.3 Identify traits and examples of organisms in the seven kingdoms. 11.1.4 Construct a scientific name.	Teacher Edition • Case Study: <i>Gopher Tortoise Burrows</i> • Section 11.1 Review Answers	BJU Press Trove* • Video: <i>Microorganisms and Plants</i> • Video: <i>Classification</i> • PPT Pres.: Section 11.1 Slides	Student Edition Section 11.1 Review Assessments Section 11.1 Quiz
Lab 11A The Key Concept—Using Dichotomous Keys				
LM 109–20	Define <i>dichotomous key</i> . Explain the use of a dichotomous key. Identify organisms using a dichotomous key.			Lab Manual Lab Report
11.2 Unity and Diversity				
245–51	11.2.1 Describe how systematics is used to classify organisms. 11.2.2 Differentiate between traditional and modern classification. 11.2.3 Respond to the evolutionary argument that systematics is used to support evolution. BWS Foundations (formulate) 11.2.4 Create a plan for engaging others in a discussion about evolution. BWS Foundations (apply) 11.2.5 Interpret a cladogram.	Teacher Edition • Mini Lab: <i>Inquiring into Baraminology</i> • Case Study: <i>Analyzing a Cladogram</i> • Section 11.2 Review Answers	BJU Press Trove • Link: <i>How Could All the Animals Fit on the Ark?</i> • PPT Pres.: Section 11.2 Slides	Student Edition Section 11.2 Review Assessments Section 11.2 Quiz
Lab 11B All Myxed Up—A Case Study in Classification				
LM 121–26	Interpret scientific literature on classification. Explain how the science of taxonomy has changed over the years. Identify the worldviews of the authors of the works being read. Explain how the works of the authors were affected by their worldviews. Evaluate worldviews according to the current taxonomic status of myxozoans.			Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 11 Review				
252–53	<p>Explain how organisms are classified and named.</p> <p>Analyze how worldview affects how scientists classify life.</p> <p>Identify organisms using a dichotomous key. (Lab 11A)</p> <p>Analyze how the worldviews of scientists affect classification. (Lab 11B)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Chapter 11 Review Answers 		<p>Student Edition</p> <p>Chapter 11 Review</p>
Chapter 11 Test				
	<p>Demonstrate knowledge of concepts from Chapter 11 by taking the test.</p>		<p>BJU Press Trove</p> <ul style="list-style-type: none"> • EV: Chapter 11 Test Bank 	<p>Assessments</p> <p>Chapter 11 Test</p>

Chapter 12: Prokaryotes and Viruses (Key)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
12.1 Prokaryotes				
255–62	12.1.1 Differentiate archaea from bacteria. 12.1.2 Classify organisms in domain Archaea. 12.1.3 Summarize the structures and functions of bacteria. 12.1.4 Describe the different ways that bacteria can transfer their DNA. 12.1.5 Explain the functions of bacteria in the environment. 12.1.6 Identify several diseases caused by bacteria.	Teacher Edition • Section 12.1 Review Answers Materials • class poll response cards	BJU Press Trove* • Video: <i>Prokaryotes</i> • PPT Pres.: Section 12.1 Slides	Student Edition Section 12.1 Review Teacher Edition Formative Assessment: <i>Bacterial Reproduction</i> Assessments Section 12.1 Quiz
Lab 12A Squeaky Clean—Bacteria Growth and Handwashing				
LM 127–34	Analyze how the different parts of handwashing affect bacterial count. Evaluate the effectiveness of handwashing in preventing disease.			Lab Manual Lab Report
12.2 Viruses				
263–68	12.2.1 Describe the structures and functions of viruses. 12.2.2 Describe how viruses replicate. 12.2.3 Differentiate between a lytic and a lysogenic infection. 12.2.4 Identify useful applications of and diseases caused by viruses. 12.2.5 Model the spread of COVID-19. 12.2.6 Evaluate responses to the spread of COVID-19. <u>BWS</u> Modeling (evaluate)	Teacher Edition • Mini Lab: <i>Mapping Outbreaks</i> • Case Study: <i>Vials of Terror</i> (p. 269) • Case Study: <i>Comparing COVID-19 Cases</i> (p. 273) • Section 12.2 Review Answers Materials • plague mask image	BJU Press Trove • Video: <i>Viruses</i> • Chapter 12 Mini Lab Sample Graphs • PPT Pres.: Section 12.2 Slides	Student Edition Section 12.2 Review Assessments Section 12.2 Quiz
Lab 12B One Slick Solution—Oil-Eating Bacteria				
LM 135–42	Analyze data of various chemicals on oil-eating bacteria. Evaluate the effectiveness of bioremediation.			Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 12 Review				
270–73	Classify prokaryotes as archaea or bacteria. Analyze the roles of bacteria in their environments. Compare bacteria and viruses. Assess the effectiveness of various handwashing regimens in preventing bacterial growth. (Lab 12A) Evaluate the growth of oil-eating bacteria in different media. (Lab 12B)	Teacher Edition • Chapter 12 Review Answers		Student Edition Chapter 12 Review
Chapter 12 Test				
	Demonstrate knowledge of concepts from Chapter 12 by taking the test.		BJU Press Trove • EV: Chapter 12 Test Bank	Assessments Chapter 12 Test

Chapter 13: Protists and Fungi (Key)

PPT Pres. PowerPoint Presentation LM Lab Manual TLM Teacher Lab Manual EV ExamView

