

*For more in-depth scheduling suggestions, see the margin notes in *LIFE SCIENCE Teacher's Edition* and *LIFE SCIENCE Lab Manual Teacher's Edition*.

**These Bible integration topics are covered in the teacher's edition margin notes and are not directly covered in the student text.

†These investigations are carried out over several class days or even several weeks. See the margin notes in *LIFE SCIENCE Teacher's Edition* and *LIFE SCIENCE Lab Manual Teacher's Edition* for more detailed scheduling instructions.

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Lesson Plan Overview

Day(s)	Topic	Pages	Support Materials*	Bible Integration
Unit 1: Foundations of Life Science				
Chapter 1: The World of Life Science				
1	Introduction to <i>LIFE SCIENCE</i>	viii–xi		Purpose of studying life science
2	1A What Is Science?	2–9	Application 1a: Searching for the Truth	Model-making nature of science Limitations of science Effects of presuppositions in science Reasons for studying science Biblical view of science
3	1B Why Take a Christian Approach?	9–16	Class Investigation 1d: Is Measuring Accurate?	Contrast between naturalistic and biblical worldviews The Flood and fossils Image of God in man Creation Mandate Effects of the Fall and man's sin Redemption found in Christ

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4	1C How Do Scientists Work?	16–22	Application 1b: The Scientific Method Application 1c: Defining the Problem and Forming a Hypothesis	Life of service in science for God's glory
5			Class Investigation 1e: Popcorn Science	
6	Chapter 1 Review			
7	Chapter 1 Test			
Chapter 2: Characteristics and Classification of Life				
8	2A Life and Cells	28–35	Application 2a: Being Alive Application 2b: The Cell Theory	Creation "after their kind" God as the Creator and Source of life Physical and spiritual life Gaia theory contrasted with a biblical worldview
9			Class Investigation 2j: The pH of Life Substances	
10	2B Molecules and Life	35–39	Application 2c: Cellular Functions Application 2d: Molecules and Life Field Investigation 2m: Grouping Plants by Characteristics†	Molecules as an example of God's provision for His creatures Stewarding resources God has given us in creative and helpful ways
11			Class Investigation 2k: Protein in Life Substances or Class Investigation 2l: The Action of Enzymes	

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12	2C Classification of Life	39–48	Application 2e: The Modern Classification System	Classifying life as a fulfillment of the Creation Mandate Biblical perspective on humans' relationship to the animal kingdom Role of names in the Bible Evolutionary assumptions in the modern classification system Species versus biblical kinds
13			Application 2f: Scientific Names Application 2g: The Living Kingdoms Application 2i: Classification Review	
14			Application 2h: Using a Dichotomous Key	
15			Chapter 2 Review	
16	Chapter 2 Test			
Chapter 3: Cell Structure				
17	3A Cell Membranes	53–59	Application 3a: Membranes and Their Important Properties	Complexity of life as a testimony to God's benevolent design Difficulty of evolution to explain the cell's complexity God's glory declared in His creation**
18			Class Investigation 3e: Diffusion Rates or Class Investigation 3f: Osmosis†	
19	3B Typical Parts of Cells	59–66	Application 3c: Typical Parts of Cells	

Day(s)	Topic	Pages	Support Materials*	Bible Integration
20			Class Investigation 3g: How to Use a Microscope	
21			Application 3b: The Compound Light Microscope	
22	3C Types of Cells	66–69	Class Investigation 3i: Turgor Pressure Application 3d: Review	Irreducible complexity and design in the cell Serving God as a pathologist
23			Class Investigation 3h: Observing Cells with a Microscope	
24	Chapter 3 Review			
25	Chapter 3 Test			
Chapter 4: Cell Activities				
26	4A Order Among Cells	75–78	Application 4a: Division of Labor	Stewardship of the bodies God has given us Functions of the different parts of the human body as an example of functions in the body of Christ (1 Cor. 12)
27	4B Cellular Respiration	78–83	Class Investigation 4e: Aerobic Cellular Respiration†	Origin of energy and matter** The problem that irreducible complexity in cellular activities presents for evolution
28			Application 4b: Cellular Respiration	
			Class Investigation 4f: Anaerobic Cellular Respiration†	Cellular respiration as a marvelous example of God's handiwork Leaven in the Bible
29	4C Photosynthesis	83–86	Application 4c: Photosynthesis	A Christian versus a secular view of photosynthesis and its role in maintaining life
30			Class Investigation 4g: Starch from Photosynthesis†	
			Application 4d: Review	
31	Chapter 4 Review			
32				

