

Science, Grade 1

Time on Task: 2 hours per week

Course Philosophy

Science reflects the magnificent order and complexity of God’s creation. It presents God as the great Designer, Sustainer, and Lawgiver. Students will continually be called on to see the divine wisdom of creation and its implications for other subjects. The student’s mind will be challenged to understand the universe and refute the man-made idea of evolution. Science is presented to show how man is created in God’s image in order to fulfill the Genesis command to subdue the earth and exercise the privilege to rule over it (Genesis 1:28a)

Course Description

In Grade 1, the study of science includes simple classroom and field investigations to help students develop the skills of asking questions, gathering information, making measurements using non-standard units, with tools such as a thermometer to extend their senses, constructing explanations, and drawing conclusions. Students also use computers and information technology tools to support their investigations.

Goals and Objectives	Scope and Sequence	Spiritual Goals
<p>Texas Essential Knowledge and Skills (TEKS)</p> <p>§112.3. Science, Grade 1.</p> <p>(a) Introduction.</p> <p>(1) In Grade 1, the study of science includes simple classroom and field investigations to help students develop the skills of asking questions, gathering information, making measurements using non-standard units, with tools such as a thermometer to extend their senses, constructing explanations, and drawing conclusions. Students also use computers and information technology tools to support their investigations.</p> <p>(2) As students learn science skills, they identify components of the natural world including rocks, soil, and natural resources. Students observe that heat from the Sun or friction, is an example of something that causes change. In addition, students identify basic needs of living things, explore ways that living things depend on each other, and separate living organisms and nonliving things into groups. Students identify parts that can be put together with other parts to do new things.</p> <p>(3) Science is a way of learning about the natural world. Students should know how science has built a vast body of changing and</p>	<p><u>Level One Science</u></p> <p><i>Life Science - Animals</i></p> <p>Mammals Fish Birds Insects</p> <p><i>Physical Science</i></p> <p>Movement Machines</p> <p><i>Life Science – Human Body</i></p> <p>Teeth Bones and Muscles Heart and Blood Lungs and Air Stomach and Food</p> <p><i>Earth and Space Science</i></p> <p>Seasons Space</p>	<p>God’s intended purpose for science:</p> <ol style="list-style-type: none">1. To learn that God looks at the intent of the heart rather than outward beauty. (I Samuel 16:7)2. To learn that God’s glory is evident in all of nature. (Psalm 19:1)3. To learn that God created the world. (Genesis 1:16)4. To learn that all wisdom is found in God. (Proverbs 3:19)5. To understand that our knowledge of the origin of life comes from God alone. God tells us that we can know of origins only by believing what He says. (Hebrews 11:3)6. To know that no person was present or had any knowledge of His work at the beginning. (Job 38:4, 21)7. To understand that all living things have their origin in God. (Genesis 1:11-13, 20-27, 31)

