

# *Afterschool Achievers: Math Club*

**correlated to  
Georgia's Mathematics Performance Standards**

**Kindergarten – Grade 8**



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**FORMAT FOR CORRELATION TO THE GEORGIA PERFORMANCE STANDARDS**

**Subject Area:** Mathematics

**State-Funded Course:** 27.01100 Mathematics/Kindergarten

**Textbook Title:** Afterschool Achievers: Math Club

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*The Georgia Performance Standards for grades K-8 Mathematics may be accessed on-line at: <http://www.georgiastandards.org/>.*

<u>Standard</u> (Cite Number)	<u>Standard</u> (Cite specific standard)	<u>Where Taught</u> (If print component, cite page number; if non-print, cite appropriate location.)
MKN  MKN1	<p><u>Numbers and Operations</u> Students will correctly represent the number and order of objects using numbers and understand them.</p> <p>Students will connect numerals to the quantities they represent.</p> <p>a. Count a number of objects up to 30.</p> <p>b. Produce models for number words through ten.</p> <p>c. Write numerals through 20 to label sets.</p> <p>d. Sequence and identify using ordinal numbers (1st-10th).</p> <p>e. Compare two or more sets of objects (1-10) and identify which set is equal to, more than, or less than the other.</p>	<p><b>Instructor’s Guide:</b> 2, 4, 5, 7, 9, 12, 14, 17, 22, 24, 27, 29, 30, 32, 34, 35, 39, 49, 54, 55, 58, 59, 67, 68, 80, 85, 88, 98, 105, 108, 110, 117, 118, 130, 135, 155, 169</p> <p><b>Instructor’s Guide:</b> 2, 4, 5, 7, 9, 12, 14, 17, 19, 22, 24, 27, 29, 34, 37, 39, 44, 49, 54, 55, 59, 74, 80, 105, 155</p> <p><b>Instructor’s Guide:</b> 4, 9, 14, 17, 19, 22, 24, 27, 29, 32, 38, 39, 44, 48, 49, 54, 55, 58, 59, 68, 80, 85, 88, 108, 110, 118, 135, 155</p> <p><b>Instructor’s Guide:</b> 163</p> <p><b>Instructor’s Guide:</b> 38, 48, 58, 68, 88, 98, 118</p>



MKM1	<p>Students will group objects according to common properties such as color, shape, texture, or number.</p> <ul style="list-style-type: none"> <li>a. Compare and order objects on the basis of length.</li> <li>b. Compare and order objects on the basis of capacity</li> <li>c. Compare and order objects on the basis of height.</li> <li>d. Compare and order objects on the basis of weight.</li> </ul>	<p><b>Instructor’s Guide:</b> 15, 40, 47, 92, 180</p> <p><b>Instructor’s Guide:</b> 47, 92, 180</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 1.</i>)</p> <p><b>Instructor’s Guide:</b> 47, 92, 180</p>
MKM2	<p>Students will understand the measurement of calendar time.</p> <ul style="list-style-type: none"> <li>a. Know the names of the days of the week.</li> <li>b. Know the months of the year.</li> <li>c. Know the four seasons.</li> </ul>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 1.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 1.</i>)</p> <p>No specific lesson addresses this standard.</p>
MKM3	<p>Students will tell time as it relates to a daily schedule.</p> <ul style="list-style-type: none"> <li>a. Order daily events.</li> <li>b. Tell the time when daily events occur, such as lunch, to the nearest hour.</li> <li>c. Know the name of the day of the week when weekly events occur in class.</li> </ul>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 1.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 1.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 1.</i>)</p>

MKG	<p><u>Geometry</u> Students will recognize and name basic geometric shapes and spatial relationships.</p>	
MKG1	<p>Students will correctly name simple two- and three-dimensional figures, and recognize them in the environment.</p> <p>a. Recognize and name the following basic two-dimensional shapes: triangles, rectangles, squares, and circles.</p> <p>b. Recognize and name the following three-dimensional shapes: spheres (balls), and cubes.</p> <p>c. Observe concrete objects in the environment and represent the objects using basic shapes, such as drawing a representation of a house using a square together with a triangle for the roof.</p> <p>d. Combine basic shapes into basic and more complicated shapes, and will decompose basic shapes into combinations of basic shapes.</p> <p>e. Compare geometric shapes and identify similarities and differences of the following two and three-dimensional shapes: triangles, rectangles, squares, circles, spheres, and cubes.</p>	<p><b>Instructor’s Guide:</b> 1, 6, 11, 16, 20, 21, 23, 26, 45, 53, 61, 66, 70, 71, 73, 87, 107, 137, 172, 178</p> <p><b>Instructor’s Guide:</b> 63, 113, 145, 148, 170</p> <p><b>Instructor’s Guide:</b> 1, 6, 11, 23, 53, 87, 137, 178</p> <p><b>Instructor’s Guide:</b> 53, 178</p> <p><b>Instructor’s Guide:</b> 20, 23, 53, 61, 63, 66, 71, 73, 113, 137, 145, 170, 178</p>
MKG2	<p>Students will understand basic positional relationships.</p> <p>a. Identify when an object is beside another object, above another object, or below another object.</p>	<p><b>Instructor’s Guide:</b> 42, 69</p>

MKG3	<p>b. Identify when an object is in front of another object, behind another object, inside another object or outside it.</p> <p>Students will identify, create, extend, and transfer patterns from one representation to another using actions, objects, and geometric shapes.</p>	<p><b>Instructor's Guide:</b> 42, 95, 104, 109, 113, 114, 125, 139, 163</p>
MKG3	<p>a. Identify a missing shape within a given pattern of geometric shapes.</p>	<p><b>Instructor's Guide:</b> 75, 121, 126, 131, 136, 171</p>
MKG3	<p>b. Extend a given pattern, and recognize similarities in different patterns.</p>	<p><b>Instructor's Guide:</b> 50, 57, 75, 97, 100, 121, 126, 131, 136, 141, 150, 151, 156, 157, 166, 167, 171, 175, 176</p>
MKD	<p><u>Data Analysis and Probability</u> Students will pose questions and gather data about themselves and their surroundings.</p>	
MKD1	<p>Students will pose information questions, collect data, organize, and record results using objects, pictures, and picture graphs.</p>	<p><b>Instructor's Guide:</b> 14, 93</p>
MKP	<p><u>Process Skills</u> Students will apply mathematical concepts and skills in the context of authentic problems and will understand concepts rather than merely follow a sequence of procedures. The students will use the process standards as a way of acquiring and using content knowledge.</p>	
MKP1	<p>Students will solve problems that arise in mathematics and in other contexts.</p> <p>a. Solve non-routine word problems using the strategy act out the problem or use objects.</p>	<p><b>Instructor's Guide:</b> 1-180</p>

	<p>b. With the use of manipulatives, solve routine word problems related to all appropriate kindergarten math standards.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
MKP2	<p>Students will investigate, develop, and evaluate mathematical arguments.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
MKP3	<p>Students will use the language of mathematics to express ideas precisely.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
MKP4	<p>Students understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
MKP5	<p>Students will create and use pictures, manipulatives, models, and symbols to organize, record, and communicate mathematical ideas.</p>	<p><b>Instructor's Guide:</b> 1-180</p>



<p>M1N2</p>	<p>e. Exchange equivalent quantities of coins by making fair trades involving combinations of pennies, nickels, dimes, and quarters and count out a combination needed to purchase items less than a dollar.</p> <p>f. Identify bills (\$1, \$5, \$10, \$20) by name and value and exchange equivalent quantities by making fair trades involving combinations of bills and count out a combination of bills needed to purchase items less than twenty dollars.</p> <p>Understand place value notation for the numbers between 1 and 100. (Discussions may allude to 3-digit numbers to assist in understanding place value.)</p> <p>a. Determine which multiple of ten a given number is nearest (rounding) using tools such as a sequential number line or hundreds chart to assist in estimating.</p> <p>b. Represent collections of less than 30 objects with 2-digit numbers and understand the meaning of place value. (Make sure that students, when given a number like 27 initially describe it as 2 tens and 7 ones, and only later use standard language, twenty-seven, when talking about the number.)</p>	<p><b>Instructor's Guide:</b> 75, 102, 151, 152, 155</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 3.</i>)</p> <p><b>Instructor's Guide:</b> 125, 156, 161</p> <p><b>Instructor's Guide:</b> 108, 112, 123, 126</p>
<p>M1N3</p>	<p>Students will add and subtract numbers less than 100 as well as understand and use the inverse relationship between addition and subtraction.</p> <p>c. Identify one more than, one less than, 10 more than, and 10 less than a given number.</p>	<p><b>Instructor's Guide:</b> 14, 19, 39, 44, 52, 67, 102, 125, 154, 156, 161, 176</p>

