Biology 5th Edition Lesson Plan Overview

| Day(s) | Topic | Objectives | Pages | Support Materials | Biblical Worldview |
| --- | --- | --- | --- | --- | --- |
| Chapter 1: The Living Creation |
| 1–2 | 1A The Study of Life | * Evaluate the presuppositions about life that lie at the heart of the abortion debate.
* Summarize the Creation narrative in their own words.
* Summarize the six attributes of life in their own words.
* Create a graphic organizer that relates the six attributes of life to specific biological structures and functions.
* Diagram the sources of energy for a living organism.
* Diagram the sources of information for a living organism.
 | 3–9 | Extra Content: Extra Case Study | * Sanctity of human life
* Relationship between God’s Word and science
* God and Creation (the event)
* Fall of creation
* Redemption of the world
* Physical and spiritual life
* God’s care for creation
 |
| 3–4 | 1B Views of Life | * Relate observations, interpretations, and models.
* Compare the changing nature of science with the unchanging nature of God and His Word.
* Determine when science is most useful despite its limitations.
* Compare views of life and science that different people have.
 | 10–15 |  | * Science in light of a biblical worldview
* Dominion through modeling
 |
| 5 | Lab 1A, A Method to This Madness  |
| 6 | 1C Balance of Life | * Relate the work of conservation to obeying Genesis 1:28 and Matthew 22:39.
* Explain the balance between preserving the earth’s resources and using them to help other people.
* Compare the positive and negative ways that the tools of biology can be used.
* Give examples of how the sciences can work together to fulfill the Creation Mandate.
 | 16–18 |  | * Using biology to practice dominion
* Glorifying God through science
 |
| Chapter 1 Review |
| 7 | Lab 1B, More Than Meets the Eye |
| 8 | Chapter 1 Test |

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| Chapter 2: The Chemistry of Living Things |
| 9–10 | 2A Matter, Energy, and Life | * Compare the different types of energy using examples.
* Compare chemical and physical changes using examples.
* Compare ionic and covalent compounds.
* Create a hierarchy chart including the terms matter, atom, element, proton, neutron, electron, compound, and molecule.
 | 22–27 |  | * Sustaining power of God in nature
* God’s role both in creating and sustaining life
 |
| 11 | Lab 2A, Lost in the Woods |
| 12 | 2B The Chemical Processes of Life | * Relate Brownian motion to diffusion and the dissolving process.
* Label the activation energy, reactants, and products on an energy diagram of both exothermic and endothermic reactions.
* Compare the actions of enzymes and inhibitors.
* Give examples of how people can use chemistry to understand and help living things, especially people.
 | 28–33 |  | * Declaring God’s glory through good stewardship
 |
| 13–14 | 2C Biochemistry | * Demonstrate how water is essential to life’s design.
* Define an organic compound in their own words.
* Describe the difference between an organic compound and other kinds of compounds.
* Give one example of a carbohydrate, protein, lipid, sugar, and nucleic acid, and describe how their chemical structures are different.
 | 34–39 |  |  |
| Chapter 2 Review |
| 15 | Lab 2B, Bubbles of Life |
| 16 | Chapter 2 Test |

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| --- | --- | --- | --- | --- | --- |
| Chapter 3: Ecology |
| 17 | 3A Our Living Planet | * Distinguish between ecosystems and the biosphere.
* Explain how biotic and abiotic factors work together to sustain life.
 | 45–49 |  | * God’s design of and care for living things
* Fall of creation
* Future complete redemption
* Man’s responsibility to be good stewards of God’s creation
 |
| 18–19 | 3B Biomes | * Classify a biome on the basis of its biotic and abiotic factors.
* Compare biomes and vertical zonation.
 | 50–55 | Extra Content: Kilimanjaro Climate Zones |
| 20 | 3C Web of Life | * Use a food web and an ecological pyramid to represent the relationships between producers and consumers in an ecosystem.
* Give examples of neutralism, competition, predation, parasitism, commensalism, and mutualism.
 | 56–61 |  |
| 21 | Lab 3A, Tag! |
| Lab 3B, Must You Be So Competitive? |
| 22 | Chapter 3 Review |
| 23 | Chapter 3 Test |
| Chapter 4: Interacting with the Biosphere |
| 24–25 | 4A Sustainability | * Trace the flow of materials through the water, oxygen, carbon, and nitrogen cycles.