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
13.1 Kingdom Protozoa				
275–81	13.1.1 Explain kingdom Protozoa’s place in classification. 13.1.2 Describe the structures and movements of common protozoans. 13.1.3 Explain the ways that protozoans reproduce. 13.1.4 Explain a protozoan’s function in its environment. 13.1.5 Respond to the evolutionary claim that multicellular organisms came from unicellular protists. BWS Foundations (formulate)	Teacher Edition <ul style="list-style-type: none"> • Case Study: <i>African Sleeping Sickness</i> (p. 295) • Section 13.1 Review Answers 	BJU Press Trove* <ul style="list-style-type: none"> • Link: <i>Theory of Endosymbiosis</i> • Link: <i>Endosymbiosis</i> • PPT Pres.: Section 13.1 Slides 	Student Edition Section 13.1 Review Assessments Section 13.1 Quiz
Lab 13A Wee, Watery World—Exploring the Microscopic World of Protozoans				
LM 143–50	Compare various protozoans and protozoan phyla. Identify examples of protists in pond water.			Lab Manual Lab Report
13.2 Kingdom Chromista				
281–84	13.2.1 Compare kingdoms Protozoa and Chromista. 13.2.2 Describe the structures and reproduction of chromists. 13.2.3 Describe how chromists contribute to life on Earth.	Teacher Edition <ul style="list-style-type: none"> • Mini Lab: <i>Managing Algae Growth</i> (p. 285) • Case Study: <i>HAB Alert</i> (p. 295) • Section 13.2 Review Answers Materials <ul style="list-style-type: none"> • test tubes (4) • organic chlorella powder (1 tsp) • water, distilled (½ cup) • chlorine (1 cup) • pipettes, disposable, 5 mL (2) 	BJU Press Trove <ul style="list-style-type: none"> • PPT Pres.: Section 13.2 Slides 	Student Edition Section 13.2 Review Assessments Section 13.2 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
13.3 Kingdom Fungi				
286–92	13.3.1 Compare protists and fungi. 13.3.2 Describe the structures and reproduction of fungi. 13.3.3 Label the parts of a mushroom. 13.3.4 Explain the relationship of algae and fungi in lichens. 13.3.5 Suggest both beneficial and harmful ways that fungi interact with the environment.	Teacher Edition <ul style="list-style-type: none"> Case Study: <i>Fighting Malaria with a Fungus</i> Section 13.3 Review Answers Materials <ul style="list-style-type: none"> highlighters (2 colors) 	BJU Press Trove <ul style="list-style-type: none"> Link: <i>Something Is Growing on Me</i> PPT Pres.: Section 13.3 Slides 	Student Edition Section 13.3 Review Assessments Section 13.3 Quiz
Lab 13B Fun with Fungi—Observing Fungi				
LM 151–56	Identify and describe fungal structures. Differentiate among the three phyla of fungi. Compare fungi with other organisms.			Lab Manual Lab Report
Chapter 13 Review				
293–95	Classify protists and fungi on the basis of their characteristics. Explain the roles of protists and fungi in the environment. Analyze the structures and movement of protozoans. (Lab 13A) Analyze the structures used in classifying fungi. (Lab 13B)	Teacher Edition <ul style="list-style-type: none"> Chapter 13 Review Answers 		Student Edition Chapter 13 Review
Chapter 13 Test				
	Demonstrate knowledge of concepts from Chapter 13 by taking the test.		BJU Press Trove <ul style="list-style-type: none"> EV: Chapter 13 Test Bank 	Assessments Chapter 13 Test

Chapter 14: Plant Classification and Structure (Key)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
14.1 Kingdom Plantae				
297–99	14.1.1 Differentiate plants from other organisms. 14.1.2 Differentiate between the four types of plants. 14.1.3 Relate plant size to tissue type.	Teacher Edition • Section 14.1 Review Answers Materials • living stone plant (<i>Lithops</i> spp.) • plants, variety (optional)	BJU Press Trove* • PPT Pres.: Section 14.1 Slides	Student Edition Section 14.1 Review Assessments Section 14.1 Quiz
Lab 14A Name That Plant—Identifying Plants				
LM 157–61	Identify plants using a field guide. Categorize plants as seedless vascular, nonvascular, gymnosperms, dicot angiosperms, or monocot angiosperms. Classify leaves as one of five types. Develop a personal field journal.			Lab Manual Lab Report
14.2 The Structure of Plants				
300–308	14.2.1 Relate the different types of plant cells and tissues to their function in plant organs. 14.2.2 Analyze the structure of leaves, stems, and roots. 14.2.3 Explain the function of leaves, stems, and roots.	Teacher Edition • Case Study: <i>Redwood Roots</i> • Mini Lab: <i>Using Plant Parts</i> • Section 14.2 Review Answers Materials • leaf collection • microscope(s) • prepared slides: leaf cross-section, monocot and dicot stem cross-sections, herbaceous and woody stem cross-sections, onion root cross-section, onion root longitudinal section • tree trunk slice • hand lens • vocabulary flash card set	BJU Press Trove • PPT Pres.: Section 14.2 Slides	Student Edition Section 14.2 Review Assessments Section 14.2 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
14.3 The Life Cycles of Plants				
309–19	14.3.1 Describe the life cycles of bryophytes and ferns. 14.3.2 Compare gymnosperm and angiosperm reproduction. 14.3.3 Diagram the structure of a flower. 14.3.4 Diagram the structure of a seed. 14.3.5 Create a flow chart that illustrates the life cycle of an angiosperm. 14.3.6 Respond to the claim that since God created plants, we have the liberty to use them as we choose. BWS Design (formulate)	Teacher Edition <ul style="list-style-type: none"> Case Study: <i>Cannabis—The Good and the Bad</i> (p. 323) Section 14.3 Review Answers Materials <ul style="list-style-type: none"> preserved fern frond with sori pinecones (variety) 	BJU Press Trove <ul style="list-style-type: none"> Video: <i>Alternation of Generations</i> PPT Pres.: Section 14.3 Slides 	Student Edition Section 14.3 Review Assessments Section 14.3 Quiz
Lab 14B A Fruitful Lab—Exploring Flowers, Fruits, and Seeds				
LM 163–69	Identify and describe various structures of flowers. Identify and describe various types of fruits. Compare various kinds of flowers and fruits. Identify the parts of a seed.			Lab Manual Lab Report
Chapter 14 Review				
320–23	Explain how plants are classified. Analyze plant structure. Compare modes of plant reproduction. Create a field journal for collecting and identifying plant specimens. (Lab 14A) Observe the reproductive structures of flowering plants. (Lab 14B)	Teacher Edition <ul style="list-style-type: none"> Chapter 14 Review Answers 		Student Edition Chapter 14 Review
Chapter 14 Test				
	Demonstrate knowledge of concepts from Chapter 14 by taking the test.		BJU Press Trove <ul style="list-style-type: none"> EV: Chapter 14 Test Bank 	Assessment Chapter 14 Test

