

Science 3 • 5th Edition

Lesson Plan Overview

Unit 1: Let's Connect with Earth and Space Science

Chapter 1: The Solar System

Lesson	Teacher Edition	Student Edition	Activities	Objectives
1	1–6	1–6	1–2	- Compare and contrast different worldviews on the origins of the solar system. BWS - Identify the force that keeps the planets in their revolutions around the sun. - Explain that God designed patterns of movement in the solar system. BWS
2	7–10	7–10	3–4	- Recall that the sun is a star. - Describe the physical characteristics of the sun. - Identify the earth's main source of energy. - Explain how constellations are seasonal patterns. - Recall that a telescope is a magnifying tool used to observe stars other than the sun.
3	11–13	11	5–10	Exploration: Solar Mobile - Conduct an internet keyword search to identify an interesting fact about each planet. - Classify the planets by physical characteristics. - Sequence the order of the planets in the solar system from the sun outward. - Build a model of the solar system. - Apply the inquiry skills of classify and communicate.
4	14–21	12–17	11–16	- Identify characteristics of the inner planets. - Explain why the earth's design is unique, using Isaiah 45:18. BWS - Sequence and describe the phases of the moon. - Differentiate between the waxing and waning of the moon's phases. Exploration: Moon Mystery - Apply the inquiry skills of observe and communicate to the moon's phases.
5	22–25	18–21	17–20	- Identify characteristics of outer planets. - Sequence planets in order from the sun outward. - Describe what asteroids are and where they can be found. - Compare and contrast planets and dwarf planets.
6	26	1–21	1–20	Review Recall terms and concepts from Chapter 1.
7	27			Assessment Apply terms and concepts from Chapter 1.

Chapter 2: Weather and Climate

Lesson	Teacher Edition	Student Edition	Activities	Objectives
8	28–34	22–28	21–22	- Explain how the atmosphere and sun affect our weather. BWS - Predict what future weather might be, using given weather patterns. - Infer which meteorological tool should be used in various scenarios.
9	35–39	29–33	23–25	- Create models of four types of clouds. - Explain how the water cycle works. - Describe four forms of precipitation.
10	40–44	34	27–32	Exploration: Weather Watcher - Observe and record weather data from two locations. - Create a graph to display weather data.
11	45–49	35–39	33–34	- Identify six types of severe weather. - Explain why weather predictions are important. BWS - Make a severe weather safety plan. - Give examples of how weather predictions can keep us safe.
12	50–52	40	35–38	STEM: Waterproof Roof - Plan and design a roof model that repels water, using the engineering design process. - Construct a roof model that repels water, using the engineering design process. - Evaluate designs to determine which models best repel water. - Redesign the model to make the roof repel more water. - Communicate to others how the design solves the problem.
13	53–57	41–45	39–40	- Identify the three main climate zones. - Identify the characteristics of each climate zone. - List examples of geographic locations in each climate zone.
14	58–63	46–51	41–42	- Identify climate change. - Compare and contrast different views of climate change. BWS - Identify possible causes of climate change. - Defend the claim that climate change has limits, using Genesis 8:22. BWS
15	64	22–51	21–42	Review - Make predictions of future weather based on observed and recorded data. - Recall terms and concepts from Chapter 2.
16	65			Assessment Apply terms and concepts from Chapter 2.