* List and give examples of the factors that either limit or encourage population growth and biodiversity.
* Distinguish between primary and secondary succession.
* Defend a biblical view of the predictability and orderliness of ecosystems.
 | 66–75 |  | * Dominion through modeling
* Reference to the water cycle in the Bible
 |
| 26 | Lab 4A, Forest or Farm? |
| 27–28 | 4B The Human Niche | * Explain from a biblical worldview the role that people play in managing the earth.
* Evaluate arguments about changes in the environment.
* Identify evolutionary bias in the field of ecology.
* Relate different fields of science to ecology.
 | 76–81 | Webquest Rubric | * Need for balance in man’s stewardship of the earth
* God’s care and provision for His creation
* A biblical look at ecological issues (greenhouse gases, ecological footprints, climate change, and extinction rates)
* Man’s responsibility to be good stewards of God’s creation
 |
| Chapter 4 Review |
| 29 | Lab 4B, Hale Hardwoods or Sickly Cedars? |
| 30 | Chapter 4 Test |
| Chapter 5: Cytology |
| 31–32 | 5A The Structure and Function of Cells | * Relate the modern cell theory to the changing nature of models.
* Use a graphic organizer to compare unicellular, multicellular, and colonial organisms.
* Differentiate between prokaryotic and eukaryotic cells.
* Illustrate a typical cell and describe the functions of its parts.
* Suggest ways to use the complexity of the cell to better help others.
 | 89–94 |  | * God’s role as Creator of all of life
* Man’s role in obeying God and serving others
* The purpose of science as modeling and not ultimate truth
* Interpreting data on the basis of worldview
 |
| 33 | Lab 5A, Dwell on the Cell |
| 34 | 5B The Cell Environment | * Describe how cells in a particular cell environment maintain balance.
* Compare the ways that solutions affect cells.
* List and illustrate the different ways that molecules are transported across the cell membrane.
 | 95–101 |  | * Serving God as a medical researcher
 |
| 35 | Lab 5B, The Leaking Lab |
| Chapter 5 Review |
| 36 | Chapter 5 Test |
| Chapter 6: Energy and Information in the Cell |
| 37 | 6A Metabolism | * Explain how energy is stored in ATP molecules.
* Track the flow of energy from ATP to ADP.
 | 106–8 |  | * Evidence of design at the molecular level
 |
| 38 | Lab 6A, No Swimming Today |
| 39–40 | 6B DNA and Protein Synthesis | * Compare the structures of DNA and RNA.
* Summarize the model of DNA replication.
* Differentiate between transcription and translation.
* Explain how a protein comes from DNA.
 | 109–15 | Webquest Rubric | * Using science to help others
 |
| Chapter 6 Review |
| 41 | Lab 6B, Hidden Code |
| 42 | Chapter 6 Test |

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| Chapter 7: Cell Processes |
| 43–44 | 7A Photosynthesis | * Relate photosynthesis to God’s provision for life.
* Give examples for exercising good and wise dominion over the process of photosynthesis.
* Diagram the reactants and products of photosynthesis using a chemical equation.
* Relate the roles of pigments, light, and chemical energy to the process of photosynthesis.
* Outline the steps of the light-dependent and light-independent reactions.
* Give examples of factors that affect photosynthesis
 | 118–22 |  | * God’s provision and care for His creation
 |
| Lab 7A, Whatever Floats Your Leaf |
| 45–46 | 7B Cellular Respiration and Fermentation | * Trace the flow of energy from glucose in glycolysis to ATP in the electron transport chain.
* List the amounts of ATP produced in each step of aerobic respiration.
* Differentiate between aerobic respiration and fermentation.
* Explain the roles of aerobic respiration and fermentation in the environment.
* Relate cellular respiration to its effects on the environment.
* Show how God’s care for creation is seen in the current models of cell processes.
 | 122–28 |  | * Dominion through modeling
 |
| 47 | Lab 7B, On the Road to Alternative Fuels |
| Chapter 7 Review |
| 48 | Chapter 7 Test |

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| --- | --- | --- | --- | --- | --- |
| Chapter 8 Basic Genetics |
| 49 | 8A Cell Division | * Differentiate between a gene and a chromosome.