Chapter 15: Plant Processes (Key)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
15.1 Transporting Nutrients				
325–28	15.1.1 Summarize the theories for the movement of sap throughout a plant. 15.1.2 Trace the path of water and minerals through a plant. 15.1.3 Explain how nutrients from the soil enter a plant. 15.1.4 Apply the models of sap flow.	Teacher Edition <ul style="list-style-type: none"> • Instructional Aid: <i>Tissue Function and Flow Anticipation Guide</i> • Section 15.1 Review Answers Materials <ul style="list-style-type: none"> • large mixing bowl (glass or other transparent material) • food coloring • capillary tube or thin, clear straw • butcher paper (roll) 	BJU Press Trove* <ul style="list-style-type: none"> • Instructional Aid: <i>Tissue Function and Flow Anticipation Guide</i> • PPT Pres.: Section 15.1 Slides 	Student Edition Section 15.1 Review Teacher Edition Formative Assessment: <i>Transporting Nutrients</i> Assessments Section 15.1 Quiz
15.2 Plant Responses				
329–34	15.2.1 Explain the effects that different hormones have on plants. 15.2.2 Relate plant growth to different stimuli in the environment. 15.2.3 Describe the different ways that light affects plants.	Teacher Edition <ul style="list-style-type: none"> • Mini Lab: <i>Demonstrating a Plant Response</i> • Section 15.2 Review Answers Materials <ul style="list-style-type: none"> • Venus flytrap • thin pins (2) 	BJU Press Trove <ul style="list-style-type: none"> • Link: <i>Phototropism Time Lapse</i> • Link: <i>Gravitropism Time Lapse</i> • Link: <i>Thigmotropism Time Lapse</i> • Video: <i>Tropisms</i> • PPT Pres.: Section 15.2 Slides 	Student Edition Section 15.2 Review Assessments Section 15.2 Quiz
Lab 15A Plant Processes—Investigating Plant Hormones and Responses				
LM 171–74	Explain the difference in starch and sugar contents of ripe and unripe bananas. Explain the role of ethylene gas in the ripening of bananas. Explain how the Yang Cycle can be interpreted as evidence for a creationist worldview.			Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
15.3 Using Plants Wisely				
335–39	<p>15.3.1 Describe the different ways that plants can be produced vegetatively.</p> <p>15.3.2 List several ways that people use plants.</p> <p>15.3.3 Explain the importance of plants to biogeochemical cycles.</p> <p>15.3.4 Formulate a position on genetic enhancements in food crops using the biblical ethics triad. BWS Ethics (formulate)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> Worldview Investigation: <i>Going Bananas</i> Case Study: <i>Soil Erosion</i> (p. 342) Ethics: <i>Genetically Modified Foods</i> (p. 343) Section 15.3 Review Answers 	<p>BJU Press Trove</p> <ul style="list-style-type: none"> Link: <i>Panama Disease</i> Instructional Aid: Worldview Investigation Rubric Video: <i>GMO Foods</i> PPT Pres.: Section 15.3 Slides 	<p>Student Edition Section 15.3 Review</p> <p>Teacher Edition Worldview Investigation Rubric (Appendix F)</p> <p>Assessments Section 15.3 Quiz</p>
Ethics Day				
343	15.3.4 Formulate a position on genetic enhancements in food crops using the biblical ethics triad.	<p>Teacher Edition</p> <ul style="list-style-type: none"> Ethics: <i>Genetically Modified Foods</i> 	<p>BJU Press Trove</p> <ul style="list-style-type: none"> Instructional Aid: Ethics Essay Rubric 	<p>Teacher Edition Ethics Essay Rubric (Appendix G)</p>
Lab 15B Too Salty?—Experimentation and the Flood				
LM 175–79	<p>Describe the parts of a scientific paper.</p> <p>Evaluate the effects of salt water on seed germination.</p> <p>Write a lab report in the style of a scientific paper.</p>			<p>Lab Manual Lab Report</p>
Chapter 15 Review				
340–43	<p>Describe how plants accomplish internal transport.</p> <p>Trace the flow of nutrients in a vascular plant.</p> <p>Describe the various responses of plants to internal and external stimuli.</p> <p>Explain the role of plants in the environment.</p> <p>Analyze the effects of ethylene gas used in the ripening process of bananas. (Lab 15A)</p> <p>Create a lab report in standard scientific paper format. (Lab 15B)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> Chapter 15 Review Answers 		<p>Student Edition Chapter 15 Review</p>
Chapter 15 Test				
	Demonstrate knowledge of concepts from Chapter 15 by taking the test.		<p>BJU Press Trove</p> <ul style="list-style-type: none"> EV: Chapter 15 Test Bank 	<p>Assessments Chapter 15 Test</p>

Chapter 16: Invertebrates (Key)

PPT Pres. PowerPoint Presentation LM Lab Manual TLM Teacher Lab Manual EV ExamView

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
16.1 Kingdom Animalia				
347–54	16.1.1 Describe the general characteristics of all animals. 16.1.2 Compare the body systems of different groups of animals. 16.1.3 Compare endotherms and ectotherms. 16.1.4 Describe the different kinds of sexual reproduction in animals. 16.1.5 Identify different responses that animals have to their environments, including their social behaviors.	Teacher Edition <ul style="list-style-type: none"> • Mini Lab: <i>Identifying Animals</i> • Section 16.1 Review Answers Materials <ul style="list-style-type: none"> • preserved specimens • hand lens 	BJU Press Trove* <ul style="list-style-type: none"> • Video: <i>Animals</i> • Video: <i>Descent or Design?</i> • PPT Pres.: Section 16.1 Slides 	Student Edition Section 16.1 Review Assessments Section 16.1 Quiz
16.2 Sponges and Cnidarians				
355–60	16.2.1 Describe the general characteristics of sponges and cnidarians. 16.2.2 Explain how sponges and cnidarians feed and reproduce. 16.2.3 Explain the role of sponges and cnidarians in their environments.	Teacher Edition <ul style="list-style-type: none"> • Section 16.2 Review Answers Materials <ul style="list-style-type: none"> • natural sponges (3 per group) • artificial sponge (1 per group) 	BJU Press Trove <ul style="list-style-type: none"> • Invertebrate Characteristics Chart • PPT Pres.: Section 16.2 Slides 	Student Edition Section 16.2 Review Assessments Section 16.2 Quiz
Lab 16A The Immortals Next Door—Investigating Hydras				
LM 181–86	Describe the structure of a hydra. Describe the responses of living hydras to various stimuli. Explain the role of hydras in current medical research.			Lab Manual Lab Report
16.3 Worms				
361–64	16.3.1 Differentiate between flatworms, roundworms, and segmented worms. 16.3.2 Describe the general characteristics of worms. 16.3.3 Explain how the three phyla of worms feed and reproduce. 16.3.4 Give examples of how we can manage and use worm populations in the environment. BWS (Design: formulate)	Teacher Edition <ul style="list-style-type: none"> • Case Study: <i>Guinea Worm</i> • Section 16.3 Review Answers Materials <ul style="list-style-type: none"> • preserved worms (<i>Ascaris</i>, earthworm, bloodworm) • dissection pan • dissection tools 	BJU Press Trove <ul style="list-style-type: none"> • Video: <i>Pompeii Worms</i> • PPT Pres.: Section 16.3 Slides 	Student Edition Section 16.3 Review Assessments Section 16.3 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Lab 16B Fish Tank Fiend!—Investigating Planarians				
LM 187–90	Describe the motion of planarians. Describe the responses of planarians to various stimuli. Describe the structure and special characteristics of planarians. Compare planarians with previously studied organisms.			Lab Manual Lab Report
16.4 Mollusks				
365–67	16.4.1 Describe the general characteristics of mollusks. 16.4.2 Differentiate between bivalves, gastropods, and cephalopods. 16.4.3 Explain how mollusks reproduce. 16.4.4 Give examples of how mollusks interact with their environments.	Teacher Edition • Section 16.4 Review Answers Materials • cuttlebone • snail shell • citrus zester • small citrus fruit • mini suction cup pad	BJU Press Trove • PPT Pres.: Section 16.4 Slides	Student Edition Section 16.4 Review Teacher Edition Formative Assessment: <i>Recalling Mollusk Structure</i> Assessments Section 16.4 Quiz
16.5 Echinoderms				
368–71	16.5.1 Describe the general characteristics of echinoderms. 16.5.2 Compare the five classes of echinoderms. 16.5.3 Explain how echinoderms reproduce. 16.5.4 Give examples of how echinoderms interact with their environments.	Teacher Edition • Section 16.5 Review Answers Materials • preserved sea star • 3 × 5 note cards (5 per student)	BJU Press Trove • PPT Pres.: Section 16.5 Slides	Student Edition Section 16.5 Review Assessments Section 16.5 Quiz
Chapter 16 Review				
372–75	Describe the characteristics of animals. Compare sponges, cnidarians, worms, mollusks, and echinoderms. Classify animals according to characteristics. Describe interactions of animals in their environments. Describe the structure and responses of hydras. (Lab 16A) Describe the structure and responses of planarians. (Lab 16B)	Teacher Edition • Chapter 16 Review Answers		Student Edition Chapter 16 Review
Chapter 16 Test				
	Demonstrate knowledge of concepts from Chapter 16 by taking the test.		BJU Press Trove • EV: Chapter 16 Test Bank	Assessment Chapter 16 Test