	<p>d. Skip-count by 2's, 5's, and 10's forward and backwards – to and from numbers up to 100.</p> <p>c. Compose/decompose numbers up to 10 (“break numbers apart”, e.g., 8 is represented as <math>4 + 4</math>, <math>3 + 5</math>, <math>5 + 2 + 1</math>, and <math>10 - 2</math>). Decompose numbers between 11 and 19 as one ten and the appropriate number of ones.</p> <p>d. Understand a variety of situations to which subtraction may apply: taking away from a set, comparing two sets, and determining how many more or how many less.</p> <p>e. Understand addition and subtraction number combinations using strategies such as counting on, counting back, doubles and making tens.</p> <p>f. Know the single-digit addition facts to 18 and corresponding subtraction facts with understanding and fluency. (Use strategies such as relating to facts already known, applying the commutative property, and grouping facts into families.)</p> <p>g. Apply addition and subtraction to 2 digit numbers without regrouping (e.g. <math>15 + 4</math>, <math>80 - 60</math>, <math>56 + 10</math>, <math>100 - 30</math>, <math>58 + 5</math>).</p> <p>h. Solve and create word problems involving addition and subtraction to 100 without regrouping. Use words, pictures and concrete models to interpret story problems and reflect the combining of sets as addition and taking away or comparing elements of sets as subtraction.</p>	<p><b>Instructor's Guide:</b> 106, 111, 113, 116, 121, 125, 136, 141, 145, 146, 156, 161, 172, 174, 176, 179</p> <p><b>Instructor's Guide:</b> 17, 22, 37, 59, 64, 69, 72, 74, 79, 84, 86, 89, 91, 92, 94, 99, 104, 107, 109, 112, 114, 119, 123, 124, 129, 130, 150, 170</p> <p><b>Instructor's Guide:</b> 52, 90</p> <p><b>Instructor's Guide:</b> 14, 17, 19, 22, 24, 28, 30, 32, 50, 54, 59, 62, 64, 69, 72, 74, 79, 84, 86, 89, 91, 92, 94, 99, 104, 107, 109, 110, 114, 119, 122, 124, 129, 130, 134, 137, 138, 139, 142, 166, 167, 169, 170, 174, 176, 177, 179</p> <p><b>Instructor's Guide:</b> 24, 30, 50, 54, 59, 62, 69, 72, 74, 84, 89, 91, 92, 99, 104, 107, 110, 114, 119, 122, 129, 130, 134, 137, 142, 144, 150, 159, 164, 167, 169, 170, 177</p> <p><b>Instructor's Guide:</b> 125, 161, 162</p> <p><b>Instructor's Guide:</b> 10, 70, 90</p>
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<p>M1N4</p>	<p>Students will count collections of up to 100 objects by dividing them into equal parts and represent the results using words, pictures, or diagrams.</p> <p>a. Use informal strategies to share objects equally between two to five people.</p> <p>b. Build number patterns, including concepts of even and odd, using various concrete representations. (Examples of concrete representations include a hundreds chart, ten grid frame, place value chart, number line, counters, or other objects.).</p> <p>c. Identify, label and relate fractions (halves, fourths) as equal parts of a whole using pictures and models.</p>	<p><b>Instructor’s Guide:</b> 113, 174, 179</p> <p><b>Instructor’s Guide:</b> 106, 113, 116, 121, 174, 179</p> <p><b>Instructor’s Guide:</b> 117, 118, 173</p>
<p>M1M</p>	<p><u>Measurement</u> Students will measure basic quantitative attributes of concrete objects.</p>	
<p>M1M1</p>	<p>Students will compare and/or order the length, weight, or capacity of two or more objects by using direct comparison or a nonstandard unit.</p> <p>a. Directly compare length, weight, and capacity of concrete objects.</p> <p>b. Estimate and measure using a non-standard unit that is smaller than the object to be measured.</p> <p>c. Measure with a tool by creating a “ruled” stick, tape, or container by marking off ten segments of the repeated single unit.</p>	<p><b>Instructor’s Guide:</b> 15, 33, 35, 42, 43, 55, 95, 115, 133</p> <p><b>Instructor’s Guide:</b> 133</p> <p><b>Instructor’s Guide:</b> 55</p>

M1M2	<p>Students will develop an understanding of the measurement of time.</p> <ol style="list-style-type: none"> <li>Tell time to the nearest hour and half hour and understand the movement of the minute hand and how it relates to the hour hand.</li> <li>Begin to understand the relationship of calendar time by knowing the number of days in a week and months in a year.</li> <li>Compare and/or order the sequence or duration of events (e.g., shorter/longer and before/after).</li> </ol>	<p><b>Instructor's Guide:</b> 57, 135, 147, 148, 175</p> <p><b>Instructor's Guide:</b> 47, 93, 98</p> <p><b>Instructor's Guide:</b> 47, 93, 98</p>
M1G	<p>Students will understand the concepts of basic geometric shapes and spatial relationships of concrete objects.</p>	
M1G1	<p>Students will study and create various two- and three-dimensional figures and identify basic figures (squares, circles, triangles, and rectangles) within them.</p> <ol style="list-style-type: none"> <li>Build, draw, name, and describe triangles, rectangles, pentagons, and hexagons.</li> <li>Build, represent, name, and describe cylinders, cones, and rectangular prisms (objects that have the shape of a box).</li> <li>Create pictures and designs using shapes, including overlapping shapes.</li> </ol>	<p><b>Instructor's Guide:</b> 3, 8, 12, 13, 18, 21, 23, 60, 80, 100, 132, 153</p> <p><b>Instructor's Guide:</b> 132</p> <p><b>Instructor's Guide:</b> 81, 101</p>

M1G2	Students will compare, contrast, and/or classify geometric shapes by the common attributes of position, shape, size, number of sides, and number of corners.	<b>Instructor's Guide:</b> 3, 8, 12, 13, 18, 23, 60, 80, 100, 132, 153
M1G3	Students will arrange and describe objects in space by proximity, position, and direction (near, far, below, above, up, down, behind, in front of, next to, and left or right of).	<b>Instructor's Guide:</b> 20, 40
M1D	<u>Data Analysis and Probability</u> Students will pose questions, collect, organize and interpret data about themselves and their surroundings.	
M1D1	Students will create simple tables and graphs and interpret them.	
	a. Interpret tally marks, picture graphs and bar graphs	<b>Instructor's Guide:</b> 163
	b. Organize and record data using objects, pictures, tally marks, and picture graphs.	<b>Instructor's Guide:</b> 163
M1P	<u>Process Skills</u> Students will apply mathematical concepts and skills in the context of authentic problems and will understand concepts rather than merely follow a sequence of procedures. The student will use the process standards as a way of acquiring and using content knowledge.	
M1P1	Students will solve problems that arise in mathematics and in other contexts.	

	<p>a. Solve non-routine word problems using the strategy make a picture or diagram and continue to develop the strategy act out or use objects learned in kindergarten.</p> <p>b. Solve single step routine word problems related to all appropriate first grade math standards.</p> <p>c. Determine the operation(s) needed to solve a problem.</p> <p>d. Determine the most efficient way to solve a problem (mentally, paper/pencil, or calculator).</p>	<p><b>Instructor's Guide:</b> 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 45, 46, 48, 50, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 62, 63, 64, 65, 66, 69, 70, 71, 73, 74, 75, 76, 77, 79, 80, 81, 85, 87, 89, 90, 94, 95, 96, 101, 102, 104, 109, 111, 112, 113, 117, 119, 123, 124, 128, 129, 136, 138, 139, 149, 151, 152, 156, 158, 163, 164, 169, 170, 172</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 10, 70, 90</p> <p><b>Instructor's Guide:</b> 1-180</p>
M1P2	Students will investigate, develop, and evaluate mathematical arguments.	<b>Instructor's Guide:</b> 1-180
M1P3	Students will use the language of mathematics to express ideas precisely.	<b>Instructor's Guide:</b> 1-180
M1P4	Students understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.	<b>Instructor's Guide:</b> 1-180
M1P5	Students will create and use pictures, manipulatives, models, and symbols to organize, record, and communicate mathematical ideas.	<b>Instructor's Guide:</b> 1-180

**FORMAT FOR CORRELATION TO THE GEORGIA PERFORMANCE STANDARDS**

**Subject Area:** Mathematics

**State-Funded Course:** 27.01300 Mathematics / Grade 2

**Textbook Title:** Afterschool Achievers: Math Club

**Publisher:** Great Source Education Group

*The Georgia Performance Standards for grades K-8 Mathematics may be accessed on-line at: <http://www.georgiastandards.org/>.*

<u>Standard</u> (Cite Number)	<u>Standard</u> (Cite specific standard)	<u>Where Taught</u> (If print component, cite page number; if non-print, cite appropriate location.)
M2N	<p><u>Numbers and Operations</u> Students will further develop their understanding of numbers - including fractions - and how to represent them. The students will understand and apply addition, subtraction and multiplication through concrete manipulation and perform basic calculations.</p>	
M2N1	<p>Students will understand the place value representation of whole numbers through four digits.</p> <p>a. Represent numbers using a variety of models, diagrams, and number sentences (e.g., 4703 represented as <math>4,000 + 700 + 3</math>, and units, 47 hundreds + 3, or <math>4,500 + 203</math>).</p> <p>b. Understand the relative magnitudes of numbers using 10 as a unit, 100 as a unit, or 1000 as a unit. Represent 2-digit numbers with drawings of tens and ones and 3-digit numbers with drawings of hundreds, tens, and ones.</p>	<p><b>Instructor's Guide:</b> 36, 40, 60, 81, 90, 111, 122, 123</p> <p><b>Instructor's Guide:</b> 36, 40, 60, 81, 90, 111, 122, 123</p>

<p>M2N2</p>	<p>c. Use money as a medium of exchange. Count back change and use decimal notation and the dollar and cent symbols to represent a collection of coins and currency.</p> <p>Students will build fluency with multi-digit addition and subtraction.</p>	<p><b>Instructor's Guide:</b> 34, 59, 77, 140</p>
<p>M2N3</p>	<p>a. Correctly add and subtract two whole numbers up to three digits each with regrouping.</p> <p>b. Understand and use the inverse relation between addition and subtraction to solve problems and check solutions.</p> <p>c. Use mental math strategies such as benchmark numbers to solve problems.</p> <p>d. Use basic properties of addition (commutative, associative, and identity) to simplify problems (e.g., <math>98 + 17</math> by taking two from 17 and adding it to the 98 to make 100 and replacing the original problem by the sum <math>100 + 15</math>).</p> <p>e. Estimate to determine if solutions are reasonable for addition and subtraction.</p> <p>Students will understand multiplication, multiply numbers, and verify results.</p>	<p><b>Instructor's Guide:</b> 19, 31, 36, 39, 44, 127, 144, 164, 176</p> <p><b>Instructor's Guide:</b> 33, 64, 102, 127, 158</p> <p><b>Instructor's Guide:</b> 39, 44, 54, 96, 127, 137, 176</p> <p><b>Instructor's Guide:</b> 54, 127, 137</p> <p><b>Instructor's Guide:</b> 5, 9, 14, 61, 79, 89, 95, 96, 104, 109, 114, 116, 120, 129, 134, 149, 154, 169</p> <p><b>Instructor's Guide:</b> 73, 112, 113, 124, 128, 136, 139, 165, 174, 179</p>

<p>M2N4</p>	<p>b. Use repeated addition, arrays, and counting by multiples (skip counting) to correctly multiply 1-digit numbers and construct the multiplication table.</p> <p>c. Use the multiplication table (grid) to determine a product of two numbers.</p> <p>d. Use repeated subtraction, equal sharing, and forming equal groups to divide large collections of objects and determine factors for multiplication.</p> <p>Students will understand and compare common fractions with small denominators.</p>	<p><b>Instructor's Guide:</b> 112, 113, 124, 128, 136, 139, 141, 165, 174, 179</p> <p><b>Instructor's Guide:</b> 141</p> <p><b>Instructor's Guide:</b> 57, 135, 170, 178</p>
<p>M2N5</p>	<p>a. Model, identify, label, and compare fractions (thirds, sixths, eighths, tenths) as a representation of equal parts of a whole or of a set.</p> <p>b. Know that when all fractional parts are included, such as three thirds, the result is equal to the whole.</p> <p>Students will represent and interpret quantities and relationships using mathematical expressions including equality and inequality signs (=, &lt;, &gt;).</p>	<p><b>Instructor's Guide:</b> 47, 48, 57, 58, 80, 97, 138, 142</p> <p><b>Instructor's Guide:</b> 48, 57, 97, 138, 142</p> <p><b>Instructor's Guide:</b> 51, 127, 137</p> <p><b>Instructor's Guide:</b> 51, 127, 137</p>