* Differentiate between a sex chromosome and an autosome.
* Relate DNA to chromosomes.
* Trace the growth and reproduction of a cell through the cell cycle.
* Draw the phases of mitosis and meiosis.
* Compare mitosis and meiosis.
 | 132–37 |  | * Good stewardship of animal life
 |
| 50 | Lab 8A, Let’s Split |
| 51–52 | 8B The Inheritance of Traits | * List the three genetic principles proposed by Mendel.
* Differentiate between recessive and dominant traits.
* Set up monohybrid and dihybrid crosses with Punnett squares.
* Explain the differences between the kinds of genetic inheritance.
* Explain the worldview implications of correctly understanding the genetics of skin color.
 | 137–46 | Lab 8B, The Punnett Square Dance:Part 1 Simple DominancePart 2 Incomplete DominancePart 3 CodominanceExtra Content: Branch Diagrams | * Evidence of God’s design at the molecular level
* Effect of the Fall at the molecular level
* Importance of understanding biblical principles as they apply to scientific issues
* Ethical issues related to care for animal life
 |
| 53 | 8C Gene Expression | * Explain how genes control cell development.
* Relate the environment to gene expression.
* Differentiate between embryonic and somatic stem cells.
* Give biblical support for ethically using animals to benefit people.
 | 148–51 | (Lab 8B, continued): Part 4 Multiple AllelesPart 5 Polygenic Inheritance | * Using scientific discoveries to deal with the consequences of the curse
* Evaluating research and technology in light of Scripture
 |
| 54 | Chapter 8 Review |  | (Lab 8B, continued): Part 6 Sex-linked  TraitsExtra Content: Question 28 Genetic Graphic Organizer |  |
| 55 | Chapter 8 Test |

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| Chapter 9 Advanced Genetics |
| 56 | 9A Population Genetics | * List the factors that affect the gene pool.
* List the different sources of genetic variation.
* Differentiate between genetic drift and gene flow.
* Evaluate the models of genetic change from a biblical viewpoint.
* Analyze how genetic load can affect the genetic variability of a population.
 | 157–60 |  | * Using research and biotechnology to serve people
* Variety in creation as part of God’s design for it
* Christian worldview in understanding changes in populations
 |
| 57–58 | 9B Mutations | * Differentiate between chromosome and gene mutation.
* Create a model that illustrates the three types of point mutations.
* Explain how a gene mutation can affect a cell.
* Explain how nondisjunction affects the chromosome number.
* Give examples of the ways that a mutation can be expressed in an organism.
 | 162–67 |  | * Stewardship in agriculture
* Population growth as an aid to dominion
* Value of all human life
* Using technology to improve human life
 |
| 59 | Lab 9A, Fix It! |
| 60 | 9C Genetic Engineering | * Give support for the importance of gene sequencing.
* Diagram how a gene can be transferred from one organism to another.
* List and explain four ways that DNA can be manipulated.
* Evaluate the benefits and dangers of DNA manipulation.
 | 168–73 | Webquest Rubric | * Evaluating research in the light of the Bible
* Using scientific discoveries to glorify God and help others
 |
| 61–62 | Lab 9B, Whodunit? |
| Chapter 9 Review |
| 63 | Chapter 9 Test |

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| Chapter 10 When Worldviews Collide |
| 64–65 | 10A The Origins Question | * Summarize the history of evolutionary thinking.
* List and define the three primary supports for modern evolutionary theory.
* Evaluate popular nonliteral interpretations of the Creation account.
* Recognize the two main differences between biblical creation and evolution.
 | 178–87 | Lab 10A, In Darwin’s Own Words | * Biblical worldview versus naturalistic worldview
* Supremacy and inerrancy of Scripture
* Importance of and support for a literal interpretation of Scripture
* Results of believing evolutionary theory
* Death as a result of the Fall
* Catastrophic results of the Flood
* Role of the Flood in fossil formation
* God’s creation of all life
* Need for faith in Christ
* Creationist presuppositions versus evolutionist presuppositions
 |
| 66–67 | 10B Change in Nature | * Explain the different ways that populations of organisms can change.
* Differentiate between adaptation and evolution.
