

# Mathematics, Grade 1

**Time on Task:** 6.5 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

Within a well-balanced mathematics curriculum, the primary focal points at Grade 1 are building number sense through number relationships, adding and subtracting whole numbers, organizing and analyzing data, and working with two- and three-dimensional geometric figures.

<b>Goals and Objectives</b> <b>Texas Essential Knowledge and Skills (TEKS)</b>	<b>Scope and Sequence</b> <b><u>Mathematics Grade One</u></b>	<b>Spiritual Goals</b> <b>God’s intended purpose for mathematics:</b>
<p><b>111.13. Mathematics, Grade 1.</b></p> <p><b>(a) Introduction.</b></p> <p>(1) Within a well-balanced mathematics curriculum, the primary focal points at Grade 1 are building number sense through number relationships, adding and subtracting whole numbers, organizing and analyzing data, and working with two- and three-dimensional geometric figures.</p> <p>(2) Throughout mathematics in Kindergarten-Grade 2, students build a foundation of basic understandings in number, operation, and quantitative reasoning; patterns, relationships, and algebraic thinking; geometry and spatial reasoning; measurement; and probability and statistics. Students use numbers in ordering, labeling, and expressing quantities and relationships to solve problems and translate informal language into mathematical language and symbols. Students use objects to create and identify patterns and use those patterns to express relationships, make predictions, and solve problems as they build an understanding of number, operation, shape, and space. Students progress from informal to formal language to describe two- and three-dimensional geometric figures and likenesses in the physical world. Students begin to develop measurement concepts</p>	<ul style="list-style-type: none"><li>• Patterns</li><li>• Number Theory</li><li>• Place Value</li><li>• Statistics</li><li>• Addition</li><li>• Subtraction</li><li>• Multiplication</li><li>• Fractions</li><li>• Algebra</li><li>• Geometry</li><li>• Problem Solving</li><li>• Probability</li><li>• Measurement</li><li>• Time</li><li>• Money</li><li>• Ratio, Proportion, and Percent</li></ul>	<ol style="list-style-type: none"><li>1. To teach the child that there is logic and order in arithmetic and that there is logic and order in God’s plan.</li><li>2. To teach that God cares for numbers and has recorded many for our information.</li><li>3. To teach that God commanded men to count, measure, and record information.</li><li>4. To teach the child that God is concerned that we be accurate and orderly in our use of weights, measure, and numbers.</li><li>5. To teach the child not to place too much confidence in the size.</li><li>6. To teach the child the concept of measurement to express men’s failure and His plans for man.</li><li>7. To develop skills in reasoning which reveal truth.</li><li>8. To understand that God has given</li></ol>

<p>as they identify and compare attributes of objects and situations. Students collect, organize, and display data and use information from graphs to answer questions, make summary statements, and make informal predictions based on their experiences.</p> <p>(3) Throughout mathematics in Kindergarten-Grade 2, students develop numerical fluency with conceptual understanding and computational accuracy. Students in Kindergarten-Grade 2 use basic number sense to compose and decompose numbers in order to solve problems requiring precision, estimation, and reasonableness. By the end of Grade 2, students know basic addition and subtraction facts and are using them to work flexibly, efficiently, and accurately with numbers during addition and subtraction computation.</p> <p>(4) Problem solving, language and communication, connections within and outside mathematics, and formal and informal reasoning underlie all content areas in mathematics. Throughout mathematics in Kindergarten-Grade 2, students use these processes together with technology and other mathematical tools such as manipulative materials to develop conceptual understanding and solve meaningful problems as they do mathematics.</p> <p><b>(b) Knowledge and skills.</b></p> <p><b>(1.1) Number, operation, and quantitative reasoning.</b> The student uses whole numbers to describe and compare quantities.  <i>The student is expected to:</i></p> <p>(A) compare and order whole numbers up to 99 (less than, greater than, or equal to) using sets of concrete objects and pictorial models;</p> <p>(B) create sets of tens and ones using concrete objects to describe, compare, and order whole numbers;</p> <p>(C) identify individual coins by name and value and describe relationships among them; and</p> <p>(D) read and write numbers to 99 to describe sets of concrete objects.</p> <p><b>(1.2) Number, operation, and quantitative reasoning.</b> The student uses pairs of whole numbers to describe fractional parts of whole objects or sets of objects.</p>	<p style="text-align: center;"><b>Correlation with TEKS  <u>Mathematics Grade One</u>  Purposeful Design/ACSI  Student ISBN  1-58331-180-7  Teacher ISBN  1-58331-181-5</b></p> <p>Chapters 1, 3, 6, 8, 12</p> <p>Lessons 41, 71, 97, 100, 101, 102, 104, 106, 107</p> <p>Lessons 66, 67, 68, 69, 70, 107, 138, 139</p> <p>Lessons 42, 105, 156</p> <p>Lessons 10, 11, 12, 13, 96, 159</p> <p>Chapter 9</p>	<p>man the ability to observe reality.</p> <ol style="list-style-type: none"> <li>9. To understand that God has given man the ability to explore and to formulate relationships.</li> <li>10. To understand that human reasoning is a reflection of the divine.</li> <li>11. To appreciate the structure, form, and beauty of God’s creation.</li> <li>12. To appreciate the complexity and precision of God’s creation</li> <li>13. To improve the student’s reasoning skills to help hi think less like the world and more like God.</li> <li>14. To cultivate preciseness in Calculations and reasoning powers.</li> <li>15. To develop an appreciation for correctness of procedure and accuracy in dealing with facts.</li> <li>16. To make him aware of his own limitations and need to depend upon the Lord for understanding.</li> <li>17. To develop skills in thrift and good stewardship to prepare him for successful living in the world.</li> </ol> <p><b>Biblical Integration Truth Statements</b></p> <ol style="list-style-type: none"> <li>1. <b><i>What is prime reality, the really real?</i></b>  God exists and is the ultimate reality. (Psalm 90:2, Revelation 22:13) <ol style="list-style-type: none"> <li>a. God designed, created, and sustains His creation. (Genesis 1:1-31)</li> <li>b. God is good, holy, and loving. (Luke 18:19, 1 John 4:16, 1 Peter 1:16, Psalm 145:12)</li> </ol> </li> </ol>
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<p><i>The student is expected to:</i></p> <p>(A) separate a whole into two, three, or four equal parts and use appropriate language to describe the parts such as three out of four equal parts; and</p> <p>(B) use appropriate language to describe part of a set such as three out of the eight crayons are red.</p> <p><b>(1.3) Number, operation, and quantitative reasoning.</b> The student recognizes and solves problems in addition and subtraction situations.</p> <p><i>The student is expected to:</i></p> <p>(A) model and create addition and subtraction problem situations with concrete objects and write corresponding number sentences; and</p> <p>(B) use concrete and pictorial models to apply basic addition and subtraction facts (up to <math>9 + 9 = 18</math> and <math>18 - 9 = 9</math>).</p> <p><b>(1.4) Patterns, relationships, and algebraic thinking.</b> The student uses repeating patterns and additive patterns to make predictions. <i>The student is expected to</i> identify, describe, and extend concrete and pictorial patterns in order to make predictions and solve problems.</p> <p><b>(1.5) Patterns, relationships, and algebraic thinking.</b> The student recognizes patterns in numbers and operations.</p> <p><i>The student is expected to:</i></p> <p>(A) use patterns to skip count by twos, fives, and tens;</p> <p>(B) find patterns in numbers, including odd and even;</p> <p>(C) compare and order whole numbers using place value;</p> <p>(D) use patterns to develop strategies to solve basic addition and basic subtraction problems; and</p> <p>(E) identify patterns in related addition and subtraction sentences (fact families for sums to 18) such as <math>2 + 3 = 5</math>, <math>3 + 2 = 5</math>, <math>5 - 2 = 3</math>, and <math>5 - 3 = 2</math>.</p> <p><b>(1.6) Geometry and spatial reasoning.</b> The student uses attributes to identify two- and three-dimensional geometric figures. The student compares and contrasts two- and three-dimensional geometric figures or both.