Day(s)	Topic	Pages	Support Materials*	Bible Integration
33	Chapter 4 Test			
Unit 2: Heredity and the Origin of Life				
Chapter 5: The Cell Cycle and Protein Synthesis				
34	5A Genes and Cell Division	94–101		Cell division and finding treatments for cancer
35			Application 5a: The Cell Cycle	God's knowledge of us from the womb
36			Application 5b: Sexual and Asexual Reproduction Application 5c: Genes and Mitosis	
37			Class Investigation 5e: The Phases of Mitosis	
38	5B How Genes Function	101–7	Application 5d: How Genes Function	Design in DNA that drove Antony Flew to deism
39			Class Investigation 5f: A Model of DNA, RNA, and Protein Synthesis	Using the resources God has given us to solve problems and help people Effects of the Fall and the need for spreading the gospel** Irreducible complexity in protein synthesis Necessity of the Bible, not just the physical creation, to tell us about the Designer
40	Chapter 5 Review			
41	Chapter 5 Test			
Chapter 6: Genetics of Organisms				
42	6A The Origin of Modern Genetics	113–18	Application 6a: Modern Genetics	Genetics revealing the orderliness and diversity of creation

Day(s)	Topic	Pages	Support Materials*	Bible Integration
43	6B Heredity	118–25	Application 6d: Punnett Squares (Simple Dominance)	
			Application 6e: Genetics Problems (Simple Dominance)	
44			Application 6d: Punnett Squares (Multiple Alleles, Incomplete Dominance)	
			Application 6e: Genetics Problems (Incomplete Dominance, Multiple Alleles)	
45			Class Investigation 6f: Inheritance of Traits	
46		Application 6d: Punnett Squares (Sex-Linked Traits)		
			Application 6e: Genetics Problems (Sex-Linked Traits)	
47	6C Genetic Disorders	125–27	Application 6b: Genes, Chromosomes, and Heredity	Genetic disorders and God's sovereignty God's control of human development Sanctity of human life The Bible and abortion Sin as the cause of pain in the world The Bible and discrimination**
48	Chapter 6 Review		Application 6c: Review	
49	Chapter 6 Test			
Chapter 7: Genetic Changes and Biotechnology				

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50	7A Mutations	133–38		<p>Grace of God in allowing man to solve problems</p> <p>Absolute authority of God’s Word in guiding our thoughts and actions</p> <p>The Curse and the Flood as two major global changes</p> <p>Biotechnology and the value of human life</p> <p>Mutations and the Fall</p> <p>Biblical versus secular view of mutations</p> <p>Beneficial mutations and creation versus evolution**</p>
51	7B Genetic Engineering	139–43	Application 7a: Mutations	<p>Serving God as a livestock breeder</p> <p>Biblical perspective on genetic engineering</p> <p>Spiritual nature of man</p> <p>Stewardship of God’s creation</p> <p>Impossibility of man producing a perfect world</p>
52	7C Cloning	143–46	Application 7b: Our Use of Genetics	<p>Biblical perspective on cloning</p> <p>Jacob and Esau as an example of twins in the Bible**</p>
53	7D Stem Cell Technology	146–47	Class Investigation 7d: Observing Radiation Effects on Seedlings	<p>Biblical perspective on stem cell research</p> <p>Sanctity of human life</p>
54	Chapter 7 Review		Application 7c: Review	
55	Chapter 7 Test			
Chapter 8: In the Beginning				
56	8A Biblical Creationism	154–62	Application 8a: What the Bible Teaches About Creation	Role of faith in beliefs about origins