M2M	<u>Measurement</u> Students will understand length, time, and temperature and choose an appropriate tool to measure them.	
M2M1	<p>Students will know the standard units of inch, foot, yard, and metric units of centimeter and meter and measure length to the nearest inch or centimeter.</p> <p>a. Compare the relationship of one unit to another by measuring objects twice using different units each time.</p> <p>b. Estimate lengths, and then measure to determine if estimations were reasonable.</p> <p>c. Determine an appropriate tool and unit for measuring.</p>	<p><b>Instructor's Guide:</b> 7, 8</p> <p><b>Instructor's Guide:</b> 7, 30, 70</p> <p><b>Instructor's Guide:</b> 7, 20, 30, 45, 62, 83, 85, 93, 148, 150, 160, 168</p>
M2M2	Students will tell time to the nearest five minutes and know relationships of time such as the number of minutes in an hour and hours in a day.	<b>Instructor's Guide:</b> 82, 108
M2M3	Students will estimate, then measure, temperature (Fahrenheit) and determine if estimations were reasonable.	No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 3.</i> )
M2G	<u>Geometry</u> Students will understand basic and compound geometric shapes together with the elements from which they are composed.	

M2G1	Students will describe and classify plane figures (triangles, square, rectangle, trapezoid, quadrilateral, pentagon, hexagon, and irregular polygonal shapes) according to the number of edges and vertices and the sizes of angles (right angle, obtuse, acute).	<b>Instructor's Guide:</b> 11, 15, 23, 38, 52, 66, 78, 115, 133, 173, 175
M2G2	<p>Students will describe and classify solid geometric figures (prisms, cylinders, cones, and spheres) according to such things as the number of edges and vertices and the number and shape of faces and angles.</p> <p>a. Recognize the (plane) shapes of the faces of a geometric solid and count the number of faces of each type.</p> <p>b. Recognize the shape of an angle as a right angle, an obtuse or acute angle.</p>	<p><b>Instructor's Guide:</b> 3, 23, 38, 63, 88, 98, 125, 133, 163, 173, 175</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 4.</i>)</p>
M2G3	Students will describe the change in attributes as two- and three-dimensional shapes are cut and rearranged.	<b>Instructor's Guide:</b> 115
M2D	<u>Data Analysis and Probability</u> Students will pose questions, collect, organize and interpret data about themselves and their surroundings.	
M2D1	Students will create simple tables and graphs and interpret their meaning.	

M2P	<p>a. Organize and display data using picture graphs, Venn diagrams, bar graphs, and simple charts/tables to record results.</p> <p>b. Know how to interpret picture graphs, Venn diagrams, and bar graphs.</p> <p><u>Process Skills</u> Students will apply mathematical concepts and skills in the context of authentic problems and will understand concepts rather than merely follow a sequence of procedures. The students will use the process standards as a way of acquiring and using content knowledge.</p>	<p><b>Instructor’s Guide:</b> 25, 70, 85, 155</p> <p><b>Instructor’s Guide:</b> 25</p>
M2P1	<p>Students will solve problems that arise in mathematics and in other contexts.</p> <p>a. Solve non-routine word problems using the strategies of use or look for a pattern or guess and check as well as all strategies learned in previous grades.</p> <p>b. The student will solve single step routine word problems related to all appropriate second grade math standards.</p> <p>c. Determine the operation(s) needed to solve a problem.</p> <p>d. Determine the most efficient way to solve a problem (mentally, paper/pencil, or calculator).</p>	<p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 10, 55, 110</p> <p><b>Instructor’s Guide:</b> 1-180</p>
M2P2	<p>Students will be able to investigate, develop, and evaluate mathematical arguments.</p>	<p><b>Instructor’s Guide:</b> 1-180</p>

M2P3	Students will be able to use the language of mathematics to express ideas precisely.	<b>Instructor's Guide:</b> 1-180
M2P4	Students understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.	<b>Instructor's Guide:</b> 1-180
M2P5	Students will be able to create and use pictures, manipulatives, models, and symbols to organize, record, and communicate mathematical ideas.	<b>Instructor's Guide:</b> 1-180



<p>M3N2</p>	<p>Students will further develop their skills of addition and subtraction and apply them in problem solving.</p> <p>a. Use the properties of addition and subtraction to compute and verify the results of computation.</p> <p>b. Use mental math and estimation strategies to add and subtract.</p> <p>c. Solve problems requiring addition and subtraction.</p>	<p><b>Instructor's Guide:</b> 4, 33, 85, 105</p> <p><b>Instructor's Guide:</b> 1, 2, 4, 8, 9, 11, 14, 19, 24, 33, 34, 37, 39, 41, 46, 49, 51, 53, 56, 61, 66, 68, 85, 94, 144, 154, 164</p> <p><b>Instructor's Guide:</b> 1, 2, 4, 6, 7, 8, 9, 10, 11, 12, 14, 19, 24, 31, 33, 34, 36, 37, 39, 41, 46, 49, 51, 53, 56, 61, 66, 68, 85, 94, 144, 154, 164</p>
<p>M3N3</p>	<p>Students will further develop their understanding of multiplication of whole numbers and develop the ability to apply it in problem solving.</p> <p>a. Describe the relationship between addition and multiplication, i.e., multiplication is defined as repeated addition.</p> <p>b. Know the multiplication facts with understanding and fluency to <math>10 \times 10</math>.</p> <p>c. Use arrays and area models to develop understanding of the distributive property and to determine partial products for multiplication of 2- or 3-digit numbers by a 1-digit number.</p> <p>d. Understand the effect on the product when multiplying by multiples of 10.</p> <p>e. Apply the identity, commutative and associative properties of multiplication and verify the results.</p>	<p><b>Instructor's Guide:</b> 23, 171</p> <p><b>Instructor's Guide:</b> 23, 55, 62, 64, 69, 77, 79, 84, 86, 89, 91, 97, 102, 124, 126, 129, 131, 136, 138, 147, 149, 153, 154, 159, 164, 165, 169, 171, 173, 174, 179</p> <p><b>Instructor's Guide:</b> 170</p> <p><b>Instructor's Guide:</b> 102, 171</p> <p><b>Instructor's Guide:</b> 53, 84</p>

<p>M3N4</p>	<p>f. Use mental math and estimation strategies to multiply.</p> <p>g. Solve problems requiring multiplication.</p> <p>Students will understand the meaning of division and develop the ability to apply it in problem solving.</p> <p>a. Understand the relationship between division and multiplication and between division and subtraction.</p> <p>b. Recognize that division may be two situations: the first is determining how many equal parts of a given size or amount may be taken away from the whole as in repeated subtraction, and the second is determining the size of the parts when the whole is separated into a given number of equal parts as in a sharing model.</p> <p>c. Recognize problem-solving situations in which division may be applied and write corresponding mathematical expressions.</p> <p>d. Explain the meaning of a remainder in division in different circumstances.</p> <p>e. Divide a 2- and 3-digit number by a 1-digit divisor.</p> <p>f. Solve problems requiring division.</p>	<p><b>Instructor's Guide:</b> 171</p> <p><b>Instructor's Guide:</b> 23, 55, 62, 91, 170</p> <p><b>Instructor's Guide:</b> 112</p> <p><b>Instructor's Guide:</b> 55, 112, 120, 124, 129, 130, 134, 141, 146, 151, 163, 175</p> <p><b>Instructor's Guide:</b> 55, 112, 120, 124, 129, 130, 134, 141, 146, 151, 163, 175</p> <p><b>Instructor's Guide:</b> 130, 134, 139, 141, 146, 151, 163</p> <p><b>Instructor's Guide:</b> 17, 151, 163, 175</p> <p><b>Instructor's Guide:</b> 55, 112, 120, 124, 129, 130, 134, 141, 146, 151, 163, 175</p>
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<p>M3N5</p>	<p>Students will understand the meaning of decimal fractions and common fractions in simple cases and apply them in problem-solving situations.</p> <p>a. Understand a decimal fraction (i.e., 0.1) and a common fraction (i.e., 1/10) represent parts of a whole.</p> <p>b. Understand the fraction <math>a/b</math> represents <math>a</math> equal sized parts of a whole that is divided into <math>b</math> equal sized parts.</p> <p>c. Understand a one place decimal fraction represents tenths, i.e., <math>0.3 = 3/10</math>.</p> <p>d. Know and use decimal fractions and common fractions to represent the size of parts created by equal divisions of a whole.</p> <p>e. Understand the concept of addition and subtraction of decimal fractions and common fractions with like denominators.</p> <p>f. Model addition and subtraction of decimal fractions and common fractions.</p> <p>g. Solve problems involving fractions.</p>	<p><b>Instructor's Guide:</b> 82, 83, 145</p> <p><b>Instructor's Guide:</b> 82, 83, 145</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 4.</i>)</p> <p><b>Instructor's Guide:</b> 137, 150</p> <p><b>Instructor's Guide:</b> 137, 150</p> <p><b>Instructor's Guide:</b> 137, 150</p> <p><b>Instructor's Guide:</b> 137, 150</p>
<p>M3M</p>	<p><u>Measurement</u> Students will understand and measure time and length. They will also model and calculate perimeter and area of simple geometric figures.</p>	
<p>M3M1</p>	<p>Students will further develop their understanding of the concept of time by determining elapsed time of a full, half and quarter-hour.</p>	<p><b>Instructor's Guide:</b> 38, 72, 88, 125</p>

