Lesson Plan Overview

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| Lesson | Teacher’s Edition | Student Text | Activity Manual | Objectives and Biblical Worldview | Process Skills |
| 1 | 1–3 | 1–3 | 1 | • Define worldview• List characteristics of a Christian worldview• Apply a Christian worldview to science |  |
| Chapter 1: Cold-Blooded Animals |
| 2 | 4–9 | 4–9 | 3–5 | • Recognize that knowledge is needed to care for animals• Understand that scientists group animals with similar characteristics• Differentiate between invertebrates and vertebrates• Differentiate between warm-blooded and cold-blooded vertebratesPeople as stewards of God’s creationGod’s variety in creationGod’s design of cold-blooded vertebrates |  |
| 3 | 10–13 | 10–13 | 4, 6–8 | • Name three groups of cold-blooded vertebrates• List common characteristics of fishGod’s design of fishGod’s power over creation |  |
| 4 | 14–15 | 14–15 | 4, 9, 11, 13 | • Name three kinds of amphibians • Identify characteristics of amphibians• Sequence and describe the stages of frog metamorphosis |  |
| 5 | 16–19 | 16–19 | 4, 15, 17–18 | • Identify characteristics of reptiles• Differentiate between reptiles and amphibians• Understand that God gave people the job to manage animalsGod’s omnipotenceGod’s variety in creationPeople as stewards of God’s creation |  |
| 6 | 20–21 | 20–21 | 19–20 | Measure Up: Temperature• Identify that scientists use Celsius thermometers to measure temperature• Demonstrate how to use and read a thermometer• Write about the characteristics used to identify a cold-blooded animal• Apply knowledge to everyday situations | Measuring |
| 7 | 22–23 |  | 21–22 | Science Skill: A Science Experiment• Use a scientific method  | PredictingObservingMeasuringInferring |
| 8 | 24–25 | 22–23 | 23–24 | Activity: Leaping Lizards• Use a thermometer to measure temperature• Infer how a cold-blooded animal depends on the temperature of its environmentPeople as stewards of God’s creation | MeasuringInferring |
| 9 | 26 |  | 25–26 | Chapter Review• Recall concepts and terms from Chapter 1 |  |
| 10 | 27 |  |  | Chapter 1 Test• Demonstrate knowledge of concepts taught in Chapter 1  |  |

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| Chapter 2: Warm-Blooded Animals |
| 11 | 28–31 | 24–27 | 27 | • Recognize that people are different from animals • Identify groups of warm-blooded animalsExploration: Bird Watching• Make a bird feeder• Observe birds at a bird feeder People as God’s image-bearers |  |
| 12 | 32–35 | 28–31 | 29–32 | • List characteristics of birds• List ways to identify birdsGod’s design of birdsGod’s provision for His creation |  |
| 13–14 | 36–42 | 32–38 | 29, 33–36 | • Identify characteristics of mammals• Describe ways to identify mammals• Identify a mammal from each group• Describe how humans are different from mammals• Explain why people need to understand warm-blooded animalsGod’s provision for His creationGod’s variety in creationPeople as God’s image-bearers People as stewards of God’s creation |  |
| 15 | 43–45 | 39–41 | 37–40 | • Differentiate between learned behaviors and instincts• Understand that instincts are given by God• Write reasons for classifying a marine mammal and characteristics of the environment it needsGod’s provision for His creationGod’s power over His creationGod’s use of creation for His glory |  |
| 16 | 46–47 | 42–43 |  | Activity: Animal Books• Research information about three vertebrates• Classify animals as fish, amphibians, reptiles, birds, or mammals• Communicate information to others | CommunicatingClassifying |
| 17 | 48 |  | 41–42 | ChapterReview• Recall concepts and terms from Chapter 2 |  |
| 18 | 49 |  |  | Chapter 2 Test• Demonstrate knowledge of concepts taught in Chapter 2 |  |