Chapter 3: Soil, Rocks, Minerals, and Fossils

Lesson	Teacher Edition	Student Edition	Activities	Objectives
17	66–70	52–56	43–44	- Explain from Scripture the origin of the earth, including water and dry land. BWS - Identify four components of soil. - Identify the three main layers of soil. - Examine topsoil to identify its various components.
18	71–74	57–60	45–46	- Recall the causes of weathering and erosion. - Describe how landslides are an example of erosion. - Recall that soil is a natural resource. BWS - Explain why it is important to conserve soil. BWS
19	75–78	61–64	47	- Identify the three main types of rocks. - Explain how rocks form and are classified. BWS - Create a way to classify rocks.
20	79–84	65–70	49–50	- Explain how rocks and minerals are related. BWS - Identify some properties of minerals. - Explain how understanding the properties of minerals can be beneficial. BWS - Differentiate between common and precious minerals.
21	85–87	71	51–57	Investigation: Hard or Soft? - Formulate a hypothesis to predict the hardness of various minerals. - Record observations. - Draw conclusions from data collected. - Explain why knowing about the hardness of minerals is beneficial. BWS - Rank minerals from softest to hardest, based on the scratch test conducted.
22–23	88–97	72–81	59–60	- Recall what a fossil is. - Compare and contrast different views of how and when most fossils formed. BWS - Explain why there are marine fossils on mountains. BWS - Compare and contrast views of adaptation. BWS - Create a model bone fossil to observe the “fossilization” by the process of mineral replacement. - Formulate a statement explaining how the model bone fossil supports a biblical view of fossil formation. BWS
24	98	52–81	43–60	Review Recall terms and concepts from Chapter 3.
25	99			Assessment Apply terms and concepts from Chapter 3.

Unit 2: Let's Connect with Life Science

Chapter 4: Cells, Tissues, Organs, and Systems

Lesson	Teacher Edition	Student Edition	Activities	Objectives
26	100–106	82–88	61–62	- Explain, using the Bible's teaching, that God knows all about the people He created. BWS - Identify the smallest living part of an organism. BWS - Identify a tool used to see tiny things. - Label the five main components of a microscope. - Conclude which science tool shows greater detail.
27	107–11	89–93	63–64	- Identify the amoeba as a single-celled organism. - Identify the main parts of an animal cell and a plant cell. - Differentiate between a plant cell and an animal cell.
28	112–14	94	65–66	Exploration: Edible Cell - Make a model of an animal cell. - Label the parts of an animal cell. - Communicate information about the animal cell model.
29	115–20	95–100	67–68	- Explain how cells, tissues, organs, and systems are related to each other. BWS - Identify four organs of the human body. - Explain why it is important to know how the body works. BWS - Identify the largest organ of the body. - Explain why the epidermis is important to the body. BWS
30	121–23	101	69–73	Exploration: Patterns on My Skin - Classify fingerprint patterns. - Record and graph types of fingerprint patterns.
31	124–27	102–5	75–76	- Identify the parts of the dermis. - Explain two ways that the body is cooled. - Explain why caring for our skin is important. BWS
32	128	82–105	61–76	Review Recall terms and concepts from Chapter 4.
33	129			Assessment Apply terms and concepts from Chapter 4.

Chapter 5: Plants

Lesson	Teacher Edition	Student Edition	Activities	Objectives
34	130–34	106–10	77	- Identify three conditions a seed needs to germinate. - Recall the function of each plant part. - Sequence the life cycle of a flowering plant.
35	135–40	111–16	79–81	- Name three things plants need for photosynthesis. - Name two products plants produce during photosynthesis. - Identify where photosynthesis takes place in the plant. - Sequence the steps of photosynthesis. - Explain, using biblical teaching, why photosynthesis occurs. BWS - Explain why God gave people plants. BWS
36	141–43	117	83–87	Investigation: A Place to Grow - Predict the effect of sunlight on plant growth. - Observe and measure the height of plants. - Record and graph data on a bar graph. - Draw a conclusion about the effects of sunlight on plant growth.
37	144–46	118–20	89–90	- Explain why plants have different traits. - Compare and contrast different views about plant adaptation. BWS
38	147–49	121	91–92	STEM: Vacation Water Challenge - Plan and design a way to water a plant, using the engineering design process. - Create a model to water a plant. - Test and compare models to improve the original design. - Communicate to others how the design solves the problem.
39	150	106–21	77–92	Review Recall terms and concepts from Chapter 5.
40	151			Assessment Apply terms and concepts from Chapter 5.