M3M2	<p>Students will measure length choosing appropriate units and tools.</p> <ol style="list-style-type: none"> <li>Use the units kilometer (km) and mile (mi.) to discuss the measure of long distances.</li> <li>Measure to the nearest <math>\frac{1}{2}</math> inch, <math>\frac{1}{4}</math> inch and millimeter (mm) in addition to the previously learned inch, foot, yard, centimeter, and meter.</li> <li>Estimate length and represent it using appropriate units.</li> <li>Compare one unit to another within a single system of measurement.</li> </ol>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 4.</i>)</p> <p><b>Instructor's Guide:</b> 63, 80</p> <p><b>Instructor's Guide:</b> 50, 63</p> <p><b>Instructor's Guide:</b> 17, 63, 80, 155, 160</p>
M3M3	<p>Students will understand and measure the perimeter of simple geometric figures (squares and rectangles).</p> <ol style="list-style-type: none"> <li>Understand the meaning of the linear unit and measurement in perimeter.</li> <li>Understand the concept of perimeter as being the boundary of a simple geometric figure.</li> <li>Determine the perimeter of a simple geometric figure by measuring and summing the lengths of the sides.</li> </ol>	<p><b>Instructor's Guide:</b> 27, 100, 133, 156</p> <p><b>Instructor's Guide:</b> 27, 100, 133, 156</p> <p><b>Instructor's Guide:</b> 27, 100, 133, 156</p>
M3M4	<p>Students will understand and measure the area of simple geometric figures (squares and rectangles).</p> <ol style="list-style-type: none"> <li>Understand the meaning of the square unit and measurement in area.</li> </ol>	<p><b>Instructor's Guide:</b> 27, 133, 161</p>

M3G	<p>b. Model (by tiling) the area of a simple geometric figure using square units (square inch, square foot, etc.).</p> <p>c. Determine the area of squares and rectangles by counting, addition, and multiplication with models.</p> <p><u>Geometry</u> Students will further develop their understanding of characteristics of previously studied geometric figures.</p>	<p><b>Instructor's Guide:</b> 27, 133, 161</p> <p><b>Instructor's Guide:</b> 27, 133, 161</p>
M3G1	<p>Students will further develop their understanding of geometric figures by drawing them. They will also state and explain their properties.</p> <p>a. Draw and classify previously learned fundamental geometric figures and scalene, isosceles and equilateral triangles.</p> <p>b. Identify and explain the properties of fundamental geometric figures.</p> <p>c. Examine and compare angles of fundamental geometric figures.</p> <p>d. Identify the center, diameter, and radius of a circle.</p>	<p><b>Instructor's Guide:</b> 15, 45, 57, 93, 108, 111, 135, 142, 176, 178</p> <p><b>Instructor's Guide:</b> 15, 45, 57, 93, 108, 111, 135, 142, 176, 178</p> <p><b>Instructor's Guide:</b> 15, 93, 111</p> <p><b>Instructor's Guide:</b> 82, 108, 121</p>
M3A	<p><u>Algebra</u> Students will understand how to express relationships as mathematical expressions.</p>	

M3A1	<p>Students will use mathematical expressions to represent relationships between quantities and interpret given expressions.</p> <p>a. Describe and extend numeric and geometric patterns.</p> <p>b. Describe and explain a quantitative relationship represented by a formula (such as the perimeter of a geometric figure).</p> <p>c. Use a symbol, such as <math>x</math> and <math>\Delta</math>, to represent an unknown and find the value of the unknown in a number sentence.</p>	<p><b>Instructor's Guide:</b> 6, 18, 21, 58, 61, 67, 76, 115, 121, 126, 136, 141, 146, 151, 153, 156</p> <p><b>Instructor's Guide:</b> 27, 100, 133, 156</p> <p><b>Instructor's Guide:</b> 90</p>
M3D	<p><u>Data Analysis</u> Students will gather, organize, and display data and interpret graphs.</p>	
M3D1	<p>Students will create and interpret simple tables and graphs.</p> <p>a. Solve problems by organizing and displaying data in bar graphs and tables.</p> <p>b. Construct and interpret bar graphs using scale increments of 1, 2, 5, and 10.</p>	<p><b>Instructor's Guide:</b> 25</p> <p><b>Instructor's Guide:</b> 25</p>
M3P	<p><u>Process Skills</u> Students will apply mathematical concepts and skills in the context of authentic problems and will understand concepts rather than merely follow a sequence of procedures. The students will use the process standards as a way of acquiring and using content knowledge.</p>	

M3P1	<p>Students will solve problems that arise in mathematics and in other contexts.</p> <ol style="list-style-type: none"> <li>a. Solve non-routine word problems using the strategy of logical reasoning as well as all strategies learned in previous grades.</li> <li>b. Solve single and multi-step routine word problems related to all appropriate third grade math standards.</li> <li>c. Determine the operation(s) needed to solve a problem.</li> <li>d. Determine the most efficient way to solve a problem (mentally, paper/pencil, or calculator).</li> </ol>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 75, 90</p> <p><b>Instructor's Guide:</b> 1-180</p>
M3P2	<p>Students will investigate, develop, and evaluate mathematical arguments.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
M3P3	<p>Students will use the language of mathematics to express ideas precisely.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
M3P4	<p>Students understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
M3P5	<p>Students will create and use pictures, manipulatives, models, and symbols to organize, record, and communicate mathematical ideas.</p>	<p><b>Instructor's Guide:</b> 1-180</p>

**FORMAT FOR CORRELATION TO THE GEORGIA PERFORMANCE STANDARDS**

**Subject Area:** Mathematics

**State-Funded Course:** 27.01500 Mathematics / Grade 4

**Textbook Title:** Afterschool Achievers: Math Club

**Publisher:** Great Source Education Group

*The Georgia Performance Standards for grades K-8 Mathematics may be accessed on-line at: <http://www.georgiastandards.org/>.*

<b><u>Standard</u></b> (Cite Number)	<b><u>Standard</u></b> (Cite specific standard)	<b><u>Where Taught</u></b> (If print component, cite page number; if non-print, cite appropriate location.)
M4N	<p><u>Numbers and Operations</u> Students will further develop their understanding of whole numbers and master the four basic operations with whole numbers by solving problems. They will also understand rounding and when to appropriately use it. Students will add and subtract decimal fractions and common fractions with common denominators.</p>	
M4N1	<p>Students will further develop their understanding of how whole numbers are represented in the base-ten numeration system.</p> <p>a. Identify place value names and places from hundredths through one million.</p> <p>b. Equate a number's word name, its standard form, and its expanded form.</p>	<p><b>Instructor's Guide:</b> 27, 95, 97, 103, 147, 174, 179</p> <p><b>Instructor's Guide:</b> 95</p>

M4N2	<p>Students will understand and apply the concept of rounding numbers.</p> <ol style="list-style-type: none"> <li>Round numbers to the nearest ten, hundred, or thousand.</li> <li>Describe situations in which rounding numbers would be appropriate and determine whether to round to the nearest ten, hundred, or thousand.</li> <li>Understand the meaning of rounding a decimal fraction to the nearest whole number.</li> <li>Represent the results of computation as a rounded number when appropriate and estimate a sum or difference by rounding numbers.</li> </ol>	<p><b>Instructor's Guide:</b> 22, 25, 62, 100, 169, 173, 174, 179</p> <p><b>Instructor's Guide:</b> 25, 100, 173</p> <p><b>Instructor's Guide:</b> 178</p> <p><b>Instructor's Guide:</b> 25, 100, 173</p>
M4N3	<p>Students will solve problems involving multiplication of 2-3 digit numbers by 1-2 digit numbers.</p>	<p><b>Instructor's Guide:</b> 108, 119, 124, 129</p>
M4N4	<p>Students will further develop their understanding of division of whole numbers and divide in problem solving situations without calculators.</p> <ol style="list-style-type: none"> <li>Know the division facts with understanding and fluency.</li> <li>Solve problems involving division by a 2-digit number (including those that generate a remainder).</li> <li>Understand the relationship between dividend, divisor, quotient, and remainder.</li> </ol>	<p><b>Instructor's Guide:</b> 40, 59, 69, 74, 75, 79, 84, 125, 170</p> <p><b>Instructor's Guide:</b> 79, 171, 176</p> <p><b>Instructor's Guide:</b> 84, 125, 141, 142, 146, 151, 156, 161, 166, 171, 176</p>

<p>M4N5</p>	<p>d. Understand and explain the effect on the quotient of multiplying or dividing both the divisor and dividend by the same number. (2050 ÷ 50 yields the same answer as 205 ÷ 5).</p> <p>Students will further develop their understanding of the meaning of decimal fractions and use them in computations.</p> <p>a. Understand decimal fractions are a part of the base-ten system.</p> <p>b. Understand the relative size of numbers and order two digit decimal fractions.</p> <p>c. Add and subtract both one and two digit decimal fractions.</p> <p>d. Model multiplication and division of decimal fractions by whole numbers.</p> <p>e. Multiply and divide both one and two digit decimal fractions by whole numbers.</p>	<p><b>Instructor’s Guide:</b> 141, 146, 151, 156, 161, 166, 171, 176</p> <p><b>Instructor’s Guide:</b> 112, 133, 143, 145, 147</p> <p><b>Instructor’s Guide:</b> 175</p> <p><b>Instructor’s Guide:</b> 165</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 5.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 5.</i>)</p>
<p>M4N6</p>	<p>Students will further develop their understanding of the meaning of common fractions and use them in computations.</p> <p>a. Understand representations of simple equivalent fractions.</p> <p>b. Add and subtract fractions and mixed numbers with common denominators. (Denominators should not exceed twelve.)</p> <p>c. Convert and use mixed numbers and improper fractions interchangeably.</p>	<p><b>Instructor’s Guide:</b> 113, 144, 150, 154</p> <p><b>Instructor’s Guide:</b> 155, 160</p> <p><b>Instructor’s Guide:</b> 107, 145, 154</p>

M4N7	<p>Students will explain and use properties of the four arithmetic operations to solve and check problems.</p> <ol style="list-style-type: none"> <li>Describe situations in which the four operations may be used and the relationships among them.</li> <li>Compute using the order of operations, including parentheses.</li> <li>Compute using the commutative, associative, and distributive properties.</li> <li>Use mental math and estimation strategies to compute.</li> </ol>	<p><b>Instructor's Guide:</b> 157</p> <p><b>Instructor's Guide:</b> 15, 157</p> <p><b>Instructor's Guide:</b> 67, 90, 115</p> <p><b>Instructor's Guide:</b> 25, 97, 100, 102, 117, 122, 124, 129, 134, 177</p>
M4M	<p><u>Measurement</u> Students will measure weight in appropriate metric and standard units. They will also measure angles.</p>	
M4M1	<p>Students will understand the concept of weight and how to measure it.</p> <ol style="list-style-type: none"> <li>Use standard and metric units to measure the weight of objects.</li> <li>Know units used to measure weight (gram, kilogram, ounces, pounds and tons).</li> <li>Compare one unit to another within a single system of measurement.</li> </ol>	<p><b>Instructor's Guide:</b> 30, 55</p> <p><b>Instructor's Guide:</b> 30, 55, 73</p> <p><b>Instructor's Guide:</b> 8, 33</p>