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57			Personal Investigation 8e: The Scale of Noah's Ark†	<p>Contrast between biblical creationism and evolutionism</p> <p>The Bible as our authoritative source</p> <p>Summary of the Bible's teachings on Creation</p> <p>Literal view of Creation</p> <p>Nonliteral views of Creation</p> <p>The age of the earth</p> <p>Evolutionary vs. creationary interpretations of fossils</p> <p>The Bible and dinosaurs</p> <p>Dinosaurs and problems for evolution</p> <p>The Flood and Noah's ark</p>
58	8B History of Evolutionary Theory	163–70	Application 8b: Review	Evaluating evolution in light of God's truth
59			Research Investigation 8f: Dinosaurs†	<p>Natural selection and speciation</p> <p>Evaluating Lamarck's, Darwin's, and De Vries's theories</p> <p>Evaluating modern evolutionary theories</p> <p>Evaluating intelligent design</p>
60	8C A Record of Evolution?	171–76	Research Investigation 8h: Evolutionary Family Trees	<p>Evaluating the "evidences" of evolution</p> <p>The fossil record</p>
61			<p>Application 8c: Defining Concepts of Evolution</p> <p>Application 8d: A Record of Evolution</p>	<p>Speciation and biblical kinds</p> <p>Ultimate question of origins</p> <p>God's creation of and continued direction of the processes we observe in the world</p>
62			Class Investigation 8g: Making a New Gene	

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63	Chapter 8 Review			
64	Chapter 8 Test			
Unit 3: Microbiology and Plant Biology				
Chapter 9: The Microscopic World				
65	9A Kingdoms Archaeobacteria and Eubacteria	184–91		The microscopic world as a hidden menace of the Fall but also as an unseen mercy of God's sustenance
66			Application 9a: Kingdoms Archaeobacteria and Eubacteria	The problems that archaeobacteria present for evolution Antibiotic-resistant bacteria and evolution
67			Class Investigation 9d: Graphing Bacterial Growth	
68	9B Kingdom Protista	191–96		Evolutionary versus creationary views on the origin of protozoans
69			Class Investigation 9e: Observing Protists	
70	9C Kingdom Fungi	196–200	Class Investigation 9f: Examining a Mushroom†	Fungi as examples of the effects of the Fall and of God's involvement in maintaining His world
71			Application 9b: Kingdom Fungi	Views on the origin of eukaryotic and prokaryotic cells
72			Class Investigation 11g: Factors That Affect Germination†	
72	Chapter 9 Review		Application 9c: Review	
73	Chapter 9 Test			
Chapter 10: Structure and Function of Plants				
74	10A Plant Structure	206–13	Class Investigation 10g: How Much Water Is Lost During Transpiration?†	The plant world bearing testimony of an omniscient, benevolent Creator

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75			Application 10a: Root and Leaf Structure Class Investigation 10i: Gravitropism in Seedlings† Application 10b: Structures and Functions of Plants	
76	10B Plant Functions	213–20	Application 10c: Photosynthesis and Leaves	Psalm 1 and a Christian's need for God's Word
77			Class Investigation 10f: Leaf Design and Function	Trusting the Lord (Job 8)**
78				
	10C Plant Responses	220–22		Biblical view of tropisms in plants contrasted with an evolutionary view
79			Class Investigation 10h: Is Light Necessary for Photosynthesis?†	
80	Chapter 10 Review		Application 10d: Plant Anatomy Review Application 10e: Plant Physiology Review	
81	Chapter 10 Test			
Chapter 11: Plant Classification and Reproduction				
82	11A Plant Classification	228–35	Class Investigation 12j: Butterfly Metamorphosis† Application 11a: Major Plant Groups	Fossilized ferns and a biblical worldview Serving God as a horticulturist
83				Field Investigation 11e: Moss Structures
84	11B Plant Reproduction	235–42	Class Investigation 11f: Flower Dissection Application 11b: Flowers	God's creation of the ability to reproduce Plants as a testimony to God's glory,