Chapter 17: Arthropods (Key)

PPT Pres. PowerPoint Presentation LM Lab Manual TLM Teacher Lab Manual EV ExamView

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
17.1 Arthropod Introduction and Chelicerates				
377–84	17.1.1 Describe the general characteristics of arthropods. 17.1.2 List the general characteristics of chelicerates. 17.1.3 Explain how chelicerates feed and reproduce. 17.1.4 Describe the role of chelicerates in their environment.	Teacher Edition • Mini Lab: <i>Discovering Arthropods</i> • Section 17.1 Review Answers Materials • notebook • pencil • insect collection containers • natural area	BJU Press Trove* • Video: <i>Arthropods</i> • PPT Pres.: Section 17.1 Slides	Student Edition Section 17.1 Review Teacher Edition Formative Assessment: <i>Chelicerate Features</i> Assessments Section 17.1 Quiz
17.2 Crustaceans				
384–87	17.2.1 Differentiate crustaceans from other arthropods. 17.2.2 Describe how crustaceans feed and reproduce. 17.2.3 Explain how crustaceans exert influence on their environment.	Teacher Edition • Section 17.2 Review Answers	BJU Press Trove • Link: <i>Krill</i> • PPT Pres.: Section 17.2 Slides	Student Edition Section 17.2 Review Assessments Section 17.2 Quiz
Lab 17A Take a Crack at Crayfish—Dissecting a Crayfish				
LM 191–98	Locate typical arthropod structures in a crayfish. Identify the variety of appendages on a crayfish. Identify the specialized internal parts of a crayfish.			Lab Manual Lab Report
17.3 Insects				
388–94	17.3.1 Describe the general characteristics of insects. 17.3.2 Explain how insects feed and reproduce. 17.3.3 Analyze ways to manage insects. <u>BWS</u> Ethics (formulate)	Teacher Edition • Case Study: <i>Sailor Bug</i> • Case Study: <i>Trends in Honeybee Colonies</i> (p. 397) • Section 17.3 Review Answers Materials • insect specimens showing stages of metamorphosis	BJU Press Trove • Link: <i>A World without Bugs</i> • Link: <i>Forensic Entomology</i> • PPT Pres.: Section 17.3 Slides	Student Edition Section 17.3 Review Assessments Section 17.3 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Lab 17B Cricket Caper—Inquiring into House Crickets				
LM 199–200	Develop a testable hypothesis regarding cricket behavior. Design and successfully carry out an experiment to test a hypothesis. Report findings in the form of a scientific paper.			Lab Manual Lab Report
Chapter 17 Review				
395–97	Compare the general characteristics of chelicerates, crustaceans, and insects. Explain how chelicerates, crustaceans, and insects feed and reproduce. Describe the roles of chelicerates, crustaceans, and insects in their environments. Lab 17A: Differentiate between the different structures within crayfish. Lab 17B: Develop an experiment on cricket behavior using scientific inquiry.	Teacher Edition • Chapter 17 Review Answers		Student Edition Chapter 17 Review
Chapter 17 Test				
	Demonstrate knowledge of concepts from Chapter 17 by taking the test.		BJU Press Trove • EV: Chapter 17 Test Bank	Assessments Chapter 17 Test