M4M2	<p>Students will understand the concept of angles and how to measure it.</p> <p>a. Use tools, such as a protractor or angle ruler, and other methods such as paper folding, drawing a diagonal in a square, to measure angles.</p> <p>b. Understand the meaning and measure of a half rotation (<math>180^\circ</math>) and a full rotation (<math>360^\circ</math>).</p>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p><b>Instructor's Guide:</b> 163</p>
M4G	<p><u>Geometry</u> Students will understand and construct plane and solid geometric figures. They will also graph points on the coordinate plane.</p>	
M4G1	<p>Students will define and identify the characteristics of geometric figures through examination and construction.</p> <p>a. Examine and compare angles in order to classify and identify triangles by their angles.</p> <p>b. Describe parallel and perpendicular lines in plane geometric figures.</p> <p>c. Examine and classify quadrilaterals (including parallelograms, squares, rectangles, trapezoids, and rhombi).</p> <p>d. Compare and contrast the relationships among quadrilaterals.</p>	<p><b>Instructor's Guide:</b> 3, 110</p> <p><b>Instructor's Guide:</b> 42</p> <p><b>Instructor's Guide:</b> 158</p> <p><b>Instructor's Guide:</b> 158</p>

M4G2	<p>Students will understand fundamental solid figures.</p> <ol style="list-style-type: none"> <li>Compare and contrast a cube and a rectangular prism in terms of the number and shape of their faces, edges, and vertices.</li> <li>Describe parallel and perpendicular lines and planes in connection with the rectangular prism.</li> <li>Construct/collect models for solid geometric figures (cube, prisms, cylinder, etc.).</li> </ol>	<p><b>Instructor's Guide:</b> 60</p> <p>No specific lesson addresses this standard. (See <i>Math at Hand.</i>)</p> <p><b>Instructor's Guide:</b> 28, 60</p>
M4G3	<p>Students will use the coordinate system.</p> <ol style="list-style-type: none"> <li>Understand and apply ordered pairs in the first quadrant of the coordinate system.</li> <li>Locate a point in the first quadrant in the coordinate plane and name the ordered pair.</li> <li>Graph ordered pairs in the first quadrant.</li> </ol>	<p><b>Instructor's Guide:</b> 135</p> <p><b>Instructor's Guide:</b> 135</p> <p><b>Instructor's Guide:</b> 135</p>
M4A	<p><u>Algebra</u> Students will investigate and represent mathematical relationships between quantities using mathematical expressions in problem-solving situations.</p>	
M4A1	<p>Students will represent and interpret mathematical relationships in quantitative expressions.</p> <ol style="list-style-type: none"> <li>Understand and apply patterns and rules to describe relationships and solve problems.</li> <li>Represent unknowns using symbols, such as <math>\_</math> and <math>\Delta</math>.</li> </ol>	<p><b>Instructor's Guide:</b> 7, 21, 31, 36, 41, 46, 51, 61, 91, 96, 118, 136, 138, 140</p> <p><b>Instructor's Guide:</b> 40, 96, 140, 152, 167, 172</p>

M4D	<p>c. Write and evaluate mathematical expressions using symbols and different values.</p> <p><u>Data Analysis</u> Students will gather, organize, and display data. They will also compare features of graphs.</p>	<p><b>Instructor’s Guide:</b> 40, 96, 152, 167, 170, 172</p>
M4D1	<p>Students will gather, organize, and display data according to the situation and compare related features.</p> <p>a. Represent data in bar, line and pictographs.</p> <p>b. Investigate the features and tendencies of graphs.</p> <p>c. Compare different graphical representations for a given set of data.</p> <p>d. Identify missing information and duplications in data.</p>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 5.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 5.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 5.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 5.</i>)</p>
M4P	<p><u>Process Skills</u> Students will apply mathematical concepts and skills in the context of authentic problems and will understand concepts rather than merely follow a sequence of procedures. Students will use the process standards as a way of acquiring and using content knowledge.</p>	

M4P1	<p>Using the appropriate technology, students will solve problems that arise in mathematics and in other contexts.</p> <ul style="list-style-type: none"> <li>a. Solve non-routine word problems using the strategies of work backwards, use or make a table, and make an organized list as well as all strategies learned in previous grades.</li> <li>b. Solve single and multi-step routine word problems related to all appropriate fourth grade math standards.</li> <li>c. Determine the operation(s) needed to solve a problem.</li> <li>d. Determine the most efficient way to solve a problem (mentally, paper/pencil, or calculator).</li> </ul>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 35, 47, 52, 73, 75, 80, 114, 127</p> <p><b>Instructor's Guide:</b> 1-180</p>
M4P2	<p>Students will investigate, develop, and evaluate mathematical arguments.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
M4P3	<p>Students will use the language of mathematics to express ideas precisely.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
M4P4	<p>Students understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.</p>	<p><b>Instructor's Guide:</b> 1-180</p>
M4P5	<p>Students will create and use pictures, manipulatives, models, and symbols to organize, record, and communicate mathematical ideas.</p>	<p><b>Instructor's Guide:</b> 1-180</p>



M5N2	<p>Students will further develop their understanding of decimal fractions as part of the base-ten number system.</p> <p>a. Understand place value.</p> <p>b. Analyze the effect on the product when a number is multiplied by 10, 100, 1000, 0.1, and 0.01.</p>	<p><b>Instructor's Guide:</b> 1, 16, 52, 77, 95, 97, 152</p> <p><b>Instructor's Guide:</b> 46, 97, 165</p>
M5N3	<p>Students will further develop their understanding of the meaning of multiplication and division with decimal fractions and use them.</p> <p>a. Model multiplication and division of decimal fractions by another decimal fraction.</p> <p>b. Explain the process of multiplication and division, including situations in which the multiplier and divisor are both whole numbers and decimal fractions.</p> <p>c. Multiply and divide with decimal fractions including decimal fractions less than one and greater than one.</p> <p>d. Understand the relationships and rules for multiplication and division of whole numbers also apply to decimal fractions.</p>	<p><b>Instructor's Guide:</b> 139</p> <p><b>Instructor's Guide:</b> 7, 19, 24, 29, 34, 39, 42, 46, 50, 53, 59, 62, 64, 68, 69, 74, 75, 79, 82, 93, 100, 114, 117, 124, 163</p> <p><b>Instructor's Guide:</b> 97, 139</p> <p><b>Instructor's Guide:</b> 97</p>
M5N4	<p>Students will continue to develop their understanding of the meaning of common fractions and compute with them.</p> <p>a. Understand division of whole numbers can be represented as a fraction (<math>a/b = a \div b</math>).</p>	<p><b>Instructor's Guide:</b> 44, 173</p>

M5N5	<p>b. Understand the value of a fraction is not changed when both its numerator and denominator are multiplied or divided by the same number because it is the same as multiplying or dividing by one.</p>	<p><b>Instructor's Guide:</b> 27, 28, 44, 49, 58, 65, 87, 91, 121, 150, 169, 173, 178</p>
	<p>c. Find equivalent fractions and simplify fractions.</p>	<p><b>Instructor's Guide:</b> 27, 28, 47, 49, 58, 65, 81, 87, 91, 150, 159, 178</p>
	<p>d. Model the multiplication and division of common fractions.</p>	<p><b>Instructor's Guide:</b> 97, 122, 159</p>
	<p>e. Explore finding common denominators using concrete, pictorial, and computational models.</p>	<p><b>Instructor's Guide:</b> 47, 144, 155, 160</p>
	<p>f. Use <math>&lt;</math>, <math>&gt;</math>, or <math>=</math> to compare fractions and justify the comparison.</p>	<p><b>Instructor's Guide:</b> 27, 125, 157</p>
	<p>g. Add and subtract common fractions and mixed numbers with unlike denominators.</p>	<p><b>Instructor's Guide:</b> 47, 144, 155, 160</p>
	<p>h. Use fractions (proper and improper) and decimal fractions interchangeably.</p>	<p><b>Instructor's Guide:</b> 27, 28, 44, 58, 87, 88, 91, 178</p>
	<p>i. Estimate products and quotients.</p>	<p><b>Instructor's Guide:</b> 53, 68, 93, 100, 147, 163</p>
	<p>Students will understand the meaning of percentage.</p>	
	<p>a. Model percent on 10 by 10 grids.</p>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p>
<p>b. Apply percentage to circle graphs.</p>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 7.</i>)</p>	

M5M	<p><u>Measurement</u> Students will compute the area of geometric plane figures. They will also understand the concept of volume and compute the volume of simple geometric solids and measure capacity. Students will convert from one unit to another within one system of measurement.</p>	
M5M1	<p>Students will extend their understanding of area of fundamental geometric plane figures.</p> <ol style="list-style-type: none"> <li>Estimate the area of fundamental geometric plane figures.</li> <li>Derive the formula for the area of a parallelogram (e.g., cut the parallelogram apart and rearrange it into a rectangle of the same area).</li> <li>Derive the formula for the area of a triangle (e.g., demonstrate and explain its relationship to the area of a rectangle with the same base and height).</li> <li>Find the areas of triangles and parallelograms using formulae.</li> <li>Estimate the area of a circle through partitioning and tiling and then with formula (let <math>\pi = 3.14</math>) (Discuss square units as they apply to circles.)</li> <li>Find the area of a polygon (regular and irregular) by dividing it into squares, rectangles, and/or triangles and find the sum of the areas of those shapes.</li> </ol>	<p><b>Instructor's Guide:</b> 103</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p><b>Instructor's Guide:</b> 175</p>

M5M3	<p>Students will measure capacity with appropriately chosen units and tools.</p> <ol style="list-style-type: none"> <li>Use milliliters, liters, fluid ounces, cups, pints, quarts, and gallons to measure capacity.</li> <li>Compare one unit to another within a single system of measurement (e.g., 1 quart = 2 pints).</li> </ol>	<p><b>Instructor's Guide:</b> 30, 73, 96, 101, 116</p> <p><b>Instructor's Guide:</b> 2, 32, 38, 73, 80, 81, 96, 101, 106, 107, 116, 137</p>
M5M4	<p>Students will understand and compute the volume of a simple geometric solid.</p> <ol style="list-style-type: none"> <li>Understand a cubic unit (<math>u^3</math>) is represented by a cube in which each edge has the length of 1 unit.</li> <li>Identify the units used in computing volume as cubic centimeters (<math>cm^3</math>), cubic meters (<math>m^3</math>), cubic inches (<math>in^3</math>), cubic feet (<math>ft^3</math>), and cubic yards (<math>yd^3</math>).</li> <li>Derive the formula for finding the volume of a cube and a rectangular prism using manipulatives.</li> <li>Compute the volume of a cube and a rectangular prism using formulae.</li> <li>Estimate the volume of a simple geometric solid.</li> <li>Understand the similarities and differences between volume and capacity.</li> </ol>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i>)</p>
M5G	<p><u>Geometry</u> Students will further develop their understanding of geometric figures.</p>	