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85			Application 11c: Pollination and Scattering Seeds	<p>beauty, and design of nature</p> <p>Evolution of plants and a creationist response**</p> <p>The lily of the field as an illustration of God's care for us</p> <p>Evolution and pollen in Grand Canyon strata</p> <p>Comparison of fruit growth and spiritual growth (Luke 6; Galatians 5)</p>
86	Chapter 11 Review		Application 11d: Review	
87	Chapter 11 Test			
Unit 4: The Animal Kingdom				
Chapter 12: The Invertebrates				
88	12A Introduction to the Animal Kingdom	250–52		Role of invertebrates in God's creation
	12B Sponges and Cnidarians	252–55		Differences between plants and animals in the Bible**
89	12C Flatworms and Roundworms	255–58	Application 12a: Sponges and Jellyfish	The Fall as the origin of parasitic organisms
90			Application 12b: The Planarian: A Type of Flatworm	King Herod and "worms" in the Bible**
			Research Investigation 12i: Other Sponges, Jellyfish, and Worms†	
91			Class Investigation 12h: Earthworm Dissection	
92	12D Segmented Worms: The Earthworm	259–62	Application 12c: The Earthworm	
93	12E Mollusks and Echinoderms	262–65		Role of mollusks and echinoderms in creation
94	12F Arthropods	266–70	Application 12d: Mollusks	God's design of arthropods

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95			Application 12f: Arthropods Application 12e: Insect Life Cycles	Insects in the Bible Learning from the ant in Proverbs
96	Chapter 12 Review		Application 12g: Review	
97	Chapter 12 Test			
Chapter 13: The Cold-Blooded Vertebrates: Fish, Amphibians, and Reptiles				
98	13A Introduction to Vertebrates	276–79	Application 13a: Endothermic vs. Ectothermic	Studying animals to see God's greatness and to be better stewards of God's creation
99	13B Body Systems in Vertebrates	279–87		The theme of blood in the Bible
100			Application 13b: Vertebrate Digestive System	The vertebrate heart as evidence of design and irreducible complexity Biomimicry and the image of God in man
101	13C Fish	287–89	Application 13c: Body Systems in Vertebrate Animals	God's design of fish
102			Class Investigation 13e: Fish Respiration Rates	
103			Class Investigation 13f: Frog Dissection	
104			Class Investigation 15e: Myrmecology: The Study of Ants†	
105	13D Amphibians 13E Reptiles	289–93 293–96		God's care for His creation
106	Chapter 13 Review		Application 13d: Fish, Amphibians, and Reptiles	
107	Chapter 13 Test			
Chapter 14: The Warm-Blooded Vertebrates: Birds and Mammals				
108	14A Birds	302–6	Research Investigation 14f: Man vs. Beast†	Birds and mammals as a showcase of God's power and glory God's special design of birds for flight God's care for His creation (Luke 12)
109	14B Mammals	306–13	Application 14a: Birds	Man as a special creation with a spiritual nature and made in God's

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110			Class Investigation 14d: Conserving Body Heat: Wool vs. Down Application 14b: Mammals	image Man, primates, and evolution Loving God and others with biomimicry
111			Class Investigation 14e: Observing Feathers and Hair	
112	Chapter 14 Review		Application 14c: Review	
113	Chapter 14 Test			
Chapter 15: Animal Behavior and Reproduction				
114	15A Animal Behavior	318–25	Field Investigation 15f: An Animal's Response to Its Environment† Application 15a: Innate and Learned Behaviors	God's wisdom in designing animals' behavior patterns Evolutionary and biblical views of migration and instincts Using life science to help others and serve God God as the Provider of our needs**
115	15B Animal Reproduction	326–32	Research Investigation 15h: Animal Reproduction Worksheet† Application 15b: Animal Behavior Review	Death and reproduction after the Fall Diversity God designed in animal reproduction Biblical command to honor parents** Animals in Psalm 104**
116			Application 15c: Animal Reproduction	Serving God as a marine biologist
117			Personal Investigation 15g: Sexual Reproduction: Means of Amazing Variation	
118	Chapter 15 Review		Application 15d: Animal Reproduction Review	
119	Chapter 15 Test			

