

Mathematics, Prekindergarten

Time on Task: 8 hours per week

Course Philosophy

Mathematics demonstrates God’s order even in an abstract world, gradually building a base of knowledge and skills beginning with the simplest concepts to the more complex. In mathematics, the student will see the order and truth that God created. Just as the Bible says, “precept upon precept, line upon line....” (Isaiah 23:10) The sequential mastery of mathematical concepts is the primary objective.

Course Description

Mathematics learning builds on children’s curiosity and enthusiasm, and challenges children to explore ideas about patterns and relationships, order and predictability, and logic and meaning. Consequently, quality instruction occurs in environments that are rich in language, encourage children’s thinking, and nurture children’s explorations and ideas. These ideas include the concepts of number pattern, measurement, shape, space, and classification.

Prekindergarten Guidelines Goals and Objectives	Scope and Sequence Mathematics	Spiritual Goals God’s intended purpose for mathematics:
<p>Mathematics learning builds on children’s curiosity and enthusiasm, and challenges children to explore ideas about patterns and relationships, order and predictability, and logic and meaning. Consequently, quality instruction occurs in environments that are rich in language, encourage children’s thinking, and nurture children’s explorations and ideas. These ideas include the concepts of number pattern, measurement, shape, space, and classification.</p>	<p>Numbers and Operations The Child:</p> <ol style="list-style-type: none"> 1. Participates in activities related to number sequencing and counting 2. Counts concrete objects to five or higher 3. Arranges sets of concrete objects in one-to-one correspondence 4. Counts by ones to 10 or higher 5. Recognizes and describes the concept of zero (meaning there are none) 6. Begins to compare 	<ol style="list-style-type: none"> 1. To teach the child that there is logic and order in arithmetic and that there is logic and order in God’s plan. 2. To teach that God cares for numbers and has recorded many for our information. 3. To teach that God commanded men to count, measure, and record information. 4. To teach the child that God is concerned that we be accurate and orderly in our use of weights, measure, and numbers. 5. To teach the child not to place too much confidence in the size. 6. To teach the child the concept of measurement to express men’s failure and His plans for man.