M5G1	Students will understand congruence of geometric figures and the correspondence of their vertices, sides, and angles.	<b>Instructor's Guide:</b> 175
M5G2	Students will understand the relationship of the circumference of a circle to its diameter is pi ( $\pi \approx 3.14$ ).	No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 6.</i> )
M5A	<u>Algebra</u> Students will represent and investigate mathematical expressions algebraically by using variables.	
M5A1	Students will represent and interpret the relationships between quantities algebraically.	
	a. Use variables, such as $n$ or $x$ , for unknown quantities in algebraic expressions.	<b>Instructor's Guide:</b> 17, 40, 51, 56, 57, 66, 71, 76, 83, 103, 151
	b. Investigate simple algebraic expressions by substituting numbers for the unknown.	<b>Instructor's Guide:</b> 17, 40, 57, 76, 83, 103
	c. Determine that a formula will be reliable regardless of the type of number (whole numbers or decimal fractions) substituted for the variable.	<b>Instructor's Guide:</b> 83, 103, 127, 141, 175
M5D	<u>Data Analysis</u> Students will gather, organize, and display data and interpret graphs.	
M5D1	Students will analyze graphs.	
	a. Analyze data presented in a graph.	<b>Instructor's Guide:</b> 151, 156, 161, 166, 176
	b. Compare and contrast multiple graphic representations (circle graphs, line graphs, bar graphs, etc.) for a single set of data and discuss the advantages/disadvantages of each.	<b>Instructor's Guide:</b> 151, 156, 161, 166, 176

M5D2	Students will collect, organize, and display data using the most appropriate graph.	<b>Instructor's Guide:</b> 151, 156, 161, 166, 176
M5P	<u>Process Skills</u> Students will apply mathematical concepts and skills in the context of authentic problems and will understand concepts rather than merely follow a sequence of procedures. Students will use the process standards as a way of acquiring and using content knowledge.	
M5P1	Using the appropriate technology, students will solve problems that arise in mathematics and in other contexts.	
	a. Solve non-routine word problems using the strategy of make it simpler as well as all strategies learned in previous grades.	<b>Instructor's Guide:</b> 1-180
	b. Solve single and multi-step routine word problems related to all appropriate fifth grade math standards.	<b>Instructor's Guide:</b> 1-180
	c. Determine the operation(s) needed to solve a problem.	<b>Instructor's Guide:</b> 12, 17, 32, 42, 56, 76, 80, 88, 91, 96, 101, 108, 112, 117, 142, 167
	d. Determine the most efficient way to solve a problem (mentally, paper/pencil, or calculator).	<b>Instructor's Guide:</b> 1-180
M5P2	Students will investigate, develop, and evaluate mathematical arguments.	<b>Instructor's Guide:</b> 1-180
M5P3	Students will use the language of mathematics to express ideas precisely.	<b>Instructor's Guide:</b> 1-180

M5P4	Students understand how mathematical ideas interconnect and build on one another and apply mathematics in other content areas.	<b>Instructor's Guide:</b> 1-180
M5P5	Students will create and use pictures, manipulatives, models, and symbols to organize, record, and communicate mathematical ideas.	<b>Instructor's Guide:</b> 1-180



<p>M6M</p>	<p>e. Multiply and divide fractions and mixed numbers.</p> <p>f. Use fractions, decimals, and percents interchangeably.</p> <p>g. Solve problems involving fractions, decimals, and percents.</p> <p><u>Measurement</u> Students will understand how to determine the volume and surface area of solid figures. They will understand and use the customary and metric systems of measurement to measure quantities efficiently and to represent volume and surface area appropriately.</p>	<p><b>Instructor’s Guide:</b> 20, 31, 91, 96, 99, 103, 106, 121, 125, 129, 160, 174</p> <p><b>Instructor’s Guide:</b> 26, 44, 59, 62, 76, 104, 105, 106, 131, 145, 151, 156</p> <p><b>Instructor’s Guide:</b> 10, 20, 26, 29, 31, 40, 44, 45, 46, 51, 54, 59, 60, 62, 65, 69, 70, 76, 91, 96, 99, 103, 104, 105, 106, 109, 116, 121, 125, 129, 131, 145, 151, 156, 160, 174</p>
<p>M6M1</p>	<p>Students will convert from one unit to another within one system of measurement (customary or metric) by using proportional relationships.</p>	<p><b>Instructor’s Guide:</b> 11, 24, 31, 86, 134, 136, 174</p>
<p>M6M2</p>	<p>Students will use appropriate units of measure for finding length, perimeter, area and volume and will express each quantity using the appropriate unit.</p> <p>a. Measure length to the nearest half, fourth, eighth and sixteenth of an inch.</p> <p>b. Select and use units of appropriate size and type to measure length, perimeter, area and volume.</p> <p>c. Compare and contrast units of measure for perimeter, area, and volume.</p>	<p><b>Instructor’s Guide:</b> 11, 17, 27, 52, 72, 97, 138</p> <p><b>Instructor’s Guide:</b> 4, 19, 85, 87, 88, 90, 97, 98, 107, 108, 115, 126, 142, 143, 144, 155, 176, 180</p> <p><b>Instructor’s Guide:</b> 4, 19, 85, 87, 88, 90, 97, 98, 107, 108, 115, 126, 142, 143, 144, 155, 176, 180</p>

M6M3	<p>Students will determine the volume of fundamental solid figures (right rectangular prisms, cylinders, pyramids and cones).</p> <ol style="list-style-type: none"> <li>Determine the formula for finding the volume of fundamental solid figures.</li> <li>Compute the volumes of fundamental solid figures, using appropriate units of measure.</li> <li>Estimate the volumes of simple geometric solids.</li> <li>Solve application problems involving the volume of fundamental solid figures.</li> </ol>	<p><b>Instructor's Guide:</b> 180</p> <p><b>Instructor's Guide:</b> 180</p> <p><b>Instructor's Guide:</b> 180</p> <p><b>Instructor's Guide:</b> 180</p>
M6M4	<p>Students will determine the surface area of solid figures (right rectangular prisms and cylinders).</p> <ol style="list-style-type: none"> <li>Find the surface area of right rectangular prisms and cylinders using manipulatives and constructing nets.</li> <li>Compute the surface area of right rectangular prisms and cylinders using formulae.</li> <li>Estimate the surface areas of simple geometric solids.</li> <li>Solve application problems involving surface area of right rectangular prisms and cylinders.</li> </ol>	<p><b>Instructor's Guide:</b> 90</p> <p><b>Instructor's Guide:</b> 90</p> <p><b>Instructor's Guide:</b> 90</p> <p><b>Instructor's Guide:</b> 90</p>
M6G	<p><u>Geometry</u> Students will further develop their understanding of plane and solid geometric figures, incorporating the use of appropriate technology and using this knowledge to solve authentic problems.</p>	

M6G1	<p>Students will further develop their understanding of plane figures.</p> <ul style="list-style-type: none"> <li>a. Determine and use lines of symmetry.</li> <li>b. Investigate rotational symmetry, including degree of rotation.</li> <li>c. Use the concepts of ratio, proportion and scale factor to demonstrate the relationships between similar plane figures.</li> <li>d. Interpret and sketch simple scale drawings.</li> <li>e. Solve problems involving scale drawings.</li> </ul>	<p><b>Instructor's Guide:</b> 94</p> <p><b>Instructor's Guide:</b> 52</p> <p><b>Instructor's Guide:</b> 170</p> <p><b>Instructor's Guide:</b> 180</p> <p><b>Instructor's Guide:</b> 180</p>
M6G2	<p>Students will further develop their understanding of solid figures.</p> <ul style="list-style-type: none"> <li>a. Compare and contrast right prisms and pyramids.</li> <li>b. Compare and contrast cylinders and cones.</li> <li>c. Interpret and sketch front, back, top, bottom and side views of solid figures.</li> <li>d. Construct nets for prisms, cylinders, pyramids, and cones.</li> </ul>	<p><b>Instructor's Guide:</b> 101, 170</p> <p><b>Instructor's Guide:</b> 101, 170</p> <p><b>Instructor's Guide:</b> 90, 101</p> <p><b>Instructor's Guide:</b> 90</p>
M6A	<p><u>Algebra</u> Students will investigate relationships between two quantities. They will write and solve proportions and simple one-step equations that result from problem situations.</p>	<p><b>Instructor's Guide:</b> 100, 110, 170, 180</p>
M6A1	<p>Students will understand the concept of ratio and use it to represent quantitative relationships.</p>	<p><b>Instructor's Guide:</b> 100, 110, 170, 180</p>

<p>M6A2</p>	<p>Students will consider relationships between varying quantities.</p> <p>a. Analyze and describe patterns arising from mathematical rules, tables, and graphs.</p> <p>b. Use manipulatives or draw pictures to solve problems involving proportional relationships.</p> <p>c. Use proportions (<math>a/b = c/d</math>) to describe relationships and solve problems, including percent problems.</p> <p>d. Describe proportional relationships mathematically using <math>y = kx</math>, where <math>k</math> is the constant of proportionality.</p> <p>e. Graph proportional relationships in the form <math>y = kx</math> and describe characteristics of the graphs.</p> <p>f. In a proportional relationship expressed as <math>y = kx</math>, solve for one quantity given values of the other two. Given quantities may be whole numbers, decimals, or fractions. Solve problems using the relationship <math>y = kx</math>.</p> <p>g. Use proportional reasoning (<math>a/b = c/d</math> and <math>y = kx</math>) to solve problems.</p>	<p><b>Instructor's Guide:</b> 3, 7, 12, 13, 14, 17, 18, 22, 23, 27, 28, 32, 33, 52, 53, 63, 68, 72, 73, 74, 77, 78, 82, 83, 87, 88, 92, 93, 97, 98, 102, 103, 108, 114, 122, 123, 137, 138, 143, 148, 149, 153, 158, 163, 171, 172, 173, 177, 178</p> <p><b>Instructor's Guide:</b> 100, 110</p> <p><b>Instructor's Guide:</b> 100, 110</p> <p><b>Instructor's Guide:</b> 110</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 7.</i>)</p> <p><b>Instructor's Guide:</b> 110</p> <p><b>Instructor's Guide:</b> 110</p>
<p>M6A3</p>	<p>Students will evaluate algebraic expressions, including those with exponents, and solve simple one-step equations using each of the four basic operations.</p>	<p><b>Instructor's Guide:</b> 16, 18, 27, 28, 37, 38, 41, 55, 56, 64, 88, 98, 146</p>