<p>increasing knowledge described by physical, mathematical, and conceptual models, and also should know that science may not answer all questions.</p> <p>(4) A system is a collection of cycles, structures, and processes that interact. Students should understand a whole in terms of its components and how these components relate to each other and to the whole. All systems have basic properties that can be described in terms of space, time, energy, and matter. Change and constancy occur in systems and can be observed and measured as patterns. These patterns help to predict what will happen next and can change over time.</p> <p>(5) Investigations are used to learn about the natural world. Students should understand that certain types of questions can be answered by investigations, and that methods, models, and conclusions built from these investigations change as new observations are made. Models of objects and events are tools for understanding the natural world and can show how systems work. They have limitations and based on new discoveries are constantly being modified to more closely reflect the natural world.</p> <p>(b) Knowledge and skills.</p> <p>(1) Scientific processes. The student conducts classroom and field investigations following home and school safety procedures. <i>The student is expected to:</i></p> <p>(A) demonstrate safe practices during classroom and field investigations; and</p> <p>(B) learn how to use and conserve resources and materials.</p> <p>(2) Scientific processes. The student develops abilities necessary to do scientific inquiry in the field and the classroom. <i>The student is expected to:</i></p> <p>(A) ask questions about organisms, objects, and events;</p> <p>(B) plan and conduct simple descriptive investigations;</p> <p>(C) gather information using simple equipment and tools to extend the senses;</p> <p>(D) construct reasonable explanations and draw conclusions; and</p>	<p>Correlation with TEKS <u>Level One Science</u> Purposeful Design/ACSI Student Item Code 7503 Teacher Item Code 7504S</p> <p>Lessons 12, 34</p> <p>Lesson 73</p> <p>Lesson 46, 61, 63 Lessons 6, 21, 50, 51, 55</p> <p>5 Senses – Teacher Generated Lessons 5, 38, 39, 74 Lessons 17, 29, 30, 41, 45, 57, 59, 81, 82</p>	<p>8. To understand that God cares about all living things. (Matthew 6:26, 28-30)</p> <p>9. To understand that God controls the ecological system. He can make things grow or not grow, be sturdy or diseased. (Psalm 65:9-13)</p> <p>10. To understand that God is the beginning of life on earth. Organisms were first created as mature, complete, and perfect. (Genesis 1:27, 28; 2:19, 20, 23, 24)</p> <p>11. To know that plants, animals, and man were each created with specific purposes. (Psalm 104:14, 15)</p> <p>Biblical Integration Truth Statements</p> <p>1. <i>What is prime reality, the really real?</i></p> <p>God exists and is the ultimate reality. (Psalm 90:2, Revelation 22:13)</p> <p>a. God designed, created, and sustains His creation. (Genesis 1:1-31)</p> <p>b. God is good, holy, and loving. (Luke 18:19, 1 John 4:16, 1 Peter 1:16, Psalm 145:12)</p> <p>c. God is omniscient – all knowing. (Romans 11:33-36, Psalm 147:5)</p> <p>d. God is sovereign – nothing is beyond His ultimate interest, control, and authority. (Daniel 4:25)</p> <p>e. God is personal and also triune- He is coequally and coeternally God the Father, God the Son,</p>
---	--	---

<p>(E) communicate explanations about investigations.</p> <p>(3) Scientific processes. The student knows that information and critical thinking are used in making decisions. <i>The student is expected to:</i></p> <p>(A) make decisions using information;</p> <p>(B) discuss and justify the merits of decisions; and</p> <p>(C) explain a problem in his/her own words and identify a task and solution related to the problem.</p> <p>(4) Scientific processes. The student uses age-appropriate tools and models to verify that organisms and objects and parts of organisms and objects can be observed, described, and measured. <i>The student is expected to:</i></p> <p>(A) collect information using tools including hand lenses, clocks, computers, thermometers, and balances;</p> <p>(B) record and compare collected information; and</p> <p>(C) measure organisms and objects and parts of organisms and objects, using non-standard units such as paper clips, hands, and pencils.</p> <p>(5) Science concepts. The student knows that organisms, objects, and events have properties and patterns. <i>The student is expected to:</i></p> <p>(A) sort objects and events based on properties and patterns; and</p> <p>(B) identify, predict, and create patterns including those seen in charts, graphs, and numbers.</p> <p>(6) Science concepts. The student knows that systems have parts and are composed of organisms and objects. <i>The student is expected to:</i></p> <p>(A) sort organisms and objects according to their parts and characteristics;</p> <p>(B) observe and describe the parts of plants and animals;</p> <p>(C) manipulate objects such as toys, vehicles, or construction sets so that the parts are separated from the whole which</p>	<p>Solids/Liquids – Teacher Generated Lessons 33, 42, 49, 56, 67, 78, 83</p> <p>Lessons 19, 47, 54, 60, 77 Lessons 27, 60 Lessons 32, 36 Math Lesson 103</p> <p>Lessons 9, 69, 72, 75 Math Lessons 50, 64 Lessons 10, 69, 75 Math Lesson 123 Teacher Generated</p> <p>Teacher Generated Concept Development Lessons 14, 18, 53, 68, 70, 71, 80 Math Lesson 8</p> <p>Lessons 3, 40, 44</p> <p>Lessons 8, 9, 14, 15, 23, 24 Lesson 37</p>	<p>Jesus, and God the Holy Spirit. (Hebrews 1:3)</p> <p>2. <i>What is the nature of external reality, that is, the world around us?</i></p> <p>a. God is the source of everything and created the universe out of nothing. (Genesis 1:1)</p> <p>b. The universe was created by God to be orderly. (Isaiah 45:18, Psalm 147:4)</p> <p>c. God is constantly involved in the unfolding pattern of the ongoing operation of the universe. (Psalm 24:1-2, Psalm 32:13-15)</p> <p>d. The universe reflects His glory. (Psalm 8:1, Psalm 19:1)</p> <p>3. <i>What is a human being?</i></p> <p>a. God created humans to know Him intimately and to have a loving relationship with Him. (Psalm 100:3)</p> <p>b. Human beings are created in the image of God with the capacity to choose. (Genesis 1:27, Proverbs 8:10)</p> <p>c. Adam and Eve chose disobedience and brought death to themselves and sin entered the world. (Romans 5:12)</p> <p>d. All human beings have a choice and all have chosen sin that brings separation from God. (Romans 3:23)</p> <p>e. Sin is rebellion against God’s wishes and ways and this destroys our relationship with God. (Romans 8:7-8)</p>
---	---	---