	<p>the numbers of concrete objects using language (e.g., “same” or “equal,” “one more,” “more than,” or “less than”)</p> <ol style="list-style-type: none"> 7. Begins to name “how many” are in a group of up to three (or more) objects without counting (e.g., recognizing two or three crayons in a box) 8. Combines, separates, and names “how many” concrete objects 9. Demonstrates relationships between the number of objects and the numerals 10. Begins to identify first and last in a series 11. Begins to demonstrate part of and whole with real objects (e.g., an orange) 12. Matches identical simple symbols or shapes 13. Recognizes and names some numerals between 1-10 14. Identifies use of numbers in the 	<ol style="list-style-type: none"> 7. To develop skills in reasoning which reveal truth. 8. To understand that God has given man the ability to observe reality. 9. To understand that God has given man the ability to explore and to formulate relationships. 10. To understand that human reasoning is a reflection of the divine. 11. To appreciate the structure, form, and beauty of God’s creation. 12. To appreciate the complexity and precision of God’s creation 13. To improve the student’s reasoning skills to help hi think less like the world and more like God. 14. To cultivate preciseness in Calculations and reasoning powers. 15. To develop an appreciation for correctness of procedure and accuracy in dealing with facts. 16. To make him aware of his own limitations and need to depend upon the Lord for understanding. 17. To develop skills in thrift and good stewardship to prepare him for successful living in the world. <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
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	<p>environment (e.g., house numbers, phone numbers)</p> <p>Patterns The Child:</p> <ol style="list-style-type: none"> 1. Imitates pattern sounds and physical movements (e.g., clap, stomp, clap, stomp,...) 2. Begins to predict what comes next when patterns are extended 3. Recognizes and reproduces simple patterns of concrete objects (e.g., a string of beads that are yellow, blue, blue, yellow, blue, blue) 4. Begins to recognize patterns in their environment (e.g., day follows night, repeated phrases in storybooks, patterns in carpeting or clothing) <p>Geometry and Spatial Sense The Child:</p> <ol style="list-style-type: none"> 1. Begins to recognize, describe, and name shapes (e.g., circles, triangles, rectangles – including squares) 2. Begins to recognize 	<p>sustains His creation. (Genesis 1:1-31)</p> <ol style="list-style-type: none"> 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 beyond His ultimate interest, control, and authority. (Daniel 4:25) 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
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	<p>when a shape's position or orientation has changed</p> <ol style="list-style-type: none"> 3. Begins to investigate and predict the results of putting together two or more shapes 4. Puts together puzzles of increasing complexity 5. Begins to use words that indicate where things are in space (e.g., "beside," "inside," "behind," "above," "below") 6. Recognizes that things in the world have shape <p>Measurement</p> <p>The Child:</p> <ol style="list-style-type: none"> 1. Participates in measuring activities and names units of measure 2. Begins to make size comparisons between objects (e.g., taller than, smaller than) 3. Begins to use tools to imitate measuring 4. Covers an area with shapes (e.g., tiles) 5. Fills a shape with solids or liquids (e.g., ice cubes, water) 6. Begins to order two or three objects by 	<p>image of God with the capacity to choose. (Genesis 1:27, Proverbs 8:10)</p> <ol style="list-style-type: none"> 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 brings separation from God. (Romans 3:23) 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)
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	<p>size (seriation) (e.g., largest to smallest) (age)</p> <p>Time Concepts</p> <p>The Child:</p> <ol style="list-style-type: none"> 1. Begins to categorize time intervals and uses language associated with time in everyday situations (e.g., “in the morning,” “after snack”) 2. Uses terms such as before after, yesterday, tomorrow, morning, afternoon, day, and night appropriately 3. Correctly uses the present, past, and future tense of verbs in describing day-to-day occurrences 4. Participates in activities using a variety of time instruments <p>Classification and Data Collection</p> <p>The Child:</p> <ol style="list-style-type: none"> 1. Matches objects that are alike 2. Classifies objects according to one characteristic 3. Describes similarities and differences 	<ol style="list-style-type: none"> 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 without God. (Hebrews 10:26-27) <p>5. <i>Why is it possible to know anything at all?</i></p> <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
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	<p>between objects</p> <ol style="list-style-type: none"> 4. Sorts objects into groups by an attribute and begins to explain how the grouping was done 5. Sorts and classifies materials in more than one way identifies color, size, and/or shape of objects 6. Classifies, sorts, and sequences objects using their own criteria 7. Participates in creating and using real and pictorial graphs <p>Money The Child:</p> <ol style="list-style-type: none"> 1. Recognizes and names one or more coins (penny, nickel, dime, quarter) <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>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 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
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<p>(1) Number and Operations Understanding the concept of number is fundamental to mathematics. Children come to school with rich and varied informal knowledge of number. A major goal is to build on this informal base toward more thorough understanding and skills. Children move from beginning to develop basic counting techniques in prekindergarten to later understanding number size, relationships, and operations.</p> <p>The child:</p> <ul style="list-style-type: none"> • arranges sets of concrete objects in one-to-one correspondence • counts by ones to 10 or higher • counts concrete objects to five or higher • begins to compare the numbers of concrete objects using language (e.g., “same” or “equal,” “one more,” “more than,” or “less than”) • begins to name “how many” are in a group of up to three (or more) objects without counting (e.g., recognizing two or three crayons in a box) • recognizes and describes the concept of zero (meaning there are none) • begins to demonstrate part of and whole with real objects (e.g., an orange) • begins to identify first and last in a series • combines, separates, and names “how many” concrete objects. <p>(2) Patterns Recognizing patterns and relationships among objects is an important component in children’s intellectual development. Children learn to organize their world by recognizing patterns and gradually begin to use patterns as a strategy for problem-solving, forming generalizations, and developing the concepts of number, operation, shape, and space. Pattern recognition is the first step in the development of algebraic thinking.</p> <p>The child:</p> <ul style="list-style-type: none"> • imitates pattern sounds and physical movements (e.g., clap, stomp, clap, stomp,...) • recognizes and reproduces simple patterns of concrete objects 	<p><u>I Explore</u> Saxon Publishers ISBN 1-56577-345-4</p> <p>Theme (T) T 3, 6-8 T 4, 6-8 T 1-6, 8-9 T 6-8</p> <p>T 8</p> <p>T 5, 8</p> <p>T 2, 6</p> <p>T 1, 6-7, 9 T 4, 5</p> <p>T 1-2, 6</p>	<p>standard. (1 Samuel 2:3)</p> <p>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)</p> <p>d. God has revealed His standard in the various laws and principles expressed in the Bible. (Psalm 111:10)</p> <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> <p>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)</p> <p>b. History is going somewhere, directed toward a known end. (Matthew 25:34)</p> <p>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)</p> <p>d. History has meaning because God is behind all events, not</p>
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<p>(e.g., a string of beads that are yellow, blue, blue, yellow, blue, blue)</p> <ul style="list-style-type: none"> • begins to recognize patterns in their environment (e.g., day follows night, repeated phrases in storybooks, patterns in carpeting or clothing) • begins to predict what comes next when patterns are extended. 	<p>T 2-8</p> <p>T 1, 6</p> <p>T 1-9</p>	<p>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)</p> <p><i>What should our response be to God? What were we made for?</i></p>
<p>(3) Geometry and Spatial Sense Geometry helps children systematically represent and describe their world. Children learn to name and recognize the properties of various shapes and figures, to use words that indicate direction, and to use spatial reasoning to analyze and solve problems.</p> <p>The child:</p> <ul style="list-style-type: none"> • begins to recognize, describe, and name shapes (e.g., circles, triangles, rectangles—including squares) • begins to use words that indicate where things are in space (e.g., “beside,” “inside,” “behind,” “above,” “below”) • begins to recognize when a shape’s position or orientation has changed • begins to investigate and predict the results of putting together two or more shapes • puts together puzzles of increasing complexity. 	<p>T 1-9</p> <p>T 1, 4, 6-9</p> <p>T 7, 9</p> <p>T 2, 5-7, 9</p> <p>T 6, 8</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>
<p>(4) Measurement Measurement is one of the most widely used applications of mathematics. Early learning experiences with measurement should focus on direct comparisons of objects. Children make decisions about size by looking, touching, and comparing objects directly while building language to express the size relationships.</p> <p>The child:</p> <ul style="list-style-type: none"> • covers an area with shapes (e.g., tiles) • fills a shape with solids or liquids (e.g., ice cubes, water) • begins to make size comparisons between objects (e.g., taller than smaller than) • begins to use tools to imitate measuring • begins to categorize time intervals and uses language associated with time in everyday situations (e.g., “in the morning,” “after snack”) 	<p>T 2</p> <p>T 2, 7</p> <p>T 1-2, 4, 6-9</p> <p>T 1, 4-9</p> <p>T 4</p>	

	<p>Cooperative Learning</p> <p>Evaluation Procedures</p> <p>Observation Class Participation Survey (oral)</p> <p>Other Resources and Bibliography</p> <p>None</p>	
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