* Evaluate the different supports for evolution in light of a biblical worldview.
 | 187–200 | Webquest Rubric | * Infallibility of the Bible
* Scripture as the ultimate, unchanging standard
* God’s Word versus man’s wisdom
* Relevance of the literal Creation account to the Christian faith
* Intelligent design and biblical creationism
* God’s design and efficiency in creation
* Response to nonliteral interpretations of Creation
* God’s merciful plan of redemption
* Special creation of man and God’s care for him
* God’s glory in creation
 |
| 68 | Chapter 10 Review | Lab 10B, Worldview Sleuthing |  |
| 69 | Chapter 10 Test |

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| Chapter 11 Classifying Life |
| 70–71 | 11A Taxonomy | * Discuss the importance of classifying living things.
* Associate classification with the model-making nature of biology.
* List the eight levels of taxonomy.
* Create a graphic organizer illustrating the identifying traits and examples of the seven kingdoms.
* Construct a scientific name.
 | 207–12 | Lab 11A, The Key Concept | * God’s design in creation
* Use of knowledge and opportunity as a means of practicing good dominion
* Creationist view of speciation
* Importance of evaluating things on the basis of Scripture and its worldview
 |
| 72–73 | 11B Unity and Diversity | * Differentiate between traditional and modern classification.
* Respond to the evolutionary argument that classification can be used to support evolution.
 | 213–17 | Lab 11B, All Myxed Up | * God’s design in creation
* Variety as an expression of God’s creativity
 |
| Chapter 11 Review |
| 74 | Chapter 11 Test |
| Chapter 12 Prokaryotes and Viruses |
| 75–76 | 12A Prokaryotes | * Distinguish archaea from bacteria.
* Draw the structure of a bacterium.
* Summarize the different ways that bacteria can transfer their DNA.
* Explain the function of bacteria in the environment.
* Identify several diseases caused by bacteria.
 | 221–27 |  | * Creationist presuppositions versus evolutionist presuppositions
* Similarity in form or function as an evidence of God’s design
* Success of pathogenic organisms as a result of the Fall and Curse
 |
| Lab 12A, Squeaky Clean |
| 77–78 | 12B Viruses | * Identify viruses as carriers of genetic information.
* Compare viruses to bacteria.
* Label the structures of a virus.
* Differentiate between a lytic and a lysogenic infection.
* Identify useful applications of and diseases caused by viruses.
 | 228–33 |  | * Advances in biotechnology as a means of caring for people
* Disease as a result of sin
 |
| 79 | Lab 12B, One Slick Solution |
| 80 | Chapter 12 Review |
| 81 | Chapter 12 Test |

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| Chapter 13: Protists and Fungi |
| 82–83 | 13A Kingdom Protozoa | * Explain kingdom protozoa’s place in classification.
* Use drawings or other models to depict the structures and movements of common protozoans.
* Describe the different kinds of protozoan reproduction.
* List several protozoans that are harmful to people and the environment.
 | 238–43 |  | * Use of knowledge to improve people’s lives
* Managing pathogens to protect life
* Serving with the discipline to bring God glory
 |
| Lab 13A, Wee, Watery World |
| 84 | 13B Kingdom Chromista | * Compare the two groups of protists using a graphic organizer.
* Describe the different kinds of chromist reproduction.
* Evaluate the evolutionary idea that multicellular organisms came from unicellular protists.
* Describe how chromists contribute to life on Earth.
 | 244–47 |  | * Creationist presuppositions versus evolutionist presuppositions
* Variety as an expression of God’s creativity
 |
| 85–86 | 13C Kingdom Fungi | * Classify fungi on the basis of their reproduction.
* Draw and label the structure of a mushroom.
* Describe the ways that fungi reproduce.
* Explain the relationship of algae and fungi in lichens.
* Suggest both beneficial and harmful ways that fungi interact with the environment.
 | 248–54 |  | * Serving with the discipline to bring God glory
* The modeling nature of science
* Questioning the evolutionary paradigm shaping current classification in biology
 |
| Lab 13B, Zygo’s a Fun Guy |
| 87 | Chapter 13 Review |
| 88 | Chapter 13 Test |
| Final Material |
| 89 | Semester Exam Review |
| 90 | Semester Exam |

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| Chapter 14: Plant Classification and Structure |
| 91 | 14A Kingdom Plantae | * Differentiate plants from other living organisms.