M6D	<p><u>Data Analysis</u> Students will demonstrate understanding of data analysis by posing questions to be answered by collecting data. They will represent, investigate, and use data to answer those questions. Students will understand experimental and theoretical probability.</p>	
M6D1	<p>Students will pose questions, collect data, represent and analyze the data, and interpret results.</p> <ol style="list-style-type: none"> <li>Formulate questions that can be answered by data. Students should collect data by using samples from a larger population (surveys), or by conducting experiments.</li> <li>Using data, construct frequency distributions, frequency tables, and graphs.</li> <li>Choose appropriate graphs to be consistent with the nature of the data (categorical or numerical). Graphs should include pictographs, histograms, bar graphs, line graphs, circle graphs, and line plots.</li> <li>Use tables and graphs to examine variation that occurs within a group and variation that occurs between groups.</li> <li>Relate the data analysis to the context of the questions posed.</li> </ol>	<p><b>Instructor's Guide:</b> 17, 18, 27, 28, 67, 87, 88, 102, 122, 130, 132, 135, 140, 175</p> <p><b>Instructor's Guide:</b> 17, 18, 27, 28, 67, 87, 88, 122, 132, 133, 135, 140, 175</p> <p><b>Instructor's Guide:</b> 122, 132, 133, 135, 140, 175</p> <p><b>Instructor's Guide:</b> 17, 18, 27, 28, 67, 87, 88, 102, 122, 130, 132, 135, 140, 143, 175</p> <p><b>Instructor's Guide:</b> 17, 18, 27, 28, 67, 87, 88, 102, 122, 130, 132, 135, 140, 143, 175</p>

M6D2	<p>Students will use experimental and simple theoretical probability and understand the nature of sampling. They will also make predictions from investigations.</p> <p>a. Predict the probability of a given event through trials/simulations (experimental probability), and represent the probability as a ratio.</p> <p>b. Determine, and use a ratio to represent, the theoretical probability of a given event.</p> <p>c. Discover that experimental probability approaches theoretical probability when the number of trials is large.</p>	<p><b>Instructor’s Guide:</b> 122, 123, 127, 128, 132, 133</p> <p><b>Instructor’s Guide:</b> 122, 123, 127, 128, 132, 133</p> <p><b>Instructor’s Guide:</b> 122, 123, 127, 128, 132, 133</p>
M6P	<p><u>Process Standards</u> Each topic studied in this course should be developed with careful thought toward helping every student achieve the following process standards.</p>	
M6P1	<p>Students will solve problems (using appropriate technology).</p> <p>a. Build new mathematical knowledge through problem solving.</p> <p>b. Solve problems that arise in mathematics and in other contexts.</p> <p>c. Apply and adapt a variety of appropriate strategies to solve problems.</p> <p>d. Monitor and reflect on the process of mathematical problem solving.</p>	<p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 2, 3, 5, 7, 8, 12, 13, 15, 17, 18, 20, 22, 23, 27, 28, 31, 32, 33, 37, 38, 42, 43, 47, 48, 52, 53, 57, 58, 63, 65, 67, 68, 72, 73, 77, 78, 82, 83, 87, 88, 92, 93, 97, 98, 102, 103, 108, 112, 113, 122, 123, 126, 137, 138, 143, 148, 149, 150, 153, 158, 163, 165, 167, 168, 172, 173, 177, 178</p> <p><b>Instructor’s Guide:</b> 1-180</p>

<p>M6P2</p>	<p>Students will reason and evaluate mathematical arguments.</p> <ul style="list-style-type: none"> <li>a. Recognize reasoning and proof as fundamental aspects of mathematics.</li> <li>b. Make and investigate mathematical conjectures.</li> <li>c. Develop and evaluate mathematical arguments and proofs.</li> <li>d. Select and use various types of reasoning and methods of proof.</li> </ul>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p>
<p>M6P3</p>	<p>Students will communicate mathematically.</p> <ul style="list-style-type: none"> <li>a. Organize and consolidate their mathematical thinking through communication.</li> <li>b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.</li> <li>c. Analyze and evaluate the mathematical thinking and strategies of others.</li> <li>d. Use the language of mathematics to express mathematical ideas precisely.</li> </ul>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p>
<p>M6P4</p>	<p>Students will make connections among mathematical ideas and to other disciplines.</p> <ul style="list-style-type: none"> <li>a. Recognize and use connections among mathematical ideas.</li> </ul>	<p><b>Instructor's Guide:</b> 1-180</p>

<p>M6P5</p>	<p>b. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p> <p>c. Recognize and apply mathematics in contexts outside of mathematics.</p> <p>Students will represent mathematics in multiple ways.</p> <p>a. Create and use representations to organize, record, and communicate mathematical ideas.</p> <p>b. Select, apply, and translate among mathematical representations to solve problems.</p> <p>c. Use representations to model and interpret physical, social, and mathematical phenomena.</p>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 31, 34, 42, 43, 67, 68, 72, 111, 120, 122, 130, 131, 140</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p>
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**FORMAT FOR CORRELATION TO THE GEORGIA PERFORMANCE STANDARDS**

**Subject Area:** Mathematics

**State-Funded Course:** 27.02200 Mathematics / Grade 7

**Textbook Title:** Afterschool Achievers: Math Club

**Publisher:** Great Source Education Group

*The Georgia Performance Standards for grades K-8 Mathematics may be accessed on-line at: <http://www.georgiastandards.org/>.*

<b><u>Standard</u></b> (Cite Number)	<b><u>Standard</u></b> (Cite specific standard)	<b><u>Where Taught</u></b> (If print component, cite page number; if non-print, cite appropriate location.)
M7N  M7N1	<p><u>Numbers and Operations</u> Students will further develop their understanding of the concept of rational numbers and apply them to real world situations.</p> <p>Students will understand the meaning of positive and negative rational numbers and use them in computation.</p> <p>a. Find the absolute value of a number and understand it as the distance from zero on a number line.</p> <p>b. Compare and order rational numbers, including repeating decimals.</p> <p>c. Add, subtract, multiply, and divide positive and negative rational numbers.</p>	<p><b>Instructor's Guide:</b> 3, 51, 65</p> <p><b>Instructor's Guide:</b> 26, 119, 156, 161</p> <p><b>Instructor's Guide:</b> 1, 4, 5, 9, 10, 13, 14, 16, 17, 18, 20, 22, 24, 25, 27, 28, 29, 31, 32, 33, 34, 35, 38, 39, 40, 41, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 61, 63, 64, 65, 66, 67, 69, 70, 71, 72, 74, 75, 76, 78, 80, 81, 86, 88, 90, 91, 92, 93, 95, 96, 97, 98, 99, 100, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 115, 116, 118, 120, 121, 123, 124, 126, 127, 128, 129, 130, 131, 133, 134, 135, 136, 139, 141, 143, 144, 145, 146, 148, 149, 150, 151, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 166, 170, 171, 172, 173, 175, 176, 177, 180</p>

M7G	<p>d. Solve problems using rational numbers</p> <p><u>Geometry</u> Students will further develop and apply their understanding of plane and solid geometric figures through the use of constructions and transformations. Students will explore the properties of similarity and further develop their understanding of 3-dimensional figures.</p>	<p><b>Instructor’s Guide:</b> 1, 4, 5, 9, 10, 13, 14, 16, 17, 18, 20, 22, 24, 25, 27, 28, 29, 31, 32, 33, 34, 35, 38, 39, 40, 41, 44, 45, 46, 47, 48, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 61, 63, 64, 65, 66, 67, 69, 70, 71, 72, 74, 75, 76, 78, 80, 81, 86, 88, 90, 91, 92, 93, 95, 96, 97, 98, 99, 100, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 115, 116, 118, 120, 121, 123, 124, 126, 127, 128, 129, 130, 131, 133, 134, 135, 136, 139, 141, 143, 144, 145, 146, 148, 149, 150, 151, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 166, 170, 171, 172, 173, 175, 176, 177, 180</p>
M7G1	<p>Students will construct plane figures that meet given conditions.</p> <p>a. Perform basic constructions using both compass and straight edge, and appropriate technology. Constructions should include copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.</p> <p>b. Recognize that many constructions are based on the creation of congruent triangles.</p>	<p>No specific lesson addresses this standard. (See <i>Geometry to Go</i>.)</p> <p>No specific lesson addresses this standard. (See <i>Geometry to Go</i>.)</p>
M7G2	<p>Students will demonstrate understanding of transformations.</p> <p>a. Demonstrate understanding of translations, dilations, rotations, reflections, and relate symmetry to appropriate transformations.</p>	<p><b>Instructor’s Guide:</b> 7, 15, 42, 43, 117, 118, 164</p>

<p>M7G3</p>	<p>b. Given a figure in the coordinate plane, determine the coordinates resulting from a translation, dilation, rotation, or reflection.</p> <p>Students will use the properties of similarity and apply these concepts to geometric figures.</p> <p>a. Understand the meaning of similarity, visually compare geometric figures for similarity, and describe similarities by listing corresponding parts.</p> <p>b. Understand the relationships among scale factors, length ratios, and area ratios between similar figures. Use scale factors, length ratios, and area ratios to determine side lengths and areas of similar geometric figures.</p> <p>c. Understand congruence of geometric figures as a special case of similarity: The figures have the same size and shape.</p>	<p><b>Instructor’s Guide:</b> 67, 114</p> <p><b>Instructor’s Guide:</b> 77, 78, 170</p> <p><b>Instructor’s Guide:</b> 77, 78, 170</p> <p><b>Instructor’s Guide:</b> 79, 101, 176</p>
<p>M7G4</p>	<p>Students will further develop their understanding of three-dimensional figures.</p> <p>a. Describe three-dimensional figures formed by translations and rotations of plane figures through space.</p> <p>b. Sketch, model, and describe cross-sections of cones, cylinders, pyramids, and prisms.</p>	<p><b>Instructor’s Guide:</b> 79, 84, 101, 147, 176</p> <p>No specific lesson addresses this standard. (See <i>Geometry to Go</i>.)</p>
<p>M7A</p>	<p><u>Algebra</u> Students will demonstrate an understanding of linear relations and fundamental algebraic concepts.</p>	

