

Life Science 5ed Lesson Plan Overview

Section	SE Pages	TE Pages	Teacher Resources	Essential Questions/Content Objectives
UNIT 1: THE PATTERN OF LIFE				
CHAPTER 1: GOD’S LIVING WORLD (10 DAYS) FOUNDATIONAL CHAPTER				
1A Seeing Life Through the Bible’s Story	3–8	2–8	Review 1A: <i>Distinguishing Data from Interpretation</i>	EQ: Why should a Christian study life science? Objectives: 1A1 Define <i>worldview</i> . 1A2 Compare a naturalistic worldview with a biblical worldview. 1A3 Explain the significance of Genesis 1:26–30 as it relates to life science.
Ethics Day	6–8	6–8	Ethics: Looking to the Bible	
1B Understanding Life	8–11	8–11	Link: Combining Forms Activity Review 1B: <i>Describing Life</i>	EQ: Why is life so special? Objectives: 1B1 Give evidence that something is alive using the characteristics of life. 1B2 Illustrate the concept of homeostasis in an organism. 1B3 Explain the meaning of the claim that life is engineered. 1B4 Show how people are different from the rest of the living creation.
Lab Day 1	12–13	12–13	In-Text Lab: <i>Focusing on Life: Engineering a Microscope</i>	EQ: How do microscopes work?
Lab Day 2	SA 9–14	SA-AK 9–14	Lab 1D: <i>Looking Within—Observing Cells with a Microscope</i>	EQ: How can I see cells?
1C Learning About Life	14–22	14–22	Case Study: Scientific Inquiry with Biobots (p. 27) Links: Insect Collection Project Guide, Insect Photo Journal Guide Review 1C: <i>Forming a Hypothesis</i>	EQ: How do biologists work in the real world? Objectives: 1C1 Explain how life science uses models. 1C2 Describe the scientific process. 1C3 Outline the current system for the classification of life.
Lab Day 3	SA 15–17	SA-AK 15–17	Lab 1E: <i>This or That?—Using a Key to Classify Organisms</i>	EQ: How can I classify unfamiliar organisms?
Ethics Day	26	26	Ethics: Eating Animals	
Review and Test Days			Chapter 1 Test	

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CHAPTER 2: CELL STRUCTURE (9 DAYS) FOUNDATIONAL CHAPTER				
2A Cells and Life	29–31	28–31	Review 2A: <i>Classifying Cells</i>	<p>EQ: How do cells make up all living things?</p> <p>Objectives:</p> <p>2A1 List the main points of cell theory.</p> <p>2A2 Explain why cell theory is a scientific model.</p> <p>2A3 Differentiate between types of cells.</p> <p>2A4 Show how cells work together to form tissues in multicellular organisms.</p>
2B Cell Structures	32–37	32–37	Review 2B: <i>Identifying Typical Cell Parts</i>	<p>EQ: How do the parts of a cell work together?</p> <p>Objectives:</p> <p>2B1 List cellular organelles with their functions.</p> <p>2B2 Explain how the cell membrane admits some molecules and excludes others.</p> <p>2B3 Contrast the view that the structures of the cell are engineered with the view that they have evolved.</p>
Lab Day 1	36	36	In-Text Lab: <i>Modeling Life: Making an Analogy for the Cell</i>	EQ: How do the cell structures compare to a large organization?
Lab Day 2	SA 25–28	SA-AK 25–28	Lab 2D: <i>The Nose Knows—Diffusion Rates</i>	EQ: What conditions can speed up diffusion?
2C Cell Function	38–41	38–41	<p>Careers: Drug Detectives—Serving as a Pharmacologist</p> <p>Link: Passive Transport Illustrated</p> <p>Review 2C: <i>Explaining Photosynthesis</i></p>	<p>EQ: How does a cell power its processes?</p> <p>Objectives:</p> <p>2C1 Define <i>photosynthesis</i> and <i>cellular respiration</i>.</p> <p>2C2 Identify ATP as the energy molecule in the cell.</p> <p>2C3 Summarize how cells obtain, store, and use energy.</p>
Lab Day 3	SA 29–31	SA-AK 29–31	Lab 2E: <i>Plants in the Dark—Starch and Photosynthesis</i>	EQ: Does a plant use photosynthesis to form starch?
Ethics Day	42–43	42–43	Ethics: Strategies and Stem Cell Research	
Review and Test Days			Chapter 2 Test	

