

Science, Prekindergarten

Time on Task: 2 hour 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

Young children are natural scientists. They are eager to discover all they can about the world in which they live. In prekindergarten, children participate in simple investigations that help them begin to develop the skills of asking questions, gathering information, communicating findings, and making informed decisions. Using their own senses and common tools, such as a hand lens, students make observations and collect information. Through these processes, prekindergarten children learn about their world.

Children enter the prekindergarten classroom with many conceptions about the natural and constructed world-ideas that they have gained from prior experiences. Meaningful science learning experiences help children investigate those pre-existing ideas while building a foundation for additional knowledge. These meaningful experiences increase children's understanding of the natural world, living things, cycles, change, and patterns—concepts that organize the learning of science.

| Prekindergarten Guidelines Goals and Objectives | Scope and Sequence Science | Spiritual Goals God’s intended purpose for science: |
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| <p>Young children are natural scientists. They are eager to discover all they can about the world in which they live. In prekindergarten, children participate in simple investigations that help them begin to develop the skills of asking questions, gathering information, communicating findings, and making informed decisions. Using their own senses and common tools, such as a hand lens, students make observations and collect information. Through these processes, prekindergarten children learn about their world.</p> <p>Children enter the prekindergarten classroom with many conceptions about the natural and constructed world-ideas that they have gained from prior experiences. Meaningful science learning experiences help children investigate those pre-existing ideas while building a foundation for</p> | <p>Science Processes The Child:</p> <ol style="list-style-type: none"> 1. Begins to perform simple investigations 2. Asks questions about objects, events, and organisms 3. Uses simple measuring devices to learn about objects and organisms 4. Shows an interest in investigating unfamiliar objects, | <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) |