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Unit 5: Interactions in the Environment				
Chapter 16: Relationships in Ecosystems				
120	16A Ecology and Ecosystems	340–43	Class Investigation 17f: Overcrowding† Field Investigation 16g: Backyard Ecosystems†	Biblical view of the relationship between animals and humans** Stewardship of resources The effect of the Fall on stewardship
121	16B The Abiotic Environment	343–48	Application 16b: The Water Cycle	God as the Overseer of all aspects of ecosystems
122	16C The Biotic Community	348–53	Class Investigation 16f: The Biotic Community of the Soil† Application 16a: Ecosystems Application 16c: Succession on a Volcano	Organization in God’s creation Limiting factors to spiritual growth
123				
124	16D Rhythms in the Ecosystem	353–58	Application 16d: Rhythms in the Ecosystem	Rhythms in creation designed by God Evolutionary view of rhythms and mutations and creationist response Learning about rhythms in nature to be better stewards of God’s creation
125	Chapter 16 Review		Application 16e: Review	
126	Chapter 16 Test			
Chapter 17: Relationships Among Organisms				
127	17A Energy Exchange Between Organisms	364–69	Personal Investigation 17e: Your Food Chain†	God’s design of the relationships among organisms Ecology and stewarding God’s creation
128	17B Relationships Between Organisms of the Same Species	369–76	Field Investigation 17h: Observing Relationships† Application 17a: Energy Exchange Between Organisms	Learning diligence from the ant (Prov. 6) Camouflage, warning coloration, and mimicry in God’s design for animals

Day(s)	Topic	Pages	Support Materials*	Bible Integration
129	17C Relationships Between Organisms of Different Species	376–80	Application 17b: Bible Creatures and Their Food Chain Positions Application 17c: Food Webs	Creation, Fall, death, and carnivorousness Jesus Christ as the only answer to a person's sin problem
130			Class Investigation 17g: Lichens	
131	Chapter 17 Review		Application 17d: Organism Relationships	
132	Chapter 17 Test			
Chapter 18: Man's Relationship with the Environment				
133	18A Living Things as Natural Resources	386–93		Ecology and caring for and using God's creation God's provision of natural resources Poverty, stewardship, and natural resources Taming animals and taming the tongue (James 3)** Extinct and endangered species and the Flood Farming and logging in the Bible **
134	18B Man's Role in the Ecosystem	393–99	Application 18a: Natural Resources	Population growth and a biblical worldview Biblical and secular views of global warming** Loving my neighbor by meeting their physical needs Conservation and wise stewardship
135	18C Pollution	399–405	Personal Investigation 18c: Estimates†	Pollution and Christian stewardship Serving God as an environmental engineer Serving God with ecology

Day(s)	Topic	Pages	Support Materials*	Bible Integration
136			Application 18b: Man's Role in the Ecosystem Class Investigation 18d: Recycling Paper	
137	Chapter 18 Review			
138	Chapter 18 Test			
Unit 6: The Complex Design of the Human Body				
Chapter 19: Support and Movement				
139	19A Introduction to the Human Body	412–15		Biblical view of what it means to be human—created in God's image, having a spiritual nature, accountable to God, sinners in need of salvation
140	19B The Integumentary System	416–21	Class Investigation 19e: Structure of the Skin	The deity and humanity of Christ** Christ as Savior and Mediator**
141	19C The Skeletal System	422–27	Application 19a: Human Skin	God's design of skin
142			Class Investigation 19f: Observing a Beef Bone	Biblical view of people as all one race Biblical condemnation of partiality (James 2) God's promises and the comparison of Israel to dead bones (Ezek. 37)
143	19D The Muscular System	428–32	Application 19b: The Skeletal System Class Investigation 19h: The Structure of Bones and Muscles	
144			Application 19c: The Muscular System Class Investigation 19g: Heat from Muscles	
145	Chapter 19 Review		Application 19d: Review	
146	Chapter 19 Test			
Chapter 20: Internal Balance				