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CHAPTER 3: INFORMATION IN THE CELL (8 DAYS) FOUNDATIONAL CHAPTER				
3A DNA and Genes	48–49	48–49	Review 3A: <i>The Structure of DNA</i>	EQ: How do cells store information? Objectives: 3A1 Describe the structure of DNA. 3A2 Relate the structure of DNA to its function as an information storage molecule.
3B How Genes Function	50–53	50–53	Review 3B: <i>Transcription or Translation?</i>	EQ: How do cells use information? Objectives: 3B1 Summarize the processes of transcription and translation. 3B2 Compare gene structure and function with engineered systems.
3C Cell Division	54–62	54–62	Review 3C: <i>The Cell Cycle</i>	EQ: How do cells copy information? Objectives: 3C1 Summarize the cell cycle. 3C2 Describe the process of DNA replication. 3C3 Compare mitosis and meiosis. 3C4 Argue that the structure of DNA is evidence for intelligent design.
Lab Day 1	55	55	In-Text Lab: <i>Lights! Camera! Action! Visualizing DNA Replication</i>	EQ: How is DNA copied?
Lab Day 2	SA 39–40	SA-AK 39–40	Lab 3D: <i>Divide and Conquer—The Phases of Mitosis</i>	EQ: What do the phases of mitosis look like?
Ethics Day	66	66	Ethics: Cloning	3C5 Evaluate the ethics of cloning.
Review and Test Days			Chapter 3 Test	

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CHAPTER 4: GENETICS (9 DAYS) FOUNDATIONAL CHAPTER				
4A Principles of Heredity	68–74	68–74	Review 4A: <i>Simple Genetics Problems</i>	<p>EQ: How are traits passed from one generation to the next?</p> <p>Objectives:</p> <p>4A1 Summarize Mendel’s experiments and principles of inheritance.</p> <p>4A2 Contrast dominant and recessive alleles.</p> <p>4A3 Explain the relationship between genotype and phenotype.</p> <p>4A4 Predict the outcome of a cross with a simple dominant-recessive inheritance pattern using Punnett squares.</p>
Lab Day 1	73	73	In-Text Lab: <i>Genetics: Using Your Marbles</i>	<p>EQ: How can marbles be used to model inheritance?</p>
4B Patterns of Inheritance	74–78	74–78	<p>Link: Extra Genetics Problems</p> <p>Review 4B: <i>Non-Mendelian Punnett Squares</i></p>	<p>EQ: Why don’t all traits follow Mendel’s principles of heredity?</p> <p>Objectives:</p> <p>4B1 Define <i>incomplete dominance</i> and <i>codominance</i>.</p> <p>4B2 Explain how more than two alleles can affect a character.</p> <p>4B3 Predict the outcomes of crosses with non-Mendelian inheritance patterns.</p>
Lab Day 2	SA 47–49	SA-AK 47–49	Lab 4D: <i>The Amazing Spudoodle—Inheritance of Traits</i>	<p>EQ: How do an organism’s traits reflect its parents’ traits?</p>
4C Genetics and Populations	78–83	78–83	<p>Case Study: Colorblind Island (p. 87)</p> <p>Review 4C: <i>Variation from Sexual Reproduction</i></p>	<p>EQ: Can the environment cause changes in a population?</p> <p>Objectives:</p> <p>4C1 Define the terms <i>genetic drift</i> and <i>natural selection</i>.</p> <p>4C2 Explain how genetic drift and natural selection affect populations.</p> <p>4C3 Analyze the potential for genetic change in a population.</p> <p>4C4 Predict the results of changes in a population.</p> <p>4C5 Contrast an evolutionist’s view of natural selection with that of a creationist.</p>

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Lab Day 3	SA 51–53	SA-AK 51–53	Lab 4E: <i>Fading Colors—Modeling Natural Selection</i>	EQ: How does natural selection affect different populations?
Ethics Day	83	83	Ethics: Genetic Engineering	
Review and Test Days			Chapter 4 Test	
CHAPTER 5: CHANGE IN NATURE (9 DAYS) FOUNDATIONAL CHAPTER				
5A Evidence of Change	89–92	88–92	Review 5A: <i>Evidence or Inference?</i>	EQ: Do living things change? Objectives: 5A1 List various forms of evidence for change in living things. 5A2 Explain why worldview affects one’s construction of a history of change in life on Earth.
5B Interpreting Evidence with Evolution’s Story	92–105	92–105	Review 5B: <i>Evolutionists’ Interpretations</i>	EQ: How do evolutionists explain change in living things? Objectives: 5B1 Summarize the history of Darwinism. 5B2 Explain the concept of natural selection. 5B3 Explain how evolutionists interpret the evidences for change in living things. 5B4 Critique the internal consistency of evolutionary theory.
Lab Day 1	105	105	In-Text Lab: <i>Tree Trouble: Interpreting Evolutionary Family Trees</i>	EQ: How do evolutionists try to show evolutionary relationships?
5C Interpreting Evidence with the Bible’s Story	106–14	106–15	Info Boxes: The Cambrian Explosion: Life, Suddenly; Global Species Management Programs Review 5C: <i>Creationists’ Interpretations</i>	EQ: How do creationists explain change in living things? Objectives: 5C1 Summarize the biblical account of Creation. 5C2 Explain how creationists interpret the evidences for change in living things. 5C3 Critique the internal consistency of creationist theory. 5C4 Compare creationist theory with biblical teaching. 5C5 Evaluate alternative views of origins.