<p>may result in the part or the whole not working; and</p> <p>(D) identify parts that, when put together, can do things they cannot do by themselves, such as a working camera with film, a car moving with a motor, and an airplane flying with fuel.</p> <p>(7) Science concepts. The student knows that many types of change occur. <i>The student is expected to:</i></p> <p>(A) observe, measure, and record changes in size, mass, color, position, quantity, sound, and movement;</p> <p>(B) identify and test ways that heat may cause change such as when ice melts;</p> <p>(C) observe and record changes in weather from day to day and over seasons; and</p> <p>(D) observe and record changes in the life cycle of organisms.</p> <p>(8) Science concepts. The student distinguishes between living organisms and nonliving objects. <i>The student is expected to:</i></p> <p>(A) group living organisms and nonliving objects; and</p> <p>(B) compare living organisms and nonliving objects.</p> <p>(9) Science concepts. The student knows that living organisms have basic needs. <i>The student is expected to:</i></p> <p>(A) identify characteristics of living organisms that allow their basic needs to be met; and</p> <p>(B) compare and give examples of the ways living organisms depend on each other for their basic needs.</p> <p>(10) Science concepts. The student knows that the natural world includes rocks, soil, and water. <i>The student is expected to:</i></p> <p>(A) identify and describe a variety of natural sources of water including streams, lakes, and oceans;</p> <p>(B) observe and describe differences in rocks and soil samples; and</p> <p>(C) identify how rocks, soil, and water are used and how they can be recycled.</p>	<p>Lessons 35, 46, 64</p> <p>Lessons 31, 52</p> <p>Lesson 72</p> <p>Lesson 72 Teacher-generated activity Lessons 11, 20, 26</p> <p>Lesson 1 Lesson 1</p> <p>Lessons 4, 7, 13, 15, 16, 17, 18, 25 Lessons 2, 7, 65</p> <p>Lessons 12, 73, Social Studies Lesson 1 Rocks/Minerals – Teacher Generated Rocks/Minerals – Teacher Generated</p>	<p>f. God provides a way back to Himself through the death of His son Jesus (the second person of the Trinity), on the cross. (John 3:16, Romans 6:23)</p> <p>g. Human beings must respond to God with repentance of our sins, receiving forgiveness, and accepting Jesus as our Savior. (Romans 10:9-10)</p> <p>4. What happens to a person at death?</p> <p>a. For each person death is either the gate to life with God and His people or the gate to eternal separation from God. (1 Corinthians 50:52)</p> <p>b. After death, your soul will continue to exist in an eternal way and there is a final judgment by God. (Revelation 20:12)</p> <p>c. Everyone chooses to honor and love Him by accepting Jesus as our Lord and Savior or makes a choice to reject Jesus and grasp for self-fulfillment and personal glory. (Romans 6:23)</p> <p>d. Those who received Jesus as Savior will spend eternity in Heaven with God. (Philippians 4:10-21)</p> <p>e. Those who rejected Jesus as Savior will spend eternity in Hell without God. (Hebrews 10:26-27)</p> <p>5. Why is it possible to know anything at all?</p> <p>a. Human beings can both know the world around them and God</p>
--	--	---