Chapter 6: Cold-Blooded Animals

Lesson	Teacher Edition	Student Edition	Activities	Objectives
41	152–56	122–26	93–95* (page 95 is used in Lessons 41–42)	- Identify how scientists classify animals. - Differentiate between invertebrates and vertebrates. - Identify the characteristics of warm-blooded and cold-blooded animals. - Differentiate between warm-blooded and cold-blooded animals. - Identify what an animal behavior scientist does.
42	157–62	127–32	95–99	- Identify the characteristics of fish and amphibians. - Identify and describe the structures and features that benefit fish and amphibians in survival and growth. BWS - Construct an explanation, using Scripture, stating why animals reproduce after their own kind. BWS - Identify the ways fish and amphibians reproduce. - Sequence the stages of frog metamorphosis.
43	163–69	133–37	101–6	- Identify the characteristics, structures, and features of reptiles. - Describe how God has provided the structures and features that benefit reptiles for survival and growth. BWS - Sequence the pattern of the reptile life cycle. - Explain, using Scripture, why there will one day be no predators and no prey. BWS Investigation: Leaping Lizards - Infer in an Investigation how a cold-blooded animal depends on the temperature of its habitat for survival and growth. - Explain why people should care for reptiles. BWS
44	170–76	138–44	107–10	- Identify the characteristics of insects and spiders. - Describe the structures and features that benefit insects and spiders in survival and growth. BWS - Identify the ways that insects and spiders reproduce. - Sequence the stages of ladybug metamorphosis.
45	177–81	145	111–14	Investigation: Changes in Dark Places - Create a hypothesis about the stages in the life cycle of a mealworm. - Construct a living space for mealworms. - Observe and record the changes in a mealworm’s life cycle. - Draw conclusions from the data collected.
46	182	122–45	93–114	Review Recall terms and concepts from Chapter 6.
47	183			Assessment Apply terms and concepts from Chapter 6.

Chapter 7: Warm-Blooded Animals

Lesson	Teacher Edition	Student Edition	Activities	Objectives
48	184–92	146–52	115–24	- Recall the differences between invertebrates and vertebrates and between warm-blooded and cold-blooded animals. - Identify the characteristics of birds. - Identify and describe the structures and features that benefit birds in survival and growth. BWS - Formulate a biblical explanation of why birds reproduce after their own kind. BWS - Sequence the stages of a bird's life cycle. BWS Exploration: Feathery Friends - Record observations of birds at a bird feeder.
49	193–97	153–57	125–30	- Identify the characteristics of mammals. - Identify and describe the structures and features that benefit mammals for survival and growth. BWS - Sequence the stages of a mammal's life cycle. BWS - Compare and contrast the views about egg-laying mammals. BWS - Compare humans and mammals. BWS
50	198–201	158–61	131	- Explain why understanding the different kinds of animals is important for caring for them. BWS - Identify the life cycle pattern that all cold-blooded and warm-blooded animals have. - Compare and contrast life cycles of cold-blooded and warm-blooded animals. - Identify similar and different patterns of inherited traits shared between offspring and their parents or among siblings. - Identify a variation of an inherited trait.
51	202–6	162–66	133–37	- Identify animal instincts. - Explain where an animal's instincts come from. BWS - Identify learned behaviors of some animals. - Differentiate between inherited traits, learned behaviors, and instincts.
52	207–9	167	139–40	Exploration: Blubber, Feathers, and Fur - Identify the purpose of blubber, feathers, and fur. - Observe how blubber, feathers, and fur help keep animals warm. - Record observations. - Draw conclusions from data collected.
53	210	146–67	115–40	Review Recall terms and concepts from Chapter 7.
54	211			Assessment Apply terms and concepts from Chapter 7.