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Lab Day 2	SA 61–64	SA-AK 61–64	Lab 5D: <i>Mutant Plants—Observing Radiation Effects on Seedlings</i>	EQ: How do mutations affect plant growth?
Lab Day 3	SA 65–67	SA-AK 65–67	Lab 5E: <i>Making a New Gene—Modeling Genetic Mutations</i>	EQ: How can changes to a sentence model changes to DNA?
Ethics Day	114	114–15	Ethics: Eugenics	
Review and Test Days			Chapter 5 Test	
UNIT 2: MICROORGANISMS AND PLANTS				
CHAPTER 6: BACTERIA AND VIRUSES (8 DAYS)				
KEY CHAPTER				
6A Bacteria	121–26	121–26	Case Study: The Superbugs Review 6A: <i>Microbes</i>	EQ: How do prokaryotes function without membrane-bound organelles? Objectives: 6A1 Identify the structures of a bacterium. 6A2 Contrast the kingdoms Archaea and Bacteria. 6A3 Explain how bacteria reproduce. 6A4 Explain the role of bacteria in the environment. 6A5 Evaluate the claim that antibiotic resistance is an example of biological evolution.
Lab Day 1	SA 73–75	SA-AK 73–75	Lab 6C: <i>The Glob that Ate the World—Graphing Bacterial Growth</i>	EQ: How quickly does a colony of bacteria grow?
6B Viruses	127–30	127–31	Review 6B: <i>Viruses</i>	EQ: Are viruses alive? Objectives: 6B1 Label the structures of a virus. 6B2 Explain why viruses are classified differently than living organisms are. 6B3 Contrast active and latent viruses. 6B4 Explain ways to prevent and prepare for viral infections.
Lab Day 2	129	129	In-Text Lab: <i>Handwashing: It's a Good Practice</i>	EQ: How long does it take to wash off germs?
Lab Day 3	SA 77–79	SA-AK 77–79	Lab 6D: <i>Herd Immunity—Modeling the Effects of Vaccines on the Spread of Disease</i>	EQ: Can vaccination protect people who have not been vaccinated?

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Ethics Day	130	130–31	Ethics: Gene Therapy	6B5 Evaluate the ethics of gene therapy.
Review and Test Days			Chapter 6 Test	
CHAPTER 7: PROTISTS AND FUNGI (7 DAYS) ENRICHMENT CHAPTER				
7A Protists	134–41	134–41	Case Study: Plant or Animal? Review 7A: <i>Classifying Protists</i>	EQ: How do protists live and function? Objectives: 7A1 Identify the major characteristics of protists. 7A2 Classify protists on the basis of major characteristics. 7A3 Summarize how protists move, obtain energy, and reproduce. 7A4 Explain the roles of protists in the environment. 7A5 Evaluate the assumption that protists are lower life forms.
Lab Day 1	SA 85–86	SA-AK 85–86	Lab 7C: <i>Amoebas in Action</i> —Observing a Protist	EQ: What is an amoeba like?
7B Fungi	142–51	142–51	Case Study: Whence the Slime Mold? (p. 154) Review 7B: <i>Mushroom Structure</i>	EQ: How do fungi live and function? Objectives: 7B1 Identify the major characteristics of fungi. 7B2 Summarize how fungi obtain energy and reproduce. 7B3 Classify fungi on the basis of major characteristics. 7B4 Explain the roles of fungi in the environment. 7B5 Contrast explanations for the origin of slime molds.
Lab Day 2	150	150	In-Text Lab: <i>Don't Eat the Mushrooms</i>	EQ: How do I know which mushrooms are poisonous?
Lab Day 3	SA 87–88	SA-AK 87–88	Lab 7D: <i>The Picky Yeast</i> —Temperature and Yeast	EQ: What is the optimal temperature for yeast?
Review and Test Days			Chapter 7 Test	
CHAPTER 8: THE PLANT KINGDOM (8 DAYS) KEY CHAPTER				