</p> <p><i>The student is expected to:</i></p> <p>(A) describe and identify two-dimensional geometric</p>	<p>Lessons 111, 113, 114, 115, 120, 144</p> <p>Lessons 116, 117, 118, 119, 124</p> <p>Chapters 2, 3, 6 10, 13</p> <p>Lessons 22, 23, 26, 27, 30, 31, 32, 33, 34, 35, 38, 72, 73, 75</p> <p>Lessons 28, 44, 58, 63, 126, 127, 128, 129, 174</p> <p>Chapters 1, 2, 12</p> <p>Lessons 5, 6, 16, 17, 18, 154</p> <p>Chapters 2, 3, 5, 6, 8, 12</p> <p>Lessons 24, 56, 98, 99</p> <p>Lessons 79, 102</p> <p>Lessons 71, 77</p> <p>Lessons 36, 37, 39</p> <p>Lessons 55, 155</p> <p>Chapters 1, 3, 5, 9, 13</p> <p>Lessons 1, 40, 122, 144</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, Jesus, and God the Holy Spirit. (Hebrews 1:3)</p> <p><b>2. What is the nature of external reality, that is, the world around us?</b></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><b>3. What is a human being?</b></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</p>
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<p>figures, including circles, triangles, rectangles, and squares (a special type of rectangle);</p> <p>(B) describe and identify three-dimensional geometric figures, including spheres, rectangular prisms (including cubes), cylinders, and cones;</p> <p>(C) describe and identify two- and three-dimensional geometric figures in order to sort them according to a given attribute using informal and formal language; and</p> <p>(D) use concrete models to combine two-dimensional geometric figures to make new geometric figures.</p> <p><b>(1.7) Measurement.</b> The student directly compares the attributes of length, area, weight/mass, capacity, and temperature. The student uses comparative language to solve problems and answer questions. The student selects and uses nonstandard units to describe length. <i>The student is expected to:</i></p> <p>(A) estimate and measure length using nonstandard units such as paper clips or sides of color tiles;</p> <p>(B) compare and order two or more concrete objects according to length (from longest to shortest);</p> <p>(C) describe the relationship between the size of the unit and the number of units needed to measure the length of an object;</p> <p>(D) compare and order the area of two or more two-dimensional surfaces (from covers the most to covers the least);</p> <p>(E) compare and order two or more containers according to capacity (from holds the most to holds the least);</p> <p>(F) compare and order two or more objects according to weight/mass (from heaviest to lightest); and</p> <p>(G) compare and order two or more objects according to relative temperature (from hottest to coldest).</p> <p><b>(1.8) Measurement.</b> The student understands that time can be measured. The student uses time to describe and compare situations. <i>The student is expected to:</i></p> <p>(A) order three or more events according to duration; and</p> <p>(B) read time to the hour and half-hour using analog and</p>	<p>Lesson 112</p> <p>Lessons 2, 3, 4, 59, 153</p> <p>Lessons 123, 167</p> <p>Chapters 7, 10, 12</p> <p>Lessons 83, 149</p> <p>Lessons 81, 82, 150</p> <p>Lessons 82, 83, 84, 85, 86</p> <p>Lessons 87, 161, 168</p> <p>Lessons 88, 89, 90, 91, 160, 170</p> <p>Lessons 92, 160</p> <p>Lessons 5, 132</p> <p>Chapters 4, 12</p> <p>Lesson 48</p> <p>Lessons 46, 47, 51, 158</p>	<p>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>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><b>4. What happens to a person at death?</b></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.</p>
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<p>digital clocks.</p> <p><b>(1.9) Probability and statistics.</b> The student displays data in an organized form. <i>The student is expected to:</i> (A) collect and sort data; and (B) use organized data to construct real-object graphs, picture graphs, and bar-type graphs.</p> <p><b>(1.10) Probability and statistics.</b> The student uses information from organized data. <i>The student is expected to:</i> (A) draw conclusions and answer questions using information organized in real-object graphs, picture graphs, and bar-type graphs; and (B) identify events as certain or impossible such as drawing a red crayon from a bag of green crayons.</p> <p><b>(1.11) Underlying processes and mathematical tools.