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| <p>additional knowledge. These meaningful experiences increase children's understanding of the natural world, living things, cycles, change, and patterns—concepts that organize the learning of science.</p> | <p>organisms, and phenomena</p> <ol style="list-style-type: none"> 5. Uses one or more senses to observe and learn about objects, events, and organisms 6. Begins to demonstrate safe practices and appropriate use of materials 7. Compares objects and organisms and identifies similarities and differences 8. Explores by manipulating materials with simple equipment, (e.g., pouring from a cup and using a spoon to pick up sand or water) 9. Gathers information using simple tools such as a magnifying lens and an eyedropper 10. Sorts objects and organisms into groups and begins to describe how groups were organized 11. Identifies similarities and differences among objects and organisms 12. Begins to offer | <ol style="list-style-type: none"> 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) 8. To understand that God cares about all living things. (Matthew 6:26, 28-30) 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) 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) 11. To know that plants, animals, and man were each created with specific purposes. (Psalm 104:14, 15) <p>Biblical Integration Truth Statements</p> <ol style="list-style-type: none"> 1. <i>What is prime reality, the really real?</i> God exists and is the ultimate reality. (Psalm 90:2, Revelation 22:13) <ol style="list-style-type: none"> a. God designed, created, and sustains His creation. (Genesis 1:1-31) b. God is good, holy, and loving. (Luke 18:19, 1 John 4:16, 1 Peter 1:16, Psalm 145:12) c. God is omniscient – all knowing. (Romans 11:33-36, Psalm 147:5) d. God is sovereign – nothing is |
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| | <p>explanations, using his or her own words</p> <ol style="list-style-type: none"> 13. Describes observations 14. Shares observations and findings with other through pictures, discussions, or dramatizations 15. Predicts what will happen next based on previous experience 16. Uses patterns (such as growth and day following night to predict what happens next) 17. Participates in creating and using simple data charts 18. Solves simple design problems (e.g., making a box into a little house for a storybook character, toy, or pet) 19. Begins to observe changes in size, color, position, weather, and sound 20. Begins to use scientific words and phrases to describe objects, events, and living things <p>Life Science The Child:</p> <ol style="list-style-type: none"> 1. Groups organisms | <p>beyond His ultimate interest, control, and authority. (Daniel 4:25)</p> <ol style="list-style-type: none"> e. God is personal and also triune- He is coequally and coeternally God the Father, God the Son, Jesus, and God the Holy Spirit. (Hebrews 1:3) <p>2. <i>What is the nature of external reality, that is, the world around us?</i></p> <ol style="list-style-type: none"> a. God is the source of everything and created the universe out of nothing. (Genesis 1:1) b. The universe was created by God to be orderly. (Isaiah 45:18, Psalm 147:4) c. God is constantly involved in the unfolding pattern of the ongoing operation of the universe. (Psalm 24:1-2, Psalm 32:13-15) d. The universe reflects His glory. (Psalm 8:1, Psalm 19:1) <p>3. <i>What is a human being?</i></p> <ol style="list-style-type: none"> a. God created humans to know Him intimately and to have a loving relationship with Him. (Psalm 100:3) b. Human beings are created in the image of God with the capacity to choose. (Genesis 1:27, Proverbs 8:10) c. Adam and Eve chose disobedience and brought death to themselves and sin entered the world. (Romans 5:12) d. All human beings have a choice and all have chosen sin that |
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| | <p>and objects as living or nonliving and begins to identify things people have build</p> <ol style="list-style-type: none"> 2. Begins to recognize that living things have similar needs for water, food, and air 3. Describes properties of objects and characteristics of living things 4. Participates in activities related to preserving their environment 5. Demonstrates a beginning awareness of life cycles 6. Identifies animals and plants as living things <p>Physical Science The Child:</p> <ol style="list-style-type: none"> 1. Begins to identify what things are made of (e.g., distinguishing a metal spoon from a plastic spoon) 2. Investigates and describes the states of matter (solids and liquids) <p>Earth Science The Child:</p> <ol style="list-style-type: none"> 1. Observes and describes properties | <p>brings separation from God. (Romans 3:23)</p> <ol style="list-style-type: none"> e. Sin is rebellion against God's wishes and ways and this destroys our relationship with God. (Romans 8:7-8) 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) 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>4. <i>What happens to a person at death?</i></p> <ol style="list-style-type: none"> 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) b. After death, your soul will continue to exist in an eternal way and there is a final judgment by God. (Revelation 20:12) 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) d. Those who received Jesus as Savior will spend eternity in Heaven with God. (Philippians 4:10-21) e. Those who rejected Jesus as Savior will spend eternity in Hell |
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| <p>(1) Science Processes Children use the processes of science to develop an understanding about their world. They use their senses to gather information, make tentative statements about events and relationships, and begin to test observations, draw conclusions, and form generalizations. Children learn by participating in a simple investigation (for example, adding water to a dried- up sponge), and then thinking about it, and finally discussing what happened. This inquiry approach enables students to build understanding over time.</p> | <p>of rocks, soil, and water</p> <ol style="list-style-type: none"> 2. Participates in activities to explore the earth (rocks, soil, air) and sky (clouds, sun, moon, stars) 3. Recognizes characteristics of different seasons 4. Begins to notice patterns and the sequence of processes and events (e.g., discuss seasons, stages of change) <p>Correlation with TEKS <u>I Wonder</u> Saxon Publishers ISBN 1-56577-349-7</p> <p><u>I Discover</u> Saxon Publishers ISBN 1-56577-344-6</p> <p><u>I Explore</u> Saxon Publishers ISBN 1-56577-345-4</p> | <p>without God. (Hebrews 10:26-27)</p> <ol style="list-style-type: none"> 5. <i>Why is it possible to know anything at all?</i> <ol style="list-style-type: none"> a. Human beings can both know the world around them and God 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) 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) c. God reveals, Himself to us in two basic ways: by general revelation and by special revelation. (Exodus 3:2, Psalm 19:1-4) 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) <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. |
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| <p>The child:</p> <ul style="list-style-type: none"> • begins to demonstrate safe practices and appropriate use of materials • asks questions about objects, events, and organisms • shows an interest in investigating unfamiliar objects, organisms, and phenomena • uses one or more senses to observe and learn about objects, events, and organisms • describes observations • begins to perform simple investigations • gathers information using simple tools such as a magnifying lens and an eyedropper • explores by manipulating materials with simple equipment, (e.g., pouring from a cup, and using a spoon to pick up sand or water) • uses simple measuring devices to learn about objects and organisms • compares objects and organisms and identifies similarities and differences • sorts objects and organisms into groups and begins to describe how groups were organized • begins to offer explanations, using his or her own words • predicts what will happen next based on previous experience • solves simple design problems (e.g., making a box into a little house for a storybook character, toy, or pet) • participates in creating and using simple data charts • shares observations and findings with others through pictures, discussions, or dramatizations. <p>(2) Science Concepts As prekindergarten children learn science skills, they develop concepts about the natural and constructed environment. They identify components of the natural world including rocks, soil, and water. Children observe and describe changes, and they name organisms and describe basic needs of living things. Prekindergarten children observe cycles (for example, wet and dry) and structures (such as fences or buildings) and describe simple patterns that help predict what will happen next. They compare and sort objects and organisms based on observable differences and similarities. The children begin using what</p> | <p>Theme (T) T 5, 7</p> <p>T 4-5, 7, 9 T 4-8</p> <p>T 1, 3-7</p> <p>T 1-4, 6-8 T 1, 4-8 T 1, 4, 6-7</p> <p>T 2, 4-7</p> <p>T 2, 5, 8</p> <p>T 1, 4-7</p> <p>T 3, 6-8</p> <p>T 4-7 T 4, 6-7 T 6-7</p> <p>T 6-7 T 4, 6-8</p> | <ul style="list-style-type: none"> ➤ 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 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> <ol 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 |
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they know to solve problems, such as where to hang a wet cloth so it will dry quickly. The prekindergarten children can also develop an awareness that investigations help them learn about the natural world, that certain questions can be answered by investigations, and that those answers can change as new observations are made.