Chapter 18: Ectothermic Vertebrates (Key)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
18.1 Chordate Introduction and Fish				
399–406	18.1.1 Describe the general characteristics of chordates. 18.1.2 Compare the classes of fish. 18.1.3 Trace the flow of oxygen through the circulatory system of a bony fish. 18.1.4 Identify the major organs of a bony fish's body systems. 18.1.5 Describe the role of fish in their environment.	Teacher Edition • Mini Lab: <i>New Tank Syndrome</i> (p. 407) • Section 18.1 Review Answers Materials • image of adult tunicate • image of lancelet • diagram of fish jaw evolution	BJU Press Trove* • Video: <i>Mexican Tetras</i> • PPT Pres.: Section 18.1 Slides	Student Edition Section 18.1 Review Assessments Section 18.1 Quiz
Lab 18A Something Fishy Going On—Observing Bony Fish				
LM 201–6	Describe the external features of a fish. Describe the behavior of a fish, especially with regard to its interactions with its environment and with other fish. Discuss the ethics of fishkeeping as a hobby from a biblical worldview.			Lab Manual Lab Report
18.2 Amphibians				
409–13	18.2.1 Describe the general characteristics of amphibians. 18.2.2 Compare the different orders of amphibians. 18.2.3 Identify the major organs of a frog's body systems. 18.2.4 Describe amphibian reproduction. 18.2.5 Explain how amphibians can be conserved. BWS Ethics (formulate)	Teacher Edition • Section 18.2 Review Answers	BJU Press Trove • PPT Pres.: Section 18.2 Slides	Student Edition Section 18.2 Review Assessments Section 18.2 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
18.3 Reptiles				
414–21	18.3.1 Describe the structures of an amniotic egg and their functions. 18.3.2 Compare the orders of reptiles. 18.3.3 Identify the major organs within reptilian body systems.	Teacher Edition <ul style="list-style-type: none"> Case Study: <i>Those Terrible Lizards</i> Case Study: <i>Indicator Species</i> (p. 425) Section 18.3 Review Answers Materials <ul style="list-style-type: none"> three signs, one each labeled <i>Amphibians</i>, <i>Reptiles</i>, and <i>Both</i> 	BJU Press Trove <ul style="list-style-type: none"> Video: <i>Leatherback Sea Turtles</i> PPT Pres.: Section 18.3 Slides 	Student Edition Section 18.3 Review Teacher Edition Formative Assessment: <i>Amphibian or Reptile?</i> Assessments Section 18.3 Quiz
Lab 18B Reptile Repasts—Inquiring into Reptile Methods of Locating Prey				
LM 207–8	Develop a testable hypothesis regarding a lizard's ability to detect food. Design an experiment to test a hypothesis. Report findings in the form of a scientific paper.			Teacher Lab Manual Grading Formal Lab Reports Rubric
Chapter 18 Review				
422–25	Describe the characteristics of chordates. Differentiate between fish, amphibians, and reptiles. Describe the structures and reproduction of fish, amphibians, and reptiles. Describe the external features and behavior of a bony fish. (Lab 18A) Design and carry out an experiment to test a hypothesis regarding a lizard's ability to detect food. (Lab 18B)	Teacher Edition <ul style="list-style-type: none"> Chapter 18 Review Answers 		Student Edition Chapter 18 Review
Chapter 18 Test				
	Demonstrate knowledge of concepts from Chapter 18 by taking the test.		BJU Press Trove <ul style="list-style-type: none"> EV: Chapter 18 Test Bank 	Assessment Chapter 18 Test

Chapter 19: Endothermic Vertebrates (Key)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
19.1 Birds				
427–36	19.1.1 Describe the general characteristics of birds. 19.1.2 Describe the major organs of the circulatory, nervous, digestive, excretory, and reproductive systems of birds. 19.1.3 Defend the claim that birds are designed for flight. <u>BWS</u> Design (formulate) 19.1.4 Relate birds' beaks, wings, and feet to their environments. 19.1.5 Describe the interactions of birds in their environments.	Teacher Edition • Case Study: <i>California Condor</i> • Section 19.1 Review Answers Materials • feathers (contour and down) • microscope	BJU Press Trove* • Video: <i>Macaws</i> • Video: <i>Bar-Tailed Godwits</i> • Link: <i>Migration</i> • Link: <i>How Does an Owl Fly So Silently?</i> • Link: <i>Wonders of Flight</i> • Link: <i>Audubon Migration Map</i> • PPT Pres.: Section 19.1 Slides	Student Edition Section 19.1 Review Assessments Section 19.1 Quiz
Lab 19A Our Fine, Feathered Friends—Creating a Bird Log				
LM 209–13	Estimate the number of birds in an area. Estimate the diversity of birds in an area. Estimate the relative abundance of each species of bird in a particular area.			Lab Manual Lab Report
19.2 Mammals				
437–46	19.2.1 Describe the general characteristics of mammals. 19.2.2 Identify the major organs of the circulatory, nervous, digestive, excretory, and reproductive systems of mammals. 19.2.3 Compare the reproduction strategies of eutherians, monotremes, and marsupials. 19.2.4 Compare the major orders of mammals. 19.2.5 Describe the interactions of mammals in their environments. 19.2.6 Formulate a position on the use of evolutionary ecological studies. <u>BWS</u> Foundations (formulate)	Teacher Edition • Mini Lab: <i>Comparing Uric Acid and Urea</i> • Section 19.2 Review Answers Materials • urea, 4 g • uric acid, 4 g • water, distilled, 60 mL • test tubes (2) • graduated cylinder • stirring rod, glass • balance	BJU Press Trove • PPT Pres.: Section 19.2 Slides	Student Edition Section 19.2 Review Assessments Section 19.2 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Lab 19B Warming up to Research—Doing Preliminary Research				
LM 215–16	Conduct preliminary research on a particular scientific question. Write a testable hypothesis on the basis of preliminary research.			Lab Manual Lab Report
Chapter 19 Review				
447–49	Describe the structures and characteristics of birds and mammals. Compare the orders of endothermic vertebrates. Explain how birds and mammals interact with their environments. Evaluate the diversity and population of bird species within a particular location. (Lab 19A) Formulate a testable hypothesis after conducting preliminary research on a scientific question. (Lab 19B)	Teacher Edition • Chapter 19 Review Answers		Student Edition Chapter 19 Review
Chapter 19 Test				
	Demonstrate knowledge of concepts from Chapter 19 by taking the test.		BJU Press Trove • EV: Chapter 19 Test Bank	Assessments Chapter 19 Test