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| Chapter 3: Plants |
| 19 | 50–53 | 44–47 | 43–44 | • Recognize that using plants is part of managing the earth• Compare how plants and animals get their nutrients• Describe the function of each part of a plantPeople as stewards of God’s creationGod’s provision for His creation |  |
| 20 | 54–57 | 48–51 | 45–46 | • Use a diagram to describe the process of photosynthesis• Describe three things plants need for photosynthesis• Describe two things plants produce during photosynthesisGod’s perfect designGod’s provision for His creation |  |
| 21 | 58–59 | 52–53 | 47 | Measure Up: Length• Identify the metric unit for measuring length and distance• Demonstrate the use of a centimeter ruler and meter stick | Measuring |
| 22 | 60–61 | 54–55 | 49–50 | Activity: A Place to Grow• Demonstrate the use of a centimeter ruler• Recognize the importance of sunlight for plant growthPeople as stewards of God’s creation | MeasuringObserving |
| 23 | 62–65 | 56–59 | 51–52 | • Identify parts of plants that are eaten• Identify ways God created plants to be used by animals and people• Write about two reasons why photosynthesis is important to people and animalsGod’s provision for His creationPeople as stewards of God’s creationGod’s perfect designPeople’s use of science to glorify God |  |
| 24 | 66 |  | 53–54 | Chapter Review• Recall concepts and terms from Chapter 3 |  |
| 25 | 67 |  |  | Chapter 3 Test• Demonstrate knowledge of concepts taught in Chapter 3 |  |

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| Chapter 4: Ecosystems |
| 26 | 68–73 | 60–65 | 55–57 | • Recognize that the Fall was an event that changed the earth• Identify three characteristics of living things• Describe how an ecosystem, environment, population, habitat, and community relate to one another Effects of the FallPeople’s need for salvation |  |
| 27 | 74–77 | 66–69 | 59–60 | • Describe how producers, consumers, and decomposers get their energy from the sun• Differentiate between producers, consumers, and decomposers• Identify herbivores, omnivores, and carnivores as types of consumers and describe what they eatPeople as stewards of God’s creation |  |
| 28 | 78–81 | 70–73 | 61–62 | • Contrast a food chain and a food web• Read food webs to understand how energy moves through an ecosystem• Explain what happens when one part of a food web changes |  |
| 29 | 82–85 | 74–77 | 63–65 | • Summarize how Adam’s sin at the Fall affected life on the earth• Name causes of change in an ecosystem• Understand that God created living things with the ability to adapt to their environments• Recognize that in an ecosystem the number and types of living things depend on their needs being met• Write how a living thing can affect its ecosystemGod’s perfect designGod’s provision for His creationGod’s power over His creationPeople’s need for salvationPeople as stewards of God’s creation  |  |
| 30 | 86–87 | 78–79 |  | Activity: Ecosystem Tag• Model predator and prey relationships• Infer changes in population sizes | Inferring Predicting |
| 31 | 88 |  | 67–68 | Chapter Review• Recall concepts and terms from Chapter 4 |  |
| 32 | 89 |  |  | Chapter 4 Test• Demonstrate knowledge of concepts taught in Chapter 4 |  |