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8A Classifying Plants	156–65	156–65	Worldview Sleuthing: Medicinal Plants Link: Medicinal Plants Rubric Review 8A: <i>Major Plant Groups</i>	EQ: How are plants different from other living things? Objectives: 8A1 List the main characteristics of plants. 8A2 Compare plants with other living things. 8A3 Differentiate between vascular and nonvascular plants.
Lab Day 1	161	161	In-Text Lab: <i>Mosses and Ferns Up Close</i>	EQ: How are nonvascular and seedless vascular plants similar, and how are they different?
Lab Day 2	SA 93–94	SA-AK 93–94	Lab 8C: <i>Plant Collecting Grew on Me</i> —Inquiring into Plant Characteristics	EQ: How can plants be classified?
8B Plant Structure	166–72	166–72	Review 8B: <i>Plant Anatomy</i>	EQ: What are plants made of? Objectives: 8B1 Identify the structure and functions of roots, stems, and leaves. 8B2 Explain how cell walls and turgor pressure support plants.
Lab Day 3	SA 95–97	SA-AK 95–97	Lab 8D: <i>Crunch Time</i> —Exploring Turgor Pressure	EQ: Will salt water make potato strips crisper?
Ethics Day	175	175	Ethics: The Wise Use of Plants	Distinguish legitimate uses of plants from illegitimate uses on the basis of biblical teaching.
Review and Test Days			Chapter 8 Test	
CHAPTER 9: PLANT FUNCTIONS (8 DAYS) KEY CHAPTER				
9A Plant Responses	177–80	176–80	Review 9A: <i>Classifying Tropisms</i>	EQ: How do plants sense and respond to their environment? Objectives: 9A1 Define tropisms in plants. 9A2 Identify the effects of plant hormones. 9A3 Contrast short-day and long-day plants. 9A4 Defend the aesthetic use of plants on the basis of biblical teaching.

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Lab Day 1	SA 103–5	SA-AK 103–5	Lab 9C: <i>Which Way Is Up?</i> —Gravitropism in Seedlings	EQ: Does the way in which a seed is planted affect how its stem and roots grow?
Lab Day 2	SA 107–9	SA-AK 107–9	Lab 9D: <i>Old Farmers’ Tale</i> —Factors That Affect Germination	EQ: Is there a way to increase the germination rate of seeds?
9B Plant Reproduction	182–86	182–86	Careers: From Slave to Scientist—Serving as a Horticulturist (p. 187) Review 9B: <i>Flowers</i>	EQ: How do plants reproduce? Objectives: 9B1 Compare seed-producing plants with seedless plants. 9B2 Compare reproduction in gymnosperms and angiosperms.
Lab Day 3	181	181	In-Text Lab: <i>Long-Lasting Flowers</i>	EQ: What makes cut flowers last longer?
Ethics Day	189	189	Ethics: Water Wars	
Review and Test Days			Chapter 9 Test	
UNIT 3: THE ANIMAL KINGDOM				
CHAPTER 10: ANIMAL CLASSIFICATION (9 DAYS)				
FOUNDATIONAL CHAPTER				
10A Characteristics of Animals	193–99	192–99	Review 10A: <i>Animal Characteristics</i>	EQ: How are animals classified? Objectives: 10A1 List the major characteristics common to all animals. 10A2 Explain how the characteristics of animals can be used to classify them. 10A3 Distinguish between chordates and vertebrates. 10A4 Compare the modern, Linnaean, and baraminological classification systems.
Lab Day 1	SA 117–19	SA-AK 117–19	Lab 10D: <i>A Place for Everything</i> —Inquiring into Classification	EQ: How does someone choose criteria for classification?
10B Invertebrates	200–204	200–204	Review 10B: <i>Identifying Invertebrates</i>	EQ: What are invertebrates? Objectives: 10B1 List the major characteristics of invertebrates. 10B2 Compare the major invertebrate phyla.

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10C Vertebrates	205–12	205–12	Review 10C: <i>Identifying Vertebrates</i> Link: Animal Tokens	EQ: What are vertebrates? Objectives: 10C1 List the major characteristics of vertebrates. 10C2 Compare the major vertebrate classes.
Lab Day 2	212	212	In-Text Lab: <i>Animal Phylum Bingo: Think You Know Your Animal Classification?</i>	EQ: How well do I know my animal classification?
Lab Day 3	SA 121–24	SA-AK 121–24	Lab 10E: <i>Records—Scientific Journaling</i>	EQ: How can I record scientific observations?
Ethics Day	217	217	Ethics: Managing Animals Link: Ethics Rubric	10C3 Justify protecting certain animals using biblical teaching.
Review and Test Days			Chapter 10 Test	
CHAPTER 11: ANIMAL STRUCTURE AND FUNCTION (9 DAYS) KEY CHAPTER				
11A Energy	219–29	218–29	Careers: Feeding our Animal Friends: Serving as an Animal Nutritionist Review 11A: <i>Digestion Concept Map</i>	EQ: How do animals get and use energy? Objectives: 11A1 Compare various ways that animals obtain energy. 11A2 Explain how animals maintain homeostasis.
Lab Day 1	SA 131–33	SA-AK 131–33	Lab 11D: <i>Staying Cozy—Conserving Heat: Wool Versus Down</i>	EQ: Which is a better insulator, wool or down?
Ethics Day	243	243	Ethics: Eating Insects Link: Ethics Rubric	11A3 Evaluate the cultural and ethical implications of eating insects.
11B Transport	230–34	230–34	Review 11B: <i>Animal Circulation</i>	EQ: How do animals circulate nutrients and breathe? Objectives: 11B1 Distinguish between open and closed circulatory systems. 11B2 Compare the circulatory systems of different vertebrate groups. 11B3 Compare types of gas exchange in animals.
Lab Day 2	SA 135–38	SA-AK 135–38	Lab 11E: <i>Crank Up the Heat—The Effect of Temperature on Fish Respiration</i>	EQ: How does change in temperature affect a fish’s rate of respiration?