* Differentiate between the four types of plants.
* Relate plant size to tissue type.
 | 259–61 |  | * God’s design in His creation
* God’s care of His creation
* Good stewardship of God’s creation
 |
| 92–93 | 14B The Structure of Plants | * Relate the different types of plant cells and tissues to their function in plant organs.
* Diagram the structure of leaves, stems, and roots.
* Explain the function of leaves, stems, and roots.
 | 262–69 |  |  |
| 94 | Lab 14A, Name that Plant |
| 95–96 | 14C The Life Cycles of Plants | * Describe the life cycles of bryophytes and ferns.
* Compare gymnosperm and angiosperm reproduction.
* Diagram the structure of a flower.
* Diagram the structure of a seed.
* Create a flow chart that illustrates the life cycle of an angiosperm.
* Evaluate using plants that are easily misused.
 | 270–79 |  | * Good stewardship of God’s creation
* God’s design in His creation
 |
| Chapter 14 Review |
| 97 | Lab 14B, A Fruitful Lab |
| 98 | Chapter 14 Test |
| Chapter 15: Plant Processes |
| 99 | 15A Transporting Nutrients | * Discuss the theories for the movement of sap throughout a plant.
* Trace the path of water and minerals through a plant.
* Explain how nutrients from the soil enter a plant.
* Understand that scientific models are not truth and can and should be updated to incorporate new data.
 | 285–87 | Lab 15B, Too Salty? | * Good stewardship of God’s creation
* Modeling nature of science versus the eternality of God’s truth
 |
| 100–101 | 15B Plant Responses | * Explain the effects that different hormones have on plants.
* Relate plant growth to different stimuli in the environment.
* Describe the different ways that light affects plants.
 | 288–92 |  | * God’s care of His creation
 |

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| Chapter 15: Plant Processes (continued) |
| 102 | Lab 15A, Bananamania |
| 103 | 15C Using Plants Wisely | * Describe the different ways that plants can be produced vegetatively.
* List several ways that people use plants.
* Assess the importance of plants to biogeochemical cycles.
* Analyze, on the basis of a biblical worldview, the advantages and disadvantages of genetically modifying plants.
 | 293–98 | Webquest Rubric | * Man’s responsibility to be wise stewards of God’s creation
* God’s provision for His creation
 |
| Chapter 15 Review |
| 104 | Chapter 15 Test |
| Chapter 16: Invertebrates |
| 105 | 16A Kingdom Animalia | * List the characteristics of animals and give examples.
* Use a T-chart to compare endotherms and ectotherms.
* Relate animal body plans and symmetry to germ layers.
* List and describe the different kinds of sexual reproduction in animals.
* Relate the different responses animals have to their environments and to each other.
 | 305–12 |  | * Wise management of God’s creation
* Man’s dominion over animals
* God’s care for His creation
* Living things reproduce after their own kind.
 |
| 106–107 | 16B Sponges and Cnidarians | * Describe the general characteristics of sponges.
* Explain how sponges feed and reproduce.
* Create a concept definition map that communicates the general characteristics of cnidarians.
* Describe how cnidarians feed and reproduce.
* Explain how sponges and cnidarians contribute to the environment.
 | 312–17 |  | * Wise stewardship of natural resources
 |
| Lab 16A, The Immortals Next Door |

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| Chapter 16: Invertebrates (continued) |
| 108–109 | 16C Worms | * Differentiate between flatworms, roundworms, and segmented worms.
* Describe the general characteristics of worms.
* Explain how the three phyla of worms feed and reproduce.
* Give examples of how we can manage and use worm populations in the environment.
 | 318–22 |  |  |
| 16D Mollusks | * Describe the general characteristics of mollusks.
* Differentiate between bivalves, gastropods, and cephalopods.
* Explain how mollusks reproduce.
* Give examples of how mollusks interact with their environment.
 | 323–25 |  | * Using stewardship to glorify God
 |
| 110 | Lab 16B, Fish Tank Fiend! |
| 111 | 16E Echinoderms | * Describe the general characteristics of echinoderms.
* Compare the five classes of echinoderms using a graphic organizer.
* Explain how echinoderms reproduce.