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| Chapter 5: Matter |
| 33 | 90–93 | 80–83 | 69–70 | • Recognize that knowledge is needed to use matter• Identify several physical properties of matter• Explain the difference between mass and volumePeople as stewards of God’s creation |  |
| 34 | 94–96 | 84–86 | 71–72 | Measure Up: Mass• Identify units used to meas­ure mass • Demonstrate how to meas­ure mass using a balanceMeasure Up: Volume• Identify units used to meas­ure volume• Demonstrate how to meas­ure volume in graduated containersChristians as honest workers  | Measuring |
| 35 | 97–99 | 87–89 | 73–74 | Activity: Which Kind of Matter?• Observe properties of different kinds of matter• Infer classifications of matter based on properties | ObservingInferring |
| 36 | 100–103 | 90–93 | 73, 75–78 | • Identify the three states of matter• Compare and contrast the properties of solids, liquids, and gases |  |
| 37–38 | 104–9 | 94–99 | 79 | • Recognize that matter changes states• Describe how heating and cooling can cause matter to change states• Describe the three states of water• Contrast water with other forms of matter• Explain what the moisture on a window is called and why it is thereGod never changes |  |
| 39 | 110–13 | 100–103 | 81–84 | • Compare and contrast physical changes and chemical changes• Identify examples of physical and chemical changes• Explain how people can use matter to serve God and other peoplePeople as stewards of God’s creationChristians’ use of science to show God’s love to others |  |
| 40 | 114 |  | 85–86 | Chapter Review• Recall concepts and terms from Chapter 5 |  |
| 41 | 115 |  |  | Chapter 5 Test• Demonstrate knowledge of concepts taught in Chapter 5 |  |

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| Chapter 6: Sound |
| 42 | 116–21 | 104–9 | 87–88 | • Recognize that learning about sound can help us use it to glorify God• Describe causes of sound• Identify causes of sound vibrationsGod’s creation for the use and enjoyment of peopleChristians’ use of science to show God’s love to others |  |
| 43 | 122–25 | 110–13 | 89–90 | • Explain how sound travels in waves• Describe how the state of matter affects the speed of sound waves traveling through it• Describe the types of surfaces that reflect or absorb sound wavesPeople’s listening and being obedient to God’s Word |  |
| 44 | 126–29 | 114–17 | 91, 93–94 | • Describe characteristics of pitch, volume, and quality• Write why some bells have higher pitches than othersActivity: Musical Jars• Predict and test how the amount of air in a jar affects its pitch | PredictingMeasuring |
| 45 | 130–32 | 118–20 | 95 | • Identify the three main parts of the ear• Describe the functions of the three main parts of the earGod as CreatorGod’s perfect design  |  |
| 46 | 133 | 121 |  | Exploration: All Ears• Make a model of the ear• Demonstrate knowledge of parts of the ear |  |
| 47 | 134–35 | 122–23 | 97–98 | • Describe how the sounds you make can glorify God• Recognize the need to keep ears safe and healthyPeople’s responsibility to glorify GodPeople as stewards of God’s creationPeople’s use of science to honor God |  |
| 48 | 136 |  | 99–100 | Chapter Review• Recall concepts and terms from Chapter 6 |  |
| 49 | 137 |  |  | Chapter 6 Test• Demonstrate knowledge of concepts taught in Chapter 6 |  |

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| Chapter 7: Energy in Motion |
| 50 | 138–43 | 124–29 | 101–2 | • Recognize that learning about friction can help us use it in better ways• Describe what causes an object to move• List three kinds of invisible forces• Describe three kinds of invisible forces• Identify weight as the measurement of the force of gravityPeople’s use of science to honor GodPeople as stewards of God’s creation |  |
| 51 | 144–45 | 130–31 | 103–4 | Activity: Friction Fun• Test several surfaces to compare which has the most friction• Observe and measure the distances that a ball rolls on different surfacesPeople’s use of science to honor GodPeople as stewards of God’s creation | ObservingMeasuring |
| 52 | 146–47 | 132–33 | 105–6 | • Demonstrate the motion of an object• List three ways to describe the motion of an object |  |
| 53 | 148–51 | 134–37 | 107–9 | • Identify five things that can do work• List examples of five things that can do work• Write how forces help us work better, using the example of a wheelbarrow |  |
| 54 | 152–55 | 138–41 | 111–12 | • Identify six kinds of energy• List examples for each kind of energy• Recognize that energy can change from one form to anotherPeople’s use of science to honor GodPeople as stewards of God’s creationSin changed God’s worldGod’s provision for redemption |  |
| 55 | 156 |  | 113–14 | Chapter Review• Recall concepts and terms from Chapter 7 |  |
| 56 | 157 |  |  | Chapter 7 Test• Demonstrate knowledge of concepts taught in Chapter 7 |  |