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11C Support, Movement, and Control	234–39	234–39	Review 11C: <i>Support, Movement, and Control</i>	EQ: How do animals support, move, and control their bodies? Objectives: 11C1 Compare types of animal support. 11C2 Compare types of animal movement. 11C3 Compare types of animal control. 11C4 Engineer a design that is based on a particular animal’s body structure.
Lab Day 3	240	240	In-Text Lab: <i>Biomimicry: Imitating Nature</i>	EQ: How can studying the animal kingdom solve engineering problems?
Review and Test Days			Chapter 11 Test	
CHAPTER 12: ANIMAL REPRODUCTION AND BEHAVIOR (10 DAYS) ENRICHMENT CHAPTER				
12A Animal Reproduction	245–50	244–50	Worldview Sleuthing: Dealing with Owls Link: Dealing with Owls Rubric Review 12A: <i>Animal Reproduction</i>	EQ: How do animals reproduce after their own kind? Objectives: 12A1 Identify reproductive organs and structures in animals. 12A2 Differentiate between external and internal fertilization. 12A3 Contrast internal and external prenatal development.
Lab Day 1	SA 143–45	SA-AK 143–45	Lab 12C: <i>Are You My Mommy?</i> —Animal Reproduction Worksheet	EQ: Are an animal’s reproduction strategies related to the number of offspring that it produces?
12B Animal Behavior	252–56	252–56	Case Study: Invasive Species Review 12B: <i>Animal Behavior</i>	EQ: How do animals interact with each other? Objectives: 12B1 Classify animal behaviors as innate or learned. 12B2 Identify the general forms of communication that animals use.
Lab Day 2	251	251	In-Text Lab: <i>Purple Fish, Green Fish</i>	EQ: Do fish show color preference?
Lab Day 3	SA 147–50	SA-AK 147–50b	Lab 12D: <i>Trapped!</i> —Building a Better Insect Trap	EQ: What is the best way to catch a variety of insects?
Lab Day 4				
Lab Day 5				

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Ethics Day	259	259	Ethics: Animal Testing Link: Ethics Rubric	12B3 Evaluate the ethics of animal testing.
Review and Test Days			Chapter 12 Test	
Section	SE Pages	TE Pages	Teacher Resources	Essential Questions/Content Objectives
UNIT 4: THE HUMAN BODY				
CHAPTER 13: SUPPORT AND MOVEMENT (9 DAYS)				
FOUNDATIONAL CHAPTER				
13A Introduction to Anatomy and Physiology	263–67	263–67	Review 13A: <i>Humans and Animals</i>	EQ: How does the human body work? Objectives: 13A1 Distinguish humans from animals. 13A2 Define the four types of tissue. 13A3 Outline the levels of organization in the human body.
13B Skin	268–72	268–72	Link: Benin Clinic Review 13B: <i>Skin Structure</i>	EQ: Why are there so many different skin colors? Objectives: 13B1 Describe the layers of human skin. 13B2 Explain how the skin functions. 13B3 Explain how skin color is produced. 13B4 Summarize from the Genesis narrative and population genetics the origin of ethnic differences.
Lab Day 1	SA 159–61	SA-AK 159–61	Lab 13E: <i>Skin Deep</i> —The Structure of Skin	EQ: What structures do we see in human skin?
Ethics Day	272	272	Ethics: Medicine and Human Dignity Link: Ethics Rubric	13B5 Demonstrate from Scripture that all humans deserve care regardless of skin color.
13C Bones	273–76	273–76	Case Study: Joints Are Levers Review 13C: <i>Bones</i>	EQ: How does a bone grow and heal? Objectives: 13C1 Describe the typical structure of a bone. 13C2 Identify the major bones of the human body. 13C3 Explain how the skeleton develops and grows. 13C4 Identify the main types of joints in the skeletal system.