Chapter 20: Protection (Enrichment)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
20.1 The Study of You				
453–58	20.1.1 Compare humans with other living things. BWS Design (explain) 20.1.2 Differentiate between the kinds of tissues found in the human body. 20.1.3 Summarize the function of each system in the human body. 20.1.4 Evaluate how believers should view the study of the body. BWS Foundations (evaluate)	Teacher Edition • Section 20.1 Review Answers	BJU Press Trove* • Video: <i>Human Body</i> • PPT Pres.: Section 20.1 Slides	Student Edition Section 20.1 Review Assessments Section 20.1 Quiz
20.2 The Integumentary System				
459–63	20.2.1 Describe the structure of the integumentary system. 20.2.2 Explain the functions of skin. 20.2.3 Explain how each body system presents itself in skin.	Teacher Edition • Mini Lab: <i>Skin Tone</i> • Section 20.2 Review Answers	BJU Press Trove • PPT Pres.: Section 20.2 Slides	Student Edition Section 20.2 Review Teacher Edition Formative Assessment: <i>Layers of the Skin</i> Assessments Section 20.2 Quiz
Lab 20A Chill Out!—Inquiring Into the Skin’s Ability to Maintain Homeostasis				
LM 217–18	Formulate a hypothesis regarding the ability of different areas of the skin to recover temperature. Design an experiment to test a hypothesis. Present findings in a scientific paper or other form of presentation.	Teacher Lab Manual • Chapter 20 Teacher Guide		Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
20.3 The Lymphatic System and Immunity				
464–69	<p>20.3.1 Describe the structures and function of the lymphatic system.</p> <p>20.3.2 Compare passive and active immunity.</p> <p>20.3.3 Summarize how lymph travels through the different systems of the body.</p> <p>20.3.4 Differentiate between cell-mediated immunity and humoral immunity.</p> <p>20.3.5 Explain the role of the lymphatic system in immunity and homeostasis.</p> <p>20.3.6 Analyze the use of puberty blockers using the principles of bioethics. BWS Ethics (evaluate)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Case Study: <i>Smallpox</i> (p. 473) • Ethics: <i>Puberty Blockers</i> (pp. 474–75) • Section 20.3 Review Answers 	<p>BJU Press Trove</p> <ul style="list-style-type: none"> • Video: <i>Immunity</i> • Video: <i>Puberty Blockers</i> • PPT Pres.: Section 20.3 Slides 	<p>Student Edition</p> <p>Section 20.3 Review</p> <p>Assessments</p> <p>Section 20.3 Quiz</p>
Ethics Day				
	<p>20.3.6 Analyze the use of puberty blockers using the principles of bioethics. BWS Ethics (evaluate)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Ethics: <i>Puberty Blockers</i> 		
Lab 20B Are You Aware?—A Case Study in Advocacy				
LM 219–21	<p>Give a biblical justification for advancing the study and treatment of diseases.</p> <p>Identify some of the characteristics and limitations of health awareness campaigns.</p> <p>Prioritize the giving of time and money to charitable causes on the basis of a biblical worldview.</p>			<p>Lab Manual</p> <p>Lab Report</p>
Chapter 20 Review				
470–75	<p>Compare the organ systems in the human body.</p> <p>Describe the structures and function of the integumentary system.</p> <p>Explain the role of the lymphatic system in protecting the body.</p> <p>Design and run an experiment to test a hypothesis related to the skin's ability to maintain homeostasis. (Lab 20A)</p> <p>Formulate a position on the giving of time and resources to charitable causes related to health care from a biblical worldview. (Lab 20B)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Chapter 20 Review Answers 		<p>Student Edition</p> <p>Chapter 20 Review</p>

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 20 Test				
	Demonstrate knowledge of concepts from Chapter 20 by taking the test.		BJU Press Trove • EV: <i>Chapter 20 Test Bank</i>	Assessment Chapter 20 Test

Chapter 21: Support and Movement (Enrichment)

PPT Pres. PowerPoint Presentation LM Lab Manual TLM Teacher Lab Manual EV ExamView

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
21.1 The Skeletal System				
477–81	21.1.1 Differentiate between the axial and appendicular skeletons. 21.1.2 Describe the structure of a bone. 21.1.3 Relate the different joint structures to their movements. 21.1.4 Explain how a bone forms and is remodeled. 21.1.5 Explain the role of the skeletal system in the human body.	Teacher Edition <ul style="list-style-type: none"> • Case Study: <i>Bone Density</i> (p. 491) • Section 21.1 Review Answers Materials <ul style="list-style-type: none"> • egg whites (4–6) • clear bowl or jar • spoon or glass stirring rod • model building material (optional) 	BJU Press Trove* <ul style="list-style-type: none"> • Link: <i>Whack a Bone</i> • Link: <i>Bone Biology</i> • PPT Pres.: Section 21.1 Slides 	Student Edition Section 21.1 Review Assessments Section 21.1 Quiz
Lab 21A Dry Bones—Exploring the Skeletal System				
LM 223–26	Identify the microstructures and macrostructures of the skeletal system. Name the various bones and joints of the human body.			Lab Manual Lab Report
21.2 The Muscular System				
482–88	21.2.1 Relate the main muscles of the muscular system to their size, shape, function, origin, and location. 21.2.2 Describe the three kinds of muscles and their roles. 21.2.3 Summarize the process of muscle movement on the cellular level. 21.2.4 Explain the role of the muscular system in the human body.	Teacher Edition <ul style="list-style-type: none"> • Mini Lab: <i>Muscle Trick</i> • Section 21.2 Review Answers Materials <ul style="list-style-type: none"> • doorway • prepared muscle slides (skeletal, smooth, cardiac) • timer 	BJU Press Trove <ul style="list-style-type: none"> • Link: <i>Poke a Muscle</i> • Video: <i>Muscle Movement</i> • PPT Pres.: Section 21.2 Slides 	Student Edition Section 21.2 Review Assessments Section 21.2 Quiz
Lab 21B I'm So Tired—Investigating Muscular Function				
LM 227–31	Explain muscle fatigue. Explain how muscle fatigue affects muscular function. Describe how temperature affects muscular function.			Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 21 Review				
489–91	Relate the structures of the skeletal and muscular systems to each other. Relate the function of the skeletal and muscular systems to their roles in the human body. Identify the structures and joints found within the skeletal system. (Lab 21A) Analyze the effects of temperature and fatigue on muscle strength. (Lab 21B)	Teacher Edition • Chapter 21 Review Answers		Student Edition Chapter 21 Review
Chapter 21 Test				
	Demonstrate knowledge of concepts from Chapter 21 by taking the test.		BJU Press Trove • EV: Chapter 21 Test Bank	Assessments Chapter 21 Test

Chapter 22: Transport (Enrichment)

PPT Pres. PowerPoint Presentation LM Lab Manual TLM Teacher Lab Manual EV ExamView