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| Chapter 8: Soil, Rocks, and Minerals |
| 57 | 158–62 | 142–46 | 115–16 | • Recognize that people were made in God’s image• Recognize that God wants you to show His love to other people• Describe the four things that make up the soil• Describe the three main layers of soilPeople are God’s image-bearersChristians’ use of science to show God’s love to othersSin changed God’s world People as stewards of God’s creation |  |
| 58 | 163–64 | 147–48 | 117–18 | • Recognize that the surface of the earth is always changing• Identify four causes of weathering• Explain how water and wind weather rocks• Explain how ice and plants weather rocks• Write about why soil that was once covered with trees will be good for growing crops |  |
| 59–60 | 165–69 | 149–53 | 119–21 | • Identify how rocks are classified• Describe the three groups of rocks• Describe some of the results of the Flood that we can see• Identify the evidence that supports the worldwide Flood |  |
| 61 | 170–73 | 154–57 | 123–24 | • Recognize that rocks are made of minerals• Describe how the knowledge of minerals can be useful• List four characteristics that can be used to identify a mineralChristians show God’s love to othersPeople as stewards of God’s creation |  |
| 62 | 174–75 | 158–59 | 125–28 | Activity: Hard or Soft• Predict the hardness of several minerals• Test the hardness of several minerals | PredictingInferring |
| 63 | 176 |  | 129–30 | Chapter Review• Recall concepts and terms from Chapter 8 |  |
| 64 | 177 |  |  | Chapter 8 Test• Demonstrate knowledge of concepts taught in Chapter 8 |  |

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| Chapter 9: Weather |
| 65 | 178–82 | 160–64 | 131, 133–34 | • Recognize that God is in control of weather• Identify the reason why weather should be studied• Recall that all weather takes place in the atmosphere• Explain what a meteorologist does• Recognize that a weather map provides data for making weather forecastsPeople as stewards of God’s creation Christians’ use of science to show God’s love to othersGod’s control of His creationGod’s perfect design |  |
| 66 | 183–88 | 165–70 | 135–38 | • Explain how measuring weather can help you• Identify four forms of precipitation• Describe and label parts of the water cycle• Name a tool used to measure precipitation• Describe clues about weather that clouds give usGod’s perfect design God’s control of His creation |  |
| 67 | 189–91 | 171–73 | 139–40 | • Name a tool used to measure temperature• Explain what causes wind• Identify tools used for measuring windGod’s control of His creation |  |
| 68 | 192–93 | 174–75 | 141, 143–44 | Activity: Weather Watcher • Observe local weather and record weather data• Notice patterns in recorded weather data | InferringObserving |
| 69 | 194–95 | 176–77 | 145, 147–48 | • Differentiate between types of severe weather• Determine how to be safe during severe weather• List two things that should be part of a family severe weather plan• Write about the clues weather observations can give and some related weather tools used by meteorologistsGod’s Word provides comfortChristians’ use of science to show God’s love to others |  |
| 70 | 196 |  | 149–50 | Chapter Review• Recall concepts and terms from Chapter 9 |  |
| 71 | 197 |  |  | Chapter 9 Test• Demonstrate knowledge of concepts taught in Chapter 9 |  |