Chapter 8: Ecosystems

Lesson	Teacher Edition	Student Edition	Activities	Objectives
55	212–18	168–74	141–44	- Identify four characteristics of organisms. - Identify what makes up an ecosystem. - Explain the relationship between ecosystem, habitat, community, and population. - Explain how resources meet the needs of organisms. - Identify why there is competition between animals.
56	219–21	175	145–46	STEM: Habitat Help! - Plan and design a solution for providing food or water for an animal group during a drought, using the engineering design process. - Create a model of the food system or water system. - Test and compare models to improve the original design. - Communicate to others how the model solves the problem.
57	222–27	176–81	147–48	- Explain how producers get their energy. - Classify organisms as producers, consumers, or decomposers. - Describe the three types of consumers. - Explain, using biblical teaching, why there were no carnivores before the Fall. BWS - Analyze the advantages of animals living together in groups.
58	228–31	182–85	149–50	- Recall what a food chain is. - Sequence on a food chain the transfer of energy from one organism to another. BWS - Identify what a food web is. - Describe the relationship between a food chain and a food web. BWS - Interpret a food web. - Explain what happens when one part of a food web changes.
59	232–36	186–90	151–54	- Name some causes of change in an ecosystem. - Explain a way people should exercise dominion when making changes to ecosystems. BWS - Give examples of characteristics that help organisms survive in a changed ecosystem. - Analyze why some organisms survive well and some do not in a changed ecosystem. - Identify how an ecosystem maintains balance.
60	237–39	191	155–56	Exploration: Ecosystem Tag - Identify the roles of predator and prey in a food web. - Infer changes in an ecosystem. - Draw conclusions from data collected to make inferences about a population after its predator dies off in an ecosystem.
61	240	168–91	141–56	Review Recall terms and concepts from Chapter 8.
62	241			Assessment Apply terms and concepts from Chapter 8.

Unit 3: Let's Connect with Physical Science

Chapter 9: Matter and Sound

Lesson	Teacher Edition	Student Edition	Activities	Objectives
63	242–50	192–200	157–60	- Identify physical properties of matter. - Explain the difference between mass and volume. - Identify what an atom is. - Compare and contrast the properties of solids, liquids, and gasses.
64	251–55	201	161–66	Exploration: Which Kind of Matter? - Compare properties of different kinds of matter. - Measure mass and volume of different kinds of matter. - Classify matter based on properties.
65	256–59	202–5	167	- Describe how heating and cooling can cause matter to change states. - Infer why there is moisture inside a window on a cold day. - Describe the three states of water.
66	260–63	206–9	169–70	- Identify what physical and chemical changes are. - Compare and contrast physical and chemical changes. - Give one example of a physical change and one example of a chemical change. - Explain how people can use changes in matter to serve God and other people. BWS
67	264–68	210–14	171–72	- Recall what sound is. - Identify causes of sound vibrations. - Explain how sound travels. - Describe three ways sound waves interact with matter.
68	269–74	215–20	173	- Describe the characteristics of pitch and volume. - Explain how the physical properties of a musical instrument affect pitch and volume. - Create musical instruments to demonstrate pitch and volume. - Identify ways that sound is used to communicate. BWS
69	275–78	221	175–77	Investigation: Musical Bottles - Create a hypothesis to predict how air affects pitch. - Observe and record data. - Draw conclusions about how the amount of air in a bottle affects the pitch.
70	279–81	221	179–81	Inquiry: Musical Bottles - Create a hypothesis to predict how the size of a bottle will affect the pitch. - Develop the steps of the procedure in the Inquiry. - Observe and record data. - Draw conclusions about how the size of a bottle will affect the pitch.
71	282	192–221	157–81	Review Recall terms and concepts from Chapter 9.
72	283			Assessment Apply terms and concepts from Chapter 9.