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13D Muscles	277–82	277–82	Review 13D: <i>Muscles</i>	<p>EQ: How can I move my arm by just thinking about it?</p> <p>Objectives:</p> <p>13C1 Identify examples of voluntary and involuntary muscles.</p> <p>13C2 Differentiate between skeletal, smooth, and cardiac muscle.</p> <p>13C3 Explain how muscles function.</p> <p>13C4 Differentiate between ligaments and tendons.</p>
Lab Day 2	SA 163–65	SA-AK 163–65	Lab 13F: <i>Firing Up</i> —Heat from Muscles	<p>EQ: Do muscles have other jobs besides helping us to move?</p>
Review and Test Days			Chapter 13 Test	
CHAPTER 14: ENERGY (9 DAYS) KEY CHAPTER				
14A Food and Nutrition	287–94	286–94	<p>Case Study: In Love with Sugar (p. 303)</p> <p>Link: Counseling People Struggling with Eating Disorders</p> <p>Review 14A: <i>Metabolic Rate</i></p>	<p>EQ: How do we get energy from food?</p> <p>Objectives:</p> <p>14A1 List the six classes of nutrients.</p> <p>14A2 Explain the roles of the different nutrients in the body.</p> <p>14A3 Analyze the nutrient contents of different foods.</p> <p>14A4 Design a plan for sound nutrition incorporating biblical teaching.</p>
Lab Day 1	292–93	292–93	In-Text Lab: <i>What’s in My Food?</i>	<p>EQ: How can nutrition facts labels help a person eat healthy?</p>
Lab Day 2	SA 173–74	SA-AK 173–74	Lab 14D: <i>Using Energy</i> —Burning Calories with Exercise	<p>EQ: How many calories do I burn when I exercise?</p>
14B Digestion	295–98	295–98	Review 14B: <i>The Digestive System</i>	<p>EQ: Could the order of the digestive organs be changed?</p> <p>Objectives:</p> <p>14B1 Contrast mechanical and chemical digestion.</p> <p>14B2 Summarize the process of chemical digestion.</p> <p>14B3 Describe the organs of the digestive system.</p> <p>14B4 Trace the path of food through the digestive system.</p>
Lab Day 3	SA 175–77	SA-AK 175–77	Lab 14E: <i>Break It Down</i> —Mechanical and Chemical Digestion	<p>EQ: How does chewing food help digest it?</p>

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14C The Urinary System	298–300	298–301	Review 14C: <i>The Urinary System</i>	EQ: How does the body remove wastes? Objectives: 14C1 Summarize the types of excretion. 14C2 Describe the organs of the urinary system. 14C3 Summarize how the kidneys remove waste materials from the blood. 14C4 Trace the path of urine through the urinary system.
Ethics Day	300	300	Ethics: Doping in Sports Link: Ethics Rubric	14C5 Explain the danger of performance-enhancing drugs such as diuretics.
Review and Test Days			Chapter 14 Test	
CHAPTER 15: TRANSPORT (9 DAYS) KEY CHAPTER				
15A Breathing	305–11	304–11	Info Box: Thunderstorm Asthma Links: Brandon’s Story, Lungs and Diaphragm Model Review 15A: <i>The Respiratory System</i>	EQ: How does breathing keep me alive? Objectives: 15A1 Describe the organs of the respiratory system. 15A2 Trace the flow of air through the respiratory system. 15A3 Explain how the respiratory system works together with other systems in the body.
Lab Day 1	310	310	In-Text Lab: <i>Hold It!</i>	EQ: How does exercise affect holding your breath?
Lab Day 2	SA 185–86	SA-AK 185–86	15D: <i>I’ll Huff and I’ll Puff</i> —Increasing Respiration Rate	EQ: Does exercise affect my breathing rate?
15B Circulation	311–16	311–16	Case Study: Segregated Blood? Careers: Needlework: Serving as a Phlebotomist (p. 317) Review 15B: <i>The Heart</i>	EQ: How does my body move stuff around inside? Objectives: 15B1 Describe the components of the circulatory system. 15B2 Trace the flow of oxygen and carbon dioxide through the body. 15B3 Explain how the circulatory system works together with other systems in the body.
Lab Day 3	SA 187–88	SA-AK 187–88	Lab 15E: <i>The Drumming of the Heart</i> —Increasing Heart Rate	EQ: Does exercise affect my heart rate?

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Ethics Day	323	323	Ethics: Organ Donation Link: Ethics Rubric	15C3 Analyze arguments for and against blood and organ donation.
15C The Lymphatic System	317–19	317–19	Review 15C: <i>The Lymphatic System</i>	EQ: What does the lymphatic system do? Objectives: 15C1 Describe the components of the lymphatic system. 15C2 Explain how the lymphatic system works together with other systems in the body.
Review and Test Days			Chapter 15 Test	
CHAPTER 16: CONTROL (8 DAYS) KEY CHAPTER				
16A Immunity	325–30	325–30	Review 16A: <i>Immune System Analogy</i>	EQ: How does my body fight disease? Objectives: 16A1 Describe the body's lines of defense. 16A2 Identify examples of the inflammatory response. 16A3 Contrast active and passive immunity.
16B The Nervous System	330–38	330–38	Worldview Sleuthing: Screen Addiction Link: Screen Addiction Rubric Review 16B: <i>The Nervous System</i>	EQ: How does my body control itself? Objectives: 16B1 Describe the parts of the nervous system. 16B2 Summarize how the nervous system relays messages. 16B3 Explain how the parts of the nervous system work together to control the body and maintain homeostasis.
Ethics Day	338	338	Ethics: Sports Safety Link: Ethics Rubric	16B4 Analyze the effects of head trauma on athletes.