</b> The student applies Grade 1 mathematics to solve problems connected to everyday experiences and activities in and outside of school. <i>The student is expected to:</i> (A) identify mathematics in everyday situations; (B) solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness; (C) select or develop an appropriate problem-solving plan or strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem; and (D) use tools such as real objects, manipulatives, and technology to solve problems.</p> <p><b>(1.12) Underlying processes and mathematical tools.</b> The student communicates about Grade 1 mathematics using informal language. <i>The student is expected to:</i> (A) explain and record observations using objects, words, pictures, numbers, and technology; and (B) relate informal language to mathematical language and</p>	<p>Chapters 8, 11, 12</p> <p>Lessons 100, 172, 173 Lessons 109, 141, 162</p> <p>Chapters 1, 5, 11</p> <p>Lessons 9, 61, 143</p> <p>Lesson 146</p> <p>Chapters 4, 6, 7, 10, 11, 13</p> <p>Lessons 52, 65, 109 Lessons 43, 63, 74, 75, 93, 98, 137</p> <p>Lessons 14, 121, 142, 148</p> <p>Lessons 60, 76, 100, 135, 169, 171 Chapters 4, 5, 8, 10, 13</p> <p>Lessons 49, 50, 62, 135, 166</p> <p>Lessons 103, 104</p>	<p>(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><b>5. <i>Why is it possible to know anything at all?</i></b></p> <p>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)</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"> <li>➤ The Bible is internally consistent and unified in its principles and claims.</li> <li>➤ There is tremendous coherence across the many authors and centuries during</li> </ul>
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<p>symbols.</p> <p><b>(1.13) Underlying processes and mathematical tools.</b> The student uses logical reasoning. <i>The student is expected to justify his or her thinking using objects, words, pictures, numbers, and technology.</i></p>	<p>Chapter 1, 9, 10 Lessons 14, 119, 132</p> <p><b>Student Activities</b> Role Play Games/Puzzles Stories Songs Projects Cooperative Learning Journaling Graphic Organizers Small Groups Drawing Manipulatives Writer’s Workshop Portfolio Written Practice Oral Discussion/Oral Practice</p> <p><b>Teaching Strategies</b> Direct Instruction Open-ended Questions Discussion Demonstration Brainstorming Problem Solving Read Aloud Facilitating Cooperative Learning Games Songs Manipulatives</p>	<p>which the various books were written and in which its stories unfold.</p> <ul style="list-style-type: none"> <li>➤ It is relevant to all the cultures of the world</li> </ul> <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><b>6. How do we know what is right and wrong?</b></p> <ul style="list-style-type: none"> <li>a. Ethics or the knowledge of right and wrong is based on the character of God as good (holy and loving). (Psalm 33:4)</li> <li>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)</li> <li>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)</li> <li>d. God has revealed His standard in the various laws and principles expressed in the Bible. (Psalm 111:10)</li> </ul>
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	<p>Modeling</p> <p><b>Evaluation Procedures</b>  Observation  Class Participation  Quizzes/Tests  Projects  Reports  Survey (oral/written)  Portfolio  Games  Demonstration</p> <p><b>Other Resources and Bibliography</b>  None</p>	<ul style="list-style-type: none"> <li>➤ He has dictated absolute moral truth to us.</li> <li>➤ Every truth must conform to Biblical principles.</li> <li>➤ Every choice must reflect God’s moral truth.</li> <li>➤ We must promote, defend, and teach these truths to others.</li> </ul> <p>7. <b><i>What is the meaning of human history?</i></b></p> <ol style="list-style-type: none"> <li>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)</li> <li>b. History is going somewhere, directed toward a known end. (Matthew 25:34)</li> <li>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)</li> <li>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)</li> </ol> <p><b><i>What should our response be to God?  What were we made for?</i></b></p> <p><b>We were made to</b>  <b>Love</b> – Matthew 22:37,  <b>Worship</b> – Romans 12:1,  <b>Obey</b> – 2 John 6, and  <b>Give Glory</b> – Psalm 96:3.</p>
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