The child:

- observes and describes properties of rocks, soil, and water
- describes properties of objects and characteristics of living things
- begins to observe changes in size, color, position, weather, and sound
- identifies animals and plants as living things
- groups organisms and objects as living or nonliving and begins to identify things people have built
- begins to recognize that living things have similar needs for water, food, and air
- begins to identify what things are made of (e.g., distinguishing a metal spoon from a plastic spoon)
- uses patterns (such as growth and day following night to predict what happens next)
- identifies similarities and differences among objects and organisms
- begins to use scientific words and phrases to describe objects, events, and living things.

T 7-8
 T 4--8
 T 4, 7

 T 6
 T 6

 T 4-6, 8

 T 3, 6-7

 T 4, 6

 T 1, 6-8

 T 4, 6-8

Student Activities

- Role Play
- Games/Puzzles
- Stories/Books
- Songs
- Cooperative Learning
- Small Groups
- Drawing
- Manipulatives
- Experiments
- Practice

Biblical principles.

- Every choice must reflect God’s moral truth.
- We must promote, defend, and teach these truths to others.

7. ***What is the meaning of human history?***

- 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. (Psalm 40:5, Romans 8:28)

***What should our response be to God?
 What were we made for?***

**We were made to
 Love** – Matthew 22:37,
Worship – Romans 12:1,
Obey – 2 John 6, and
Give Glory – Psalm 96:3.

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| | <p>Teaching Strategies Direct Instruction Open-ended Questions Guided Inquiry - Prediction Discussion Demonstration Brainstorming Problem Solving Read Aloud Facilitating Cooperative Learning Demonstration Games Interactive Classroom Visual Aids</p> <p>Evaluation Procedures Observation Class Participation Group Projects Survey (oral/written) Experiments Demonstrations</p> <p>Other Resources and Bibliography None</p> | |
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