* Give examples of how echinoderms interact with their environment.
 | 326–28 |  | * Unique design in echinoderms as evidence for creation
* Creation declares the glory of God.
 |
| Chapter 16 Review |
| 112 | Chapter 16 Test |
| Chapter 17: Arthropods |
| 113 | 17A Arthropod Introduction and Chelicerates | * Describe the general characteristics of arthropods.
* List the general characteristics of chelicerates.
* Explain how chelicerates feed and reproduce.
* Describe how chelicerates affect their environment.
 | 333–38 |  | * Unexpected consequences of man’s dominion efforts
* Analyzing presuppositions
 |
| 114–115 | 17B Crustaceans | * Differentiate crustaceans from other arthropods.
* Explain how crustaceans feed and reproduce.
* Give examples of how crustaceans exert influence on their environment.
 | 338–41 |  |  |
| Lab 17A, Take a Crack at Crayfish |
| Chapter 17: Arthropods (continued) |
| 116 | 17C Insects | * List the general characteristics of insects.
* Explain how insects feed and reproduce.
* Suggest ways to wisely control insects and use them in the environment to help people.
 | 341–47 |  | * God’s provision for His creation
* Managing God’s resources to meet the needs of His creatures
 |
| Chapter 17 Review |
| 117 | Lab 17B, Cricket Caper |
| 118 | Chapter 17 Test |
| Chapter 18: Ectothermic Vertebrates |
| 119–120 | 18A Chordate Introduction and Fish | * Describe the general characteristics of fish.
* Compare hagfish and lampreys to other fish.
* Differentiate between cartilaginous fishes and bony fishes.
* Trace the flow of oxygen through the circulatory system of a bony fish.
* Identify the major organs of the circulatory, nervous, digestive, excretory, and reproductive systems of a bony fish.
 | 351–57 | Lab 18A, Something Fishy Going On | * Humans created in the image of God
* Man’s responsibility to exercise informed, balanced dominion over all animal life
* Evidence of design in creation
 |
| 121 | 18B Amphibians | * Describe the general characteristics of amphibians.
* Identify the major organs of the circulatory, nervous, digestive, excretory, and reproductive systems of a frog.
* Recommend a way that amphibians can be biblically conserved.
 | 358–62 |  | * Making wise decisions in exercising dominion
 |
| 122 | 18C Reptiles | * List the structures of an amniotic egg and their functions.
* Describe the general characteristics of reptiles.
* Compare the four orders of reptiles.
* Identify the major organs of the circulatory, nervous, digestive, excretory, and reproductive systems of a reptile.
 | 363–69 |  | * God’s design and use of reptiles
* Dinosaurs in the Bible
 |
| Chapter 18 Review |
| 123 | Finish Lab 18A, Something Fishy Going On. Complete Lab 18B, Reptile Repasts |
| 124 | Chapter 18 Test |

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| Chapter 19: Endothermic Vertebrates |
| 125–126 | 19A Birds | * Describe the general characteristics of birds.
* Label the major organs of the circulatory, nervous, digestive, excretory, and reproductive systems of a bird.
* Explain how birds are designed for flight.
* Relate birds’ beaks, wings, and feet to their environments.
* List several behaviors of birds.
 | 374–81 | Lab 19A, Our Fine, Feathered Friends | * Interpreting evidence on the basis of a Biblical worldview
* Structure and function of the bird’s body as evidence of God’s design
 |
| 127–128 | 19B Mammals | * Describe the general characteristics of mammals.
* Identify the major organs of the circulatory, nervous, digestive, excretory, and reproductive systems of a mammal.
* Compare the reproduction strategies of eutherians, monotremes, and marsupials.
* Compare the major orders of mammals.
* Suggest several ways that a scientist can produce useful science during an evolution-driven study.
 | 382–89 |  | * Structure and function of the bird’s body as evidence of God’s design
* Man’s dominion over animals
* God’s preservation of His creation
 |
| 129 | Lab 19B, Why, It’s Amazing! |
| 130 | Chapter 19 Review |
| 131 | Chapter 19 Test |
| Chapter 20: Protection |
| 132 | 20A The Study of You | * Explain how humans are different from other living things.
* Differentiate between the kinds of tissues found in the human body.
* Summarize the function of each system in the human body.