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147	20A A Balancing Act	438–40 440–46	Application 20b: The Circulatory System†	Biblical imperative to do good to all men
148	20B The Blood			Jesus' crucifixion and the blood and water that came from His side Jesus' death and resurrection to provide salvation Christ's sweating drops of blood** Serving God as a phlebotomist
149			Class Investigation 20e: Blood	
150	20C The Blood Vessels and Heart	447–54	Class Investigation 20f: Observing a Cow Heart	God's design of the heart
151			Application 20a: The Heart	High blood pressure, stress, and God's sovereignty
152			Class Investigation 20g: Using a Stethoscope or Class Investigation 20h: Increasing Heart Rate	
153	20D The Immune System and Defense Against Disease	455–61	Application 20c: The Body's Defense System	The Fall and the Curse, disease, death, and God's provision of an immune system
154				A biblical response to those suffering from HIV/AIDS
155	20E The Excretory System	461–63	Application 20d: The Excretory System	
156	Chapter 20 Review			
157	Chapter 20 Test			
Chapter 21: Energy				
158	21A The Respiratory	468–74		Using information to glorify God and

Day(s)	Topic	Pages	Support Materials*	Bible Integration
159	System		Class Investigation 21d: Respiration	help others Irreducible complexity and the respiratory system
160			Application 21a: The Respiratory System	
161	21B The Digestive System	474–84	Application 21b: The Digestive System	The Bible's discussion of physical problems with spiritual causes
162			Class Investigation 21e: Digestive Enzymes	
163	Chapter 21 Review		Application 21c: Review	
164	Chapter 21 Test			
Chapter 22: Control				
165	22A The Nervous System	490–97		Human body as “fearfully and wonderfully made” (Ps. 139:14) God's design of reflexes The Christian's thought life Biblical vs. evolutionary view of life** Nervous system pointing to a Master Designer
166			Application 22a: The Nervous System Application 22b: Bob Uses His Brain	
167	22B The Sense Organs	497–504	Class Investigation 22g: The Pupil Reflex	The sense organs as a testimony to God's design The “senses” of Christians** The anatomical arrangement of the eye and evolution vs. creation**
168			Class Investigation 22h: Afterimages Application 22c: The Eye and Ear Class Investigation 22f: The Skin's Sensation of Temperature	
169	22C The Endocrine	505–10		Evolution and vestigial organs

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170	System		Application 22d: The Endocrine System	The Christian's response to stress** The nervous and endocrine systems as pointing to an omniscient, omnipotent Creator
171	Chapter 22 Review		Application 22e: Review	
172	Chapter 22 Test			
Chapter 23: Health				
173	23A A Biblical Approach to Health	516–19	Personal Investigation 23g: Counting Calories† Application 23b: Metabolic Rate	Stewardship of the bodies God has given us Future resurrection of the body Growing in Christlikeness Maturity
174	23B Nutrition	519–27	Application 23a: Metabolism	Spiritual energy from God's Word
175			Application 23c: Nutrition and Food Labels	Serving God as a nutritionist
176			Class Investigation 23h: Burning Calories with Exercise Field Investigation 23f: Collecting Bacteria†	
177	23C Drugs	527–32	Application 23d: Drugs	Smoking and glorifying God with our bodies (1 Cor. 6) Biblical response to drug abuse Sin as the source of man's problems and Christ as the only solution Happiness found only in Christ**
178	23D Disease	533–36	Application 23e: Disease	The Fall as the source of death and disease Reasons God may allow disease in a person's life God's design to help us fight disease God's sovereignty in all things**

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179	23E Going Forward from Life Science	537		<p>Irreducible complexity</p> <p>Science as a way to learn more about the Creator</p> <p>Life science and the wisdom, power, and glory of our Creator</p> <p>Praising and serving God with life science as a reasonable response to what He has done for us</p>
180	Chapter 23 Review			
	Chapter 23 Test			