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
22.1 The Respiratory System				
493–98	22.1.1 Describe the structure and function of the respiratory system. 22.1.2 Summarize the process of breathing. 22.1.3 Explain how gas is exchanged in the lungs. 22.1.4 Explain how breathing is controlled.	Teacher Edition • Section 22.1 Review Answers Materials • lung function demonstrator	BJU Press Trove* • PPT Pres.: Section 22.1 Slides	Student Edition Section 22.1 Review Assessments Section 22.1 Quiz
Lab 22A Relax and Take a Deep Breath—Exploring the Human Respiratory System				
LM 233–38	Measure lung capacity. Differentiate between tidal volume, reserve volume, and vital capacity. Describe the sounds made by different parts of the respiratory system. Identify the structures of the respiratory system.			Lab Manual Lab Report
22.2 The Circulatory System				
499–506	22.2.1 Describe the structure and function of the circulatory system. 22.2.2 Differentiate between the flow of blood through an artery and through a vein. 22.2.3 Trace the flow of oxygen and carbon dioxide through the circulatory system. 22.2.4 Differentiate between systemic and pulmonary circulation.	Teacher Edition • Mini Lab: <i>Heart Rate</i> • Case Study: <i>Vaping</i> • Case Study: <i>The EKG</i> (p. 509) • Section 22.2 Review Answers Materials • blood smear (image or prepared slide) • small piece of clay • toothpick • stopwatch • circulatory system signs	BJU Press Trove • Video: <i>Circulation</i> • PPT Pres.: Section 22.2 Slides	Student Edition Section 22.2 Review Assessments Section 22.2 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Lab 22B Feeling the Pressure—Investigating Blood Pressure and Hypertension				
LM 239–42	<p>Take a blood pressure reading.</p> <p>Explain what the numbers in a blood pressure reading indicate.</p> <p>Explain the relationship between hypertension and stroke.</p> <p>List some risk factors for hypertension.</p> <p>Explain why Christians should be concerned about maintaining healthy blood pressure.</p>			<p>Lab Manual</p> <p>Lab Report</p>
Chapter 22 Review				
507–9	<p>Describe how the respiratory and circulatory systems work as transportation systems.</p> <p>Explain how gas exchange occurs during respiration.</p> <p>Relate the parts of the heart to the flow of blood.</p> <p>Evaluate human lung capacity. (Lab 22A)</p> <p>Investigate the relationship between hypertension and increased health risks. (Lab 22B)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Chapter 22 Review Answers 		<p>Student Edition</p> <p>Chapter 22 Review</p>
Chapter 22 Test				
	<p>Demonstrate knowledge of concepts from Chapter 22 by taking the test.</p>		<p>BJU Press Trove</p> <ul style="list-style-type: none"> • EV: Chapter 22 Test Bank 	<p>Assessments</p> <p>Chapter 22 Test</p>

Chapter 23: Energy (Enrichment)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
23.1 The Digestive System				
511–19	23.1.1 Relate the structure of the digestive system to the process of digestion. 23.1.2 Describe the roles of the six nutrients that the body needs. 23.1.3 Relate the role of the digestive system to maintaining homeostasis in the human body.	Teacher Edition <ul style="list-style-type: none"> • Mini Lab: <i>Modeling Digestion</i> • Case Study: <i>Exercise</i> • Case Study: <i>Nutrition Facts Labels</i> (p. 525) • Section 23.1 Review Answers Materials <ul style="list-style-type: none"> • aspirin pill, uncoated • aspirin pill, enteric-coated • plastic cups, clear (2) • vinegar, 8 oz • water, 4 oz • baking soda, 6 g • salt • snack foods, assorted, with nutrition labels 	BJU Press Trove* <ul style="list-style-type: none"> • Video: <i>Human Digestion</i> • PPT Pres.: Section 23.1 Slides 	Student Edition Section 23.1 Review Assessments Section 23.1 Quiz
Lab 23A Calorimetry in a Can—Measuring the Energy in Food				
LM 243–46	Calculate the energy content of snack foods using data obtained from a soda can calorimeter. Compare the energy densities of different snack foods. Evaluate the accuracy of a soda can calorimeter.			Lab Manual Lab Report
23.2 The Urinary System				
520–23	23.2.1 Describe the structure and function of the organs in the urinary system. 23.2.2 Explain how the kidneys filter and recycle the materials in excretion. 23.2.3 Describe the organs from other body systems that are involved in excretion. 23.2.4 Explain why drinking water helps the body maintain homeostasis. 23.2.5 Analyze the use of artificial nutrition and hydration using the principles of bioethics. BWS Ethics (evaluate)	Teacher Edition <ul style="list-style-type: none"> • Ethics: <i>Artificial Nutrition and Hydration</i> (pp. 526–27) • Section 23.2 Review Answers 	BJU Press Trove <ul style="list-style-type: none"> • Video: <i>Artificial Nutrition</i> • PPT Pres.: Section 23.2 Slides 	Student Edition Section 23.2 Review Assessments Section 23.2 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Ethics Day				
526–27	23.2.5 Analyze the use of artificial nutrition and hydration using the principles of bioethics. BWS Ethics (evaluate)	Teacher Edition • Ethics: <i>Artificial Nutrition and Hydration</i>	BJU Press Trove • Video: <i>Artificial Nutrition</i> • Instructional Aid: Ethics Essay Rubric	Teacher Edition Ethics Essay Rubric (Appendix G)
Lab 23B What a Waste!—Modeling Dialysis				
LM 247–50	Determine what kinds of solutes do and do not pass through a semipermeable membrane. Describe how the kidneys employ dialysis to remove wastes from the blood.			Lab Manual Lab Report
Chapter 23 Review				
524–27	Describe the structures and processes involved in the digestive and urinary systems. Relate the function of the digestive system to nutrition. Explain how the urinary system removes waste from the body. Evaluate the amount of energy contained in a variety of snack foods. (Lab 23A) Analyze the ability of solutes to pass through semipermeable membranes. (Lab 23B)	Teacher Edition • Chapter 23 Review Answers		Student Edition Chapter 23 Review
Chapter 23 Test				
	Demonstrate knowledge of concepts from Chapter 23 by taking the test.		BJU Press Trove • EV: Chapter 23 Test Bank	Assessments Chapter 23 Test

Chapter 24: Communication (Enrichment)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
24.1 The Nervous System				
529–37	24.1.1 Describe the structure and function of the nervous system. 24.1.2 Relate the central nervous system and the peripheral nervous system. 24.1.3 Describe the parts of the brain. 24.1.4 Trace the movement of a nerve impulse through a neuron. 24.1.5 Explain how neurons transmit information. 24.1.6 Analyze the role of the nervous system in the human body.	Teacher Edition • Mini Lab: <i>Reaction Time</i> • Section 24.1 Review Answers Materials • any video about how nerve impulses form and travel • brain model • 8.5 × 11 in. paper sheets (3), one crumpled • computer with internet access	BJU Press Trove* • Video: <i>Nervous System</i> • PPT Pres.: Section 24.1 Slides	Student Edition Section 24.1 Review Assessments Section 24.1 Quiz
24.2 The Sensory Organs				
538–45	24.2.1 Describe the structure of the sensory organs. 24.2.2 Relate the sensory organs to their functions in the body. 24.2.3 Relate the importance of sensing the world to a person's growth and development.	Teacher Edition • Section 24.2 Review Answers Materials • pair of binoculars	BJU Press Trove • PPT Pres.: Section 24.2 Slides	Student Edition Section 24.2 Review Teacher Edition Formative Assessment: <i>Label It!</i> Assessments Section 24.2 Quiz
Lab 24A Sensational!—Exploring the Sensory Organs				
LM 251–56	Perform simple sensory tests.			Lab Manual Lab Report
24.3 The Endocrine System				
545–50	24.3.1 Differentiate between the speed of the nervous system and that of the endocrine system. 24.3.2 Relate the function of the different glands to the hormones they secrete. 24.3.3 Explain how glands help maintain homeostasis. 24.3.4 Relate hormones to physical and spiritual responses. <u>BWS</u> Ethics (apply)	Teacher Edition • Case Study: <i>Type 2 Diabetes</i> • Section 24.3 Review Answers	BJU Press Trove • PPT Pres.: Section 24.3 Slides	Student Edition Section 24.3 Review Teacher Edition Formative Assessment: <i>Summaries</i> Assessments Section 24.3 Quiz