* Evaluate how believers should view the study of the body.
 | 395–400 |  | * The meaning of man’s being created in God’s image
* Man as a spiritual being
* Exercising dominion in caring for human life—that of others and of ourselves
* The image of God in man marred by the Fall
* Man’s sinful nature
* Developing an understanding of science from a biblical worldview
 |
| 133 | Lab 20A, Chill Out! |
| 134 | 20B The Integumentary System | * List the layers that make up the integumentary system and their functions.
* Describe the purposes of the skin.
* Explain how each body system presents itself in the skin.
 | 401–4 |  | * Evidence of design in neural receptors
 |
| Chapter 20: Protection (continued) |
| 135–136 | 20C The Lymphatic System and Immunity | * List the tissues and organs of the lymphatic system.
* Describe what lymph does as it travels through the different systems of the body.
* Explain the role of the lymphatic system in immunity and homeostasis.
* Compare humoral and cell-mediated immunity.
* List several ways that the immune system can react.
 | 405–10 | Lab 20B, Are You Aware? | * Interpreting data from a biblical worldview
* Humans are fearfully and wonderfully created.
* Sin producing disease and suffering
 |
| Chapter 20 Review |
| 137 | Chapter 20 Test |
| Chapter 21: Support and Movement |
| 138–139 | 21A The Skeletal System | * Differentiate between the axial and appendicular skeletons.
* Label the main bones of the skeletal system on a diagram.
* Describe the structure of a bone.
* Differentiate between compact bone and spongy bone.
* Relate the different joint structures to their movements.
* Explain how a bone forms and is remodeled.
 | 415–20 |  | * Using science to practice dominion in helping people
* Structure and function of the human skeletal system as evidence of God’s design
 |
| 140 | Lab 21A, Dry Bones |
| 141–142 | 21B The Muscular System | * Differentiate between the three kinds of muscle and describe their roles.
* Label the main muscles of the muscular system on a diagram.
* Illustrate the process of muscle movement on the cellular level, using drawings or a model.
* Describe how muscles use energy to contract.
* Explain how muscles rely on other muscles and body systems to operate.
* Evaluate the idea that combining different areas of science is a way to better solve problems and to help others.
 | 420–25 |  | * Exercising dominion to help improve the quality of life for others
 |
| 143 | Lab 21B, I’m So Tired! |
| 144 | Chapter 21 Review |
| 145 | Chapter 21 Test |
| Chapter 22: Transport |
| 146–147 | 22A The Respiratory System | * List the major organs of the respiratory system and describe their functions.
* Explain how gas is exchanged in the lungs.
* Diagram the process of breathing.
* List factors that affect breathing.
 | 430–33 |  | * Wise stewardship of the human body
 |
| 148 | Lab 22A, Relax and Take a Deep Breath |
| 149-150 | 22B The Circulatory System | * List the major organs and tissues of the circulatory system and describe their functions.
* Describe the structure of the heart.
* Describe the purpose of each part of blood.
* Differentiate between the flow of blood through an artery and through a vein.
* Relate the circulatory system to the respiratory system.
* Trace the flow of oxygen and carbon dioxide through the heart and lungs.
* Differentiate between systemic and pulmonary circulation.
 | 434–39 |  | * Our bodies are not our own.
* Caring for the body for God’s glory
 |
| 151 | Lab 22B, Feeling the Pressure |
| 152 | Chapter 22 Review |
| 153 | Chapter 22 Test |
| Chapter 23: Energy |
| 154–155 | 23A The Digestive System | * List the six nutrients the body needs and describe their roles.
* Explain how the body takes in, distributes, and eliminates nutrients.
* Compare mechanical and chemical digestion.
* List the organs of the digestive system and describe their functions.
* Explain how digestion provides the glucose needed for cellular respiration.
* Suggest ways to help people take care of their bodies by balancing their food intake with their activity level.
 | 444–50 |  | * Caring for our bodies as good stewardship
* Eating and exercising to glorify God
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| Day(s) | Topic | Objectives | Pages | Support Materials | Biblical Worldview |
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| Chapter 23: Energy (continued) |
| 156 | Lab 23, A Calorimetry in a Can |
| 157 | 23B The Urinary System | * List the organs of the urinary system and describe their functions.
* Explain how the kidneys filter and recycle the materials in blood.
* List organs from other body systems that are involved in excretion.