Section	SE Pages	TE Pages	Teacher Resources	Essential Questions/Content Objectives
16C The Senses	339–46	339–46	Review 16C: <i>Eyes and Ears</i>	<p>EQ: How do I get information about my surroundings?</p> <p>Objectives:</p> <p>16C1 Describe the sensory organs of the body.</p> <p>16C2 Trace the path of a stimulus through a sensory organ to the nerve receptors.</p> <p>16C3 Summarize how the sensory organs work together with other body systems to maintain homeostasis.</p>
Lab Day 1	SA 195–96	SA-AK 195–96	Lab 16D: <i>Hot or Cold?</i> —The Skin’s Sensation of Temperature	EQ: How small of a difference in temperature can your skin detect?
Lab Day 2	SA 197–99	SA-AK 197–99	Lab 16E: <i>Ghost of Colors Past</i> —Afterimages	EQ: What causes afterimages?
Review and Test Days			Chapter 16 Test	
CHAPTER 17: REPRODUCTION, GROWTH, AND DEVELOPMENT (10 DAYS) KEY CHAPTER				
17A The Endocrine System	352–56	352–57	Case Study: Which Door? Review 17A: <i>The Endocrine System</i>	<p>EQ: How do the cells in my body communicate even though they aren’t connected?</p> <p>Objectives:</p> <p>17A1 Describe the parts of the endocrine system.</p> <p>17A2 Explain how the structures of the endocrine system function.</p> <p>17A3 Describe the changes in a person’s body associated with puberty.</p> <p>17A4 Show how the endocrine system works together with other body systems to maintain homeostasis.</p> <p>17A5 Evaluate the current gender crisis on the basis of a biblical worldview.</p>
Lab Day 1	SA 207–8	SA-AK 207–8	Lab 17D: <i>Too Much Sugar</i> —Inquiring into Trends in Diabetes	EQ: How many Americans have diabetes?

Section	SE Pages	TE Pages	Teacher Resources	Essential Questions/Content Objectives
17B The Reproductive System	357–60	357–60	Links: Covenant Eyes, Protecting Teens, Focus on the Family Review 17B: <i>Reproduction</i>	EQ: What is God’s design for human reproduction? Objectives: 17B1 List the structures and functions of the reproductive organs. 17B2 Trace the flow of haploid gametes through the male and female reproductive systems to produce a fertilized egg. 17B3 Explain how the reproductive system is different from the other body systems with respect to homeostasis. 17B4 Formulate a biblical view of human sexuality.
Ethics Day	360	360	Ethics: Prenatal Screening Link: Ethics Rubric	
17C Human Growth and Development	361–65	361–65	Links: Portrait of Lotte, Artificial Wombs Review 17C: <i>Growing Up</i>	EQ: How will I change as I get older? Objectives: 17C1 List the stages of human development. 17C2 Distinguish the different stages of human development on the basis of structure and function.
Lab Day 2	364–65	364–65	In-Text Lab: <i>Exploring Growth Curves</i>	EQ: How does the growth of different people compare?
Lab Day 3	SA 209–12	SA-AK 209–12	Lab 17E: <i>Do, Re, Mi—Gender, Age, and Vocal Range</i>	EQ: What is my vocal range?
Ethics Day	369	369	Ethics: Artificial Wombs Link: Ethics Rubric	
Review and Test Days			Chapter 17 Test	
UNIT 5: INTERACTING WITH THE BIOSPHERE				
CHAPTER 18: EXPLORING THE BIOSPHERE (9 DAYS)				
FOUNDATIONAL CHAPTER				
18A Factors in the Environment	373–77	372–77	Careers: Protecting Parks and People: Serving as a Park Ranger Review 18A: <i>Factors in the Environment</i>	EQ: What makes one environment different from another? Objectives: 18A1 Describe the factors that define an ecosystem. 18A2 Distinguish between biotic and abiotic factors in the environment.
Lab Day 1	378	378	In-Text Lab: <i>Carp Question</i>	EQ: Can one abiotic factor affect another?
Lab Day 2				