	<p>Student Activities Role Play Games/Puzzles Stories Songs Projects Cooperative Learning Journaling Graphic Organizers Small Groups Drawing Manipulatives Writer’s Workshop Portfolio</p> <p>Teaching Strategies Direct Instruction Open-ended Questions Discussion Demonstration Brainstorming Problem Solving Read Aloud Facilitating Cooperative Learning</p> <p>Evaluation Procedures Observation Class Participation Quizzes/Tests Projects Reports Survey (oral/written) Portfolio</p> <p>Other Resources and Bibliography</p>	<p>Himself because God has built within them the capacity to do so and because He takes an active role in communicating with them. (John 16:13)</p> <p>b. God’s own intelligence is the basis of human intelligence. Knowledge is possible because there is something to be known (God and His creation) and someone to know (God and human beings made in His image). (Genesis 1:27)</p> <p>c. God reveals, Himself to us in two basic ways: by general revelation and by special revelation. (Exodus 3:2, Psalm 19:1-4)</p> <p>d. In general revelation, God speaks through the creation of the universe and through His word, the Bible. (2 Samuel 22:31, Psalm 19:1)</p> <ul style="list-style-type: none"> ➤ The Bible is internally consistent and unified in its principles and claims. ➤ There is tremendous coherence across the many authors and centuries during which the various books were written and in which its stories unfold. ➤ It is relevant to all the cultures of the world <p>e. Special revelation is God revealing Himself through supernatural ways. Jesus Christ is the ultimate</p>
--	--	--

	None	<p>special revelation. He showed us what God is like more fully than any other form of revelation can. Because Jesus was also completely human, he spoke more clearly to us than any other form of revelation can. (John 14:7)</p> <p>6. <i>How do we know what is right and wrong?</i></p> <ul style="list-style-type: none">a. Ethics or the knowledge of right and wrong is based on the character of God as good (holy and loving). (Psalm 33:4)b. There is an absolute standard by which all moral judgments are measured and God Himself – His character of goodness (holiness and love) – is the standard. (1 Samuel 2:3)c. As a result of sin, morally, we have become less able to discern good and evil and less able to know God as He truly is. (Proverbs 1:7)d. God has revealed His standard in the various laws and principles expressed in the Bible. (Psalm 111:10)<ul style="list-style-type: none">➤ He has dictated absolute moral truth to us.➤ Every truth must conform to Biblical principles.➤ Every choice must reflect God’s moral truth.➤ We must promote, defend, and teach these truths to others.
--	------	--

		<p>7. <i>What is the meaning of human history?</i></p> <ul style="list-style-type: none">a. History is a meaningful sequence of events leading to the fulfillment of God's purposes for humanity. (Psalm 22:27-28, Psalm 47:3)b. History is going somewhere, directed toward a known end. (Matthew 25:34)c. History is a form of revelation, not only does God reveal Himself in history, but the very sequence of events is revelation. (Psalm 33:13-14, Psalm 47:9)d. History has meaning because God is behind all events, not only sustaining all things by His powerful word but also in all things working for the good of those who love Him. q (Psalm 40:5, Romans 8:28) <p><i>What should our response be to God?</i> <i>What were we made for?</i></p> <p>We were made to Love – Matthew 22:37, Worship – Romans 12:1, Obey – 2 John 6, and Give Glory – Psalm 96:3.</p>
--	--	---