* Explain why drinking water helps the body maintain homeostasis.
 | 452–55 |  | * Keeping your body healthy, so that you can glorify the Lord in your best service
 |
| 158–159 | Lab 23B, What a Waste! |
| Chapter 23 Review |
| 160 | Chapter 23 Test |
| Chapter 24: Communication |
| 161–162 | 24A The Nervous System | * Differentiate between the central nervous system and the peripheral nervous system.
* Trace the flow of a signal through a neuron.
* Label the parts of the brain.
* Explain how the hypothalamus acts as the link between the nervous and endocrine systems.
* Explain how the three types of neurons work together in a reflex arc.
 | 459–65 |  | * Improving the quality of life of God’s image bearers
* God’s design of the nervous system
 |
| 163–164 | 24B The Sensory Organs | * Describe the major structures of the eye.
* Describe the major structures of the ear.
* Describe the purpose of each kind of sensory receptor.
* Describe how each kind of sensory receptor works with sensory organs.
* Relate the importance of sensing the world to a person’s growth and development.
* Relate the ability to feel pain to God’s care for mankind.
 | 465–73 |  | * Preventing disease to improve the quality of human life
 |
| 165 | Lab 24A, Sensational! |

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| Chapter 24: Communication (continued) |
| 166–167 | 24C The Endocrine System | * Differentiate between the speed of the nervous system and that of the endocrine system.
* Explain how steroid and nonsteroid hormones communicate with cells.
* Describe the function of the different glands and the hormones they secrete.
* Explain how glands are controlled by negative feedback.
* Describe how hormones prepare the body for puberty.
* Explain how hormones are affected by our fallen nature.
 | 473–78 |  | * Man as a spiritual being
* God’s grace is sufficient to meet all our needs.
 |
| Chapter 24 Review |
| 168 | Chapter 24 Test |
| 169–171 | Lab 24B, Rat Recap |
| Chapter 25: Reproduction, Growth, and Health |
| 172–173 | 25A The Reproductive System | * Describe the function of the male reproductive organs.
* Describe the function of the female reproductive organs.
* Explain how an ovum is produced, fertilized, and transported from an ovary to the uterus.
* Explain how sin and the Curse affect human sexuality and reproduction.
 | 483–91 | Lab 25A, Unusual Development | * Fulfilling the Creation Mandate to have children
* Man is God’s highest creation.
* God alone has the authority to determine what is good.
* The image of God in man marred by the Fall
* Biblical principles of marriage
* Relationship between man and wife as an example of the relationship between Christ and the church
* The Bible’s challenge to have a pure life
* Christ’s provision of Redemption
* Avoiding situations that can lead to temptation
* The value of human life
* The Bible and abortion
* Grace to deal with suffering
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| Day(s) | Topic | Objectives | Pages | Support Materials | Biblical Worldview |
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| Chapter 25: Reproduction, Growth, and Health (continued) |
| 174–175 | 25B Human Growth and Development | * Trace the development of an embryo from implantation to birth.
* Compare the body of a child to that of an infant.
* Describe the changes in a person’s body associated with puberty.
* Associate the changes in puberty with the function of the endocrine system.
* Predict how a student’s body will change as he gets older.
 | 491–97 | Lab 25B, Fast Food Fact-Finding | * The Bible’s challenge to have a pure life
* Thinking about death from a biblical perspective
* Sex and gender are designed by God to be aligned.
* God’s way is always best.
* God determines the number of our days.
* Christians will spend an eternity in heaven.
* Christ has conquered death.
 |
| 176–177 | 25C Balanced Living | * List what substances people can ingest that affect the body’s homeostasis.
* Explain how exercise, sleep, and hygiene are linked to maintaining homeostasis.
* Relate the importance of mental health and healthy relationships to physical health.
* Evaluate whether the decisions that people make regarding health are based on God’s Word.
 | 497–502 |  | * Our bodies are the temple of the Holy Spirit.
* We should do all to the glory of God.
* Christ alone satisfies my needs.
* Human life is physical, mental, social, and spiritual.
* Biblical principles of marriage
* Our hope can be found only in Christ.
 |
| Chapter 25 Review |
| 178 | Chapter 25 Test |
| Final Material |
| 179 | Semester Exam Review |
| 180 | Semester Exam |