Section	SE Pages	TE Pages	Teacher Resources	Essential Questions/Content Objectives
Lab Day 3				
Lab Day 4	SA 217–19	SA-AK 217–19	Lab 18C: <i>Backyard Ecosystems</i> —Inquiring into Ecology Right Outside Your Door	EQ: How do living and nonliving things interact where I live?
18B Biomes and Ecosystems	379–92	379–92	Case Study: Riparian Zones (p. 395) Review 18B: <i>Biomes and Ecosystems</i>	EQ: How do scientists study the environment? Objectives: 18B1 Explain how ecologists use models to study the environment. 18B2 Describe the various types of biomes. 18B3 Explain the relationship between biomes, ecosystems, habitats, and niches.
Ethics Day	396	396	Ethics: Fish Fight Link: Ethics Rubric	18B4 Recommend a solution to an issue regarding environmental usage.
Review and Test Days			Chapter 18 Test	
CHAPTER 19: RHYTHMS IN ECOSYSTEMS (10 DAYS) ENRICHMENT CHAPTER				
19A Environmental Cycles of Matter	398–403	398–403	Review 19A: <i>The Water Cycle</i>	EQ: Why don't we ever run out of water? Objectives: 19A1 Trace the path of the water cycle. 19A2 Associate the oxygen and carbon cycles. 19A3 Describe the nitrogen cycle.
19B Energy in the Environment	404–8	404–8	Review 19B: <i>Modeling Energy Flow</i>	EQ: Does energy also cycle through the environment? Objectives: 19B1 Explain why energy cannot cycle through the environment. 19B2 Analyze available energy in an ecosystem. 19B3 Trace the flow of energy through a food web. 19B4 Synthesize scientific observations and biblical teaching on divine design to explain death and suffering in the biosphere.
Lab Day 1	406	406	In-Text Lab: <i>Tracking Energy in a Food Chain</i>	EQ: How do energy pyramids model energy flow in the environment?

Section	SE Pages	TE Pages	Teacher Resources	Essential Questions/Content Objectives
Lab Day 2	SA 227–30	SA-AK 227–30	Lab 19D: <i>A Tangled Web—My Food Web</i>	EQ: Am I a herbivore, carnivore, or omnivore?
19C Biotic Rhythms	409–14	409–14	Case Studies: Chernobyl’s Ghost Town (p. 418), Urban Peregrines (p. 418) Link: Interactive Succession Review 19C: <i>Succession on a Volcano</i>	EQ: Do populations have rhythms? Objectives: 19C1 Analyze various relationships between organisms in an ecosystem. 19C2 Analyze the issues related to managing organisms and their biotic rhythms. 19C3 Classify examples of succession as primary or secondary. 19C4 Formulate a biblical response to challenges in managing resources that people and wildlife share.
Lab Day 3	SA 231–33	SA-AK 231–33	Lab 19E: <i>The Old, Abandoned Field—Observing Succession</i>	EQ: What does succession look like?
Lab Day 4				
Ethics Day	414	414	Ethics: Engineering for Migrations Link: Ethics Rubric	Evaluate man’s role in managing organisms and their rhythms.
Review and Test Days			Chapter 19 Test	
CHAPTER 20: MANAGING GOD’S CREATION (11 DAYS) KEY CHAPTER				
20A Protecting the Environment	420–23	420–23	Link: Tribute in Light Review 20A: <i>Pollution</i>	EQ: How can we wisely reduce pollution? Objectives: 20A1 List the various forms of pollution. 20A2 Defend curbing pollution.
Lab Day 1	424–25	424–25	In-Text Lab: <i>Air Filtration: Balancing Filtration with Airflow</i>	EQ: How can we clean air without reducing airflow to an area?
Lab Day 2	SA 241–43	SA-AK 241–43	Lab 20D: <i>Clean and Bright—Recycling Paper</i>	EQ: Is recycled paper useful?

Section	SE Pages	TE Pages	Teacher Resources	Essential Questions/Content Objectives
20B Using Resources	426–31	426–31	Case Study: Whose Trees Are These? Worldview Sleuthing: Sprucing Up the Forest Links: The Game of Game Animals, Sprucing up the Forest Rubric Review 20B: <i>Renewable and Nonrenewable Resources</i>	EQ: Can managing resources actually help the environment? Objectives: 20B1 Contrast renewable and nonrenewable resources. 20B2 Argue for the benefits of natural resource management. 20B3 Evaluate environmentalism and its extremes according to biblical teaching.
20C Managing Creation	432–34	432–34	Case Study: Black Bears Are Back (p. 437) Review 20C: <i>Managing the Environment</i>	EQ: How should we use God’s living world? Objectives: 20C1 Defend the need for humans to manage the environment. 20C2 List practical principles for managing God’s living world. 20C3 Apply the principles for wisely managing God’s world to specific examples.
Lab Day 3	SA 245–47	SA-AK 245–47	Lab 20E: <i>Population Explosion</i> —Modeling Population Growth	EQ: How many humans live on the earth?
Ethics Day	434	434	Ethics: Population Growth Link: Ethics Rubric	Formulate a Christian response to the challenges posed by human population growth.
Review and Test Days			Chapter 20 Test	
Review and Final Exam				