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| Chapter 10: The Solar System |
| 72 | 198–203 | 178–83 | 151–53, 155 | • Recognize that God uniquely designed Earth for life• Recognize that objects in the sky have patterns of motion• Describe and differentiate between revolution and rotation• Identify what causes years and daysActivity: Solar Mobile• Prepare a solar system mobileGod as CreatorGod’s perfect design | Classifying Communicating |
| 73 | 204–7 | 184–87 | 157 | • Describe characteristics of the sun• Describe how the sun is important for Earth• Recognize that a constellation is a pattern of stars• Describe what an astronomer doesPeople’s use of science to help others |  |
| 74 | 208–11 | 188–91 | 159,161–62 | • Identify Mercury as the smallest planet and the one closest to the sun• Identify Venus as the hottest planet and the one covered with clouds• Identify Earth as the only planet with liquid water and an atmosphere that allows life• Identify Mars as the red planet• Write an explanation of ways that God perfectly designed Earth for living thingsGod as CreatorGod’s perfect design |  |
| 75 | 212–17 | 192–97 | 163,165–66 | • Identify characteristics of Jupiter, Saturn, Uranus, and Neptune• List the planets in order from the sun outward• Describe what asteroids are and where they can be found• Name three dwarf planetsGod’s use of creation for His glory |  |
| 76 | 218 |  | 167–68 | Chapter Review• Recall concepts and terms from Chapter 10 |  |
| 77 | 219 |  |  | Chapter 10 Test• Demonstrate knowledge of concepts taught in Chapter 10 |  |

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| Chapter 11: Cells, Tissues, and Organs |
| 78 | 220–23 | 198–201 | 169 | • Recognize the interrelationship of science concepts• Recognize that God knows all about us even before we are born• Recognize that a microscope is a tool that magnifies tiny things• Understand that all living things are made of cells• Describe how cells got their nameGod as CreatorPeople’s use of science to help others |  |
| 79 | 224–27 | 202–5 | 171, 173–74 | • Recognize a cell as the smallest living part of a living thing• Describe characteristics of cells• Identify an amoeba as a single-celled creature• Label the main parts of a plant cell• Identify the main difference between an animal cell and a plant cell |  |
| 80 | 228–29 | 206–7 | 175–76 | Activity: Edible Cell• Make a model of an animal cell• Identify the parts of a cell• Communicate information about the model | CommunicatingInferring |
| 81 | 230–33 | 208–11 | 177–79, 181–82 | • Identify and describe the four main kinds of tissues• Recognize that the lungs, heart, stomach, and brain are organs• Explain why it is important to know how the parts of the body work• Write how cells, tissues, and systems are related to each otherGod’s design of our bodiesChristians working together  |  |
| 82 | 234 |  | 183–84 | Chapter Review• Recall concepts and terms from Chapter 11 |  |
| 83 | 235 |  |  | Chapter 11 Test• Demonstrate knowledge of concepts taught in Chapter 11 |  |

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| Chapter 12: Skin |
| 84 | 236–41 | 212–17 | 185–87 | • Recognize that the skin is the largest organ in the body• Identify the two layers of skin• Recognize that new skin cells are made in the epidermis• Explain why the epidermis is important to the bodyPeople as God’s image-bearersPeople as stewards of God’s creationSin caused God’s world to change |  |
| 85 | 242–45 | 218–21 | 189–91, 193–95 | • Recognize that the ridges on fingertips provide friction to grip things• Explain ways that fingerprints are usefulActivity: Patterns on My Skin• Make and classify fingerprint patterns | Classifying Observing |
| 86 | 246–50 | 222–26 | 197 | • Describe the parts of the dermis• Explain the functions of nerves, blood vessels, sweat glands, and oil glands in the dermis• Describe two ways the body is cooled• Write about why skin may or may not bleed when scrapedGod’s perfect design |  |
| 87 | 251 | 227 |  | Exploration: Under My Skin• Make a model of the parts of the skin |  |
| 88 | 252–53 | 228–29 | 199–200 | • Explain why caring for our bodies is important• Explain two ways that keeping clean is importantGod’s perfect design |  |
| 89 | 254 |  | 201–2 | Chapter Review• Recall concepts and terms from Chapter 12 |  |
| 90 | 255 |  |  | Chapter 12 Test• Demonstrate knowledge of concepts taught in Chapter 12 |  |