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Lab 24B Rat Recap—Dissecting a Rat				
LM 257–66	Identify basic mammalian anatomical features. Explain the function of certain rat anatomical structures.			Lab Manual Lab Report
Chapter 24 Review				
551–53	Relate the structures of the nervous system to their functions in the body. Describe the organs responsible for processing sensory information. Analyze the structure and function of the endocrine system in the body. Assess the capabilities of human sensory organs. (Lab 24A) Identify the structures and functions of basic mammalian features. (Lab 24B)	Teacher Edition • Chapter 24 Review Answers		Student Edition Chapter 24 Review
Chapter 24 Test				
	Demonstrate knowledge of concepts from Chapter 24 by taking the test.		BJU Press Trove • EV: Chapter 24 Test Bank	Assessments Chapter 24 Test

Chapter 25: Reproduction, Growth, and Health (Enrichment)

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Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
25.1 The Reproductive System				
555–61	25.1.1 Describe the structure and function of the male and female reproductive organs. 25.1.2 Explain how an ovum is produced, fertilized, and transported from an ovary to the uterus. 25.1.3 Explain how the Fall has affected the culture’s view of love and human sexuality. <u>BWS</u> Design (evaluate)	Teacher Edition <ul style="list-style-type: none"> • Case Study: <i>Sexual Abuse</i> (p. 576) • Section 25.1 Review Answers 	BJU Press Trove* <ul style="list-style-type: none"> • PPT Pres.: Section 25.1 Slides 	Student Edition Section 25.1 Review Assessments Section 25.1 Quiz
25.2 Human Growth and Development				
562–68	25.2.1 Describe the development of an embryo from implantation to birth. 25.2.2 Describe the changes in a person’s body associated with puberty. 25.2.3 Compare the different developmental and growth stages of the body. 25.2.4 Associate the changes in puberty with the function of the endocrine system.	Teacher Edition <ul style="list-style-type: none"> • Case Study: <i>Gender Identity</i> • Section 25.2 Review Answers 	BJU Press Trove <ul style="list-style-type: none"> • Video: <i>Human Body Design</i> • PPT Pres.: Section 25.2 Slides 	Student Edition Section 25.2 Review Assessments Section 25.2 Quiz
Lab 25A Unusual Development—Modeling the Amazing Growth of Robert Wadlow				
LM 267–71	Plot growth rates when given tabular data on height and mass. Make a prediction that is based on extrapolating data. Assess the health of an individual by calculating his or her BMI.			Lab Manual Lab Report

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
25.3 Balanced Living				
569–73	<p>25.3.1 Describe substances that affect the body’s homeostasis.</p> <p>25.3.2 Explain how exercise, sleep, and hygiene are linked to maintaining homeostasis.</p> <p>25.3.3 Relate the importance of mental health and healthy relationships to physical health.</p> <p>25.3.4 Evaluate whether the decisions that people make regarding health are based on God’s Word.</p> <p>25.3.5 Analyze the use of assisted suicide using the biblical ethics triad and the principles of bioethics. BWS Ethics (formulate)</p> <p>25.3.6 Compare and contrast the conclusions, foundation, and logical consequences of the two frameworks of ethics for this issue. BWS Ethics (apply)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Mini Lab: <i>Researching the Impact of Our Thoughts</i> • Ethics: <i>Assisted Suicide</i> (p. 577) • Section 25.3 Review Answers <p>Materials</p> <ul style="list-style-type: none"> • computer with internet access 	<p>BJU Press Trove</p> <ul style="list-style-type: none"> • Video: <i>Assisted Suicide</i> • PPT Pres.: Section 25.3 Slides 	<p>Student Edition</p> <p>Section 25.3 Review</p> <p>Assessments</p> <p>Section 25.3 Quiz</p>
Lab 25B Fast Food Fact-Finding—Exploring the Perception of Fast Food versus Reality				
LM 273–80	<p>Analyze a meal for its nutrient content.</p> <p>Compare the nutrient contents of fast foods to the dietary guidelines provided by the USDA.</p> <p>Self-assess fast food habits.</p>			<p>Lab Manual</p> <p>Lab Report</p>
Ethics Day				
577	<p>25.3.5 Analyze the use of assisted suicide using the biblical ethics triad and the principles of bioethics. BWS Ethics (formulate)</p> <p>25.3.6 Compare and contrast the conclusions, foundation, and logical consequences of the two frameworks of ethics for this issue. BWS Ethics (apply)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Ethics: <i>Assisted Suicide</i> 	<p>BJU Press Trove</p> <ul style="list-style-type: none"> • Instructional Aid: <i>Ethics Essay Rubric</i> 	<p>Teacher Edition</p> <p>Ethics Essay Rubric (Appendix G)</p>
Chapter 25 Review				
574–77	<p>Describe the structure and function of the reproductive system.</p> <p>Describe the stages of human growth.</p> <p>Explain how the body maintains homeostasis.</p> <p>Compare normal growth rate with that of a person with acromegaly. (Lab 25A)</p> <p>Create strategies to maintain healthy eating habits. (Lab 25B)</p>	<p>Teacher Edition</p> <ul style="list-style-type: none"> • Chapter 25 Review Answers 		<p>Student Edition</p> <p>Chapter 25 Review</p>

Pages	Objectives	Printed Resources & Materials	Digital Resources	Assessments
Chapter 25 Test				
	Demonstrate knowledge of concepts from Chapter 25 by taking the test.		BJU Press Trove • EV: Chapter 25 Test Bank	Assessments Chapter 25 Test