Chapter 10: Forces and Motion

Lesson	Teacher Edition	Student Edition	Activities	Objectives
73	284–89	222–27	183–86	- Recall what force, friction, gravity, weight, and magnetism are. - Formulate a biblical explanation for how we know that God created force. BWS - Identify contact and noncontact forces. - Compare and contrast contact and noncontact forces.
74	290–93	228–31	187–90	- Describe direction, speed, distance, and position as they relate to motion. BWS - Identify balanced and unbalanced forces. - Analyze whether the forces acting on an object are balanced or unbalanced. - Explain why it is important to know about balanced and unbalanced forces. BWS
75	294–96	232	191–92	Investigation: Balanced and Unbalanced Forces - Predict how balanced and unbalanced forces will affect the motion of a ball. - Observe and record data in a chart. - Infer how balanced and unbalanced forces affect the motion of a ball. - Apply to the game of bowling the concepts learned about balanced or unbalanced forces.
76	297–300	233–36	193–94	- Write equations for balanced or unbalanced forces on an object. - Identify observed patterns of motion and unseen patterns of motion. - Predict how an object will move next, based on observed patterns of motion. - Identify patterns of motion that God made at Creation. BWS - Explain why some motion cannot be predicted.
77	301–4	237–40	195–98	- Identify what work is. - Identify the living things or nonliving things that can do work. - Determine what is doing the work in a scenario. - Explain, using examples, how forces help in doing work better.
78	305–7	241	199–200	STEM: A-Maze-ing Marble Game - Design a game path, using the engineering design process, that gives a marble two different patterns of motion. - Create a path with two patterns of motion for a marble. - Test and compare models to improve the original design. - Communicate how the redesign solves the problem.
79	308	222–41	183–200	Review Recall terms and concepts from Chapter 10.
80	309			Assessment Apply terms and concepts from Chapter 10.

Chapter 11: Electricity and Magnetism

Lesson	Teacher Edition	Student Edition	Activities	Objectives
81	310–15	242–47	201–2	- Identify what electricity is. - Relate atoms to electricity. - Identify when an object is positively or negatively charged or when the object is neutral. - Explain what static electricity is. - Describe what happens when like charges and opposite charges are brought near each other. - Analyze the effects that a charged object has on other objects.
82	316–19	248–51	203–4	- Identify what current electricity is. - Differentiate between static electricity and current electricity. - Compare and contrast conductors and insulators. - Differentiate between a closed simple electric circuit and an open simple electric circuit. - Explain, using biblical teaching, why it is beneficial to understand conductors and current electricity. BWS
83	320–22	252	205–6	Exploration: Conductors Needed - Predict whether objects are conductors or insulators. - Build a circuit tester. - Identify which objects complete the circuit and which do not. - Infer which materials are conductors and which are insulators.
84	323–26	253–56	207–8	- Recall what a magnet is. - Explain why magnets can act at a distance. - Explain how the invisible magnetic field can be “visible.” - Identify the areas of a magnet with the strongest magnetic force. - Analyze the magnetic forces of attract and repel. - Explain how magnets are beneficial. BWS
85	327–28	257	209–10	Investigation: Magnetism and Matter - Predict the strength of magnetic force. - Observe and record data. - Draw conclusions about the strength of magnetic force and the amount of matter that the magnetic force passes through.
86	329–31	257	211–13	Inquiry: Magnetism and Matter - Formulate a hypothesis to predict the magnetic force of several different magnets. - Develop the steps of the procedure in the Inquiry. - Observe and record data. - Organize the data collected onto a graph. - Draw conclusions about the strength of each magnet’s magnetic force using the data collected.
87	332–34	258–60	215	- Identify what an electromagnet is. - Explain how the magnetic force of an electromagnet can be made stronger or weaker. - Differentiate between a bar magnet and an electromagnet. - Support the statement that understanding electromagnets has helped people solve real-life problems. BWS

Lesson	Teacher Edition	Student Edition	Activities	Objectives
88	335–37	261	217–18	STEM: Lost and Found • Design a magnetic or electromagnetic tool, using the engineering design process, that will pick up metal objects from a tight space. • Create a magnetic or an electromagnetic tool. • Test and compare models to improve the original design. • Communicate how the redesign solves the problem.
89	338	242–61	201–18	Review • Recall terms and concepts from Chapter 11.
90	339			Assessment • Apply terms and concepts from Chapter 11.