M7A1	<p>Students will represent and evaluate quantities using algebraic expressions.</p> <ol style="list-style-type: none"> <li>Translate verbal phrases to algebraic expressions.</li> <li>Simplify and evaluate algebraic expressions, using commutative, associative, and distributive properties as appropriate.</li> <li>Add and subtract linear expressions.</li> </ol>	<p><b>Instructor's Guide:</b> 5, 13, 16, 18, 36, 38, 53, 63, 110, 120, 133, 148</p> <p><b>Instructor's Guide:</b> 5, 16, 17, 41, 49, 56, 63, 64, 67, 72, 73, 74, 81, 83, 88, 110, 112, 114, 146, 150, 155, 158, 163</p> <p><b>Instructor's Guide:</b> 5, 16, 17, 41, 49, 56, 63, 64, 67, 72, 73, 74, 81, 83, 88, 110, 112, 114, 146, 150, 155, 158, 163</p>
M7A2	<p>Students will understand and apply linear equations in one variable.</p> <ol style="list-style-type: none"> <li>Given a problem, define a variable, write an equation, solve the equation, and interpret the solution.</li> <li>Use the addition and multiplication properties of equality to solve one- and two-step linear equations.</li> </ol>	<p><b>Instructor's Guide:</b> 5, 13, 16, 18, 24, 38, 63, 110, 120, 133, 148</p> <p><b>Instructor's Guide:</b> 4, 16, 24, 29, 38, 56, 64, 83, 110, 120, 133, 144, 180</p>
M7A3	<p>Students will understand relationships between two variables.</p> <ol style="list-style-type: none"> <li>Plot points on a coordinate plane</li> <li>Represent, describe, and analyze relations from tables, graphs, and formulas.</li> <li>Describe how change in one variable affects the other variable.</li> <li>Describe patterns in the graphs of proportional relationships, both direct (<math>y = kx</math>) and inverse (<math>y = k/x</math>).</li> </ol>	<p><b>Instructor's Guide:</b> 29, 67, 72, 83, 114</p> <p><b>Instructor's Guide:</b> 13, 18, 29, 63, 67, 68, 72, 73, 83, 148, 155, 158, 163, 168, 172, 173</p> <p><b>Instructor's Guide:</b> 13, 18, 29, 63, 67, 68, 72, 73, 83, 148, 155, 158, 163, 168, 172, 173</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 7.</i>)</p>

M7D	<p><u>Data Analysis</u> Students will demonstrate understanding of data analysis by posing questions, collecting data, analyzing the data using measures of central tendency and variation, and using the data to answer the questions posed. Students will understand the role of probability in sampling.</p>	
M7D1	<p>Students will pose questions, collect data, represent and analyze the data, and interpret results.</p> <ol style="list-style-type: none"> <li>a. Formulate questions and collect data from a census of at least 30 objects and from samples of varying sizes.</li> <li>b. Construct frequency distributions.</li> <li>c. Analyze data using measures of central tendency (mean, median, and mode), including recognition of outliers.</li> <li>d. Analyze data with respect to measures of variation (range, quartiles, interquartile range).</li> <li>e. Compare measures of central tendency and variation from samples to those from a census. Observe that sample statistics are more likely to approximate the population parameters as sample size increases.</li> <li>f. Analyze data using appropriate graphs, including pictographs, histograms, bar graphs, line graphs, circle graphs, and line plots introduced earlier, and using box-and-whisker plots and scatter plots.</li> </ol>	<p><b>Instructor’s Guide:</b> 90, 122, 135, 137, 165</p> <p><b>Instructor’s Guide:</b> 122, 135, 137, 165</p> <p><b>Instructor’s Guide:</b> 75, 83, 90, 91, 107, 108, 123</p> <p><b>Instructor’s Guide:</b> 75, 83, 90, 91, 107, 108, 123</p> <p><b>Instructor’s Guide:</b> 75, 83, 90, 91, 107, 108, 123</p> <p><b>Instructor’s Guide:</b> 75, 82, 83, 88, 90, 102, 103, 122, 135, 137, 140, 165</p>

M7P	<p>g. Analyze and draw conclusions about data, including describing the relationship between two variables.</p> <p><u>Process Standards</u> The following process standards are essential to mastering each of the mathematics content standards. They emphasize critical dimensions of the mathematical proficiency that all students need.</p>	<b>Instructor's Guide:</b> 75, 82, 83, 88, 90, 102, 103, 122, 135, 137, 140, 165
M7P1	<p>Students will solve problems (using appropriate technology).</p> <p>a. Build new mathematical knowledge through problem solving.</p> <p>b. Solve problems that arise in mathematics and in other contexts.</p> <p>c. Apply and adapt a variety of appropriate strategies to solve problems.</p> <p>d. Monitor and reflect on the process of mathematical problem solving.</p>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 2, 5, 7, 8, 12, 13, 18, 20, 22, 27, 28, 30, 32, 33, 35, 38, 42, 43, 48, 50, 52, 53, 57, 58, 62, 63, 65, 68, 73, 78, 83, 88, 92, 93, 97, 98, 108, 110, 113, 115, 117, 118, 120, 127, 128, 133, 143, 145, 147, 148, 157, 158, 163, 167, 168, 170, 173, 177, 178</p> <p><b>Instructor's Guide:</b> 1-180</p>
M7P2	<p>Students will reason and evaluate mathematical arguments.</p> <p>a. Recognize reasoning and proof as fundamental aspects of mathematics.</p> <p>b. Make and investigate mathematical conjectures.</p> <p>c. Develop and evaluate mathematical arguments and proofs</p>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p>

<p>M7P3</p>	<p>d. Select and use various types of reasoning and methods of proof.</p> <p>Students will communicate mathematically.</p> <p>a. Organize and consolidate their mathematical thinking through communication.</p> <p>b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.</p> <p>c. Analyze and evaluate the mathematical thinking and strategies of others.</p> <p>d. Use the language of mathematics to express mathematical ideas precisely.</p>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p>
<p>M7P4</p>	<p>Students will make connections among mathematical ideas and to other disciplines.</p> <p>a. Recognize and use connections among mathematical ideas.</p> <p>b. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p> <p>c. Recognize and apply mathematics in contexts outside of mathematics.</p>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 5, 10, 62, 82, 85, 90, 99, 102, 110, 120, 122, 159, 165</p>
<p>M7P5</p>	<p>Students will represent mathematics in multiple ways.</p> <p>a. Create and use representations to organize, record, and communicate mathematical ideas.</p>	<p><b>Instructor's Guide:</b> 1-180</p>

	<p>b. Select, apply, and translate among mathematical representations to solve problems.</p> <p>c. Use representations to model and interpret physical, social, and mathematical phenomena.</p>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p>
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<p>M8G</p> <p>M8G1</p>	<p>e. Recognize and use the radical symbol to denote the positive square root of a positive number.</p> <p>f. Estimate square roots of positive numbers.</p> <p>g. Simplify, add, subtract, multiply, and divide expressions containing square roots.</p> <p>h. Distinguish between rational and irrational numbers.</p> <p>i. Simplify expressions containing integer exponents.</p> <p>j. Express and use numbers in scientific notation.</p> <p>k. Use appropriate technologies to solve problems involving square roots, exponents, and scientific notation.</p> <p><u>Geometry</u> Students will use and apply geometric properties of plane figures, including congruence and the Pythagorean theorem.</p> <p>Students will understand and apply the properties of parallel and perpendicular lines and understand the meaning of congruence.</p> <p>a. Investigate characteristics of parallel and perpendicular lines both algebraically and geometrically.</p> <p>b. Apply properties of angle pairs formed by parallel lines cut by a transversal.</p>	<p><b>Instructor's Guide:</b> 14, 21, 49, 50, 112, 113, 118, 136, 152, 153, 161</p> <p><b>Instructor's Guide:</b> 50, 113, 152, 153</p> <p><b>Instructor's Guide:</b> 118, 152, 161</p> <p><b>Instructor's Guide:</b> 26, 30, 50, 65, 74, 76, 118, 130, 145, 152, 153, 155, 171, 176</p> <p><b>Instructor's Guide:</b> 66</p> <p><b>Instructor's Guide:</b> 12, 66</p> <p><b>Instructor's Guide:</b> 13, 66, 153</p> <p><b>Instructor's Guide:</b> 87, 88, 98, 101, 105, 134, 148</p> <p>No specific lesson addresses this standard. (See <i>Geometry to Go</i>.)</p>
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M8G2	<p>c. Understand the properties of the ratio of segments of parallel lines cut by one or more transversals.</p> <p>d. Understand the meaning of congruence: that all corresponding angles are congruent and all corresponding sides are congruent.</p> <p>Students will understand and use the Pythagorean theorem.</p> <p>a. Apply properties of right triangles, including the Pythagorean theorem.</p> <p>b. Recognize and interpret the Pythagorean theorem as a statement about areas of squares on the sides of a right triangle.</p>	<p>No specific lesson addresses this standard. (See <i>Geometry to Go</i>.)</p> <p><b>Instructor's Guide:</b> 82, 83, 134, 152</p> <p><b>Instructor's Guide:</b> 21, 50, 112, 113, 152, 153</p> <p>No specific lesson addresses this standard. (See <i>Geometry to Go</i>.)</p>
M8A	<p><u>Algebra</u> Students will use linear algebra to represent, analyze and solve problems. They will use equations, tables, and graphs to investigate linear relations and functions, paying particular attention to slope as a rate of change.</p>	
M8A1	<p>Students will use algebra to represent, analyze, and solve problems.</p> <p>a. Represent a given situation using algebraic expressions or equations in one variable.</p> <p>b. Simplify and evaluate algebraic expressions.</p> <p>c. Solve algebraic equations in one variable, including equations involving absolute values.</p> <p>d. Interpret solutions in problem contexts.</p>	<p><b>Instructor's Guide:</b> 5, 20, 41, 43, 64, 77, 78, 102, 103, 133, 153</p> <p><b>Instructor's Guide:</b> 29, 30, 41, 64, 97, 103, 131, 133, 146, 149, 164</p> <p><b>Instructor's Guide:</b> 16, 18, 56, 86, 112, 133, 140, 144, 153, 164</p> <p><b>Instructor's Guide:</b> 5, 16, 18, 20, 41, 43, 56, 64, 77, 78, 86, 102, 103, 112, 133, 140, 144, 153, 164</p>

M8A2	<p>Students will understand and graph inequalities in one variable.</p> <ul style="list-style-type: none"> <li>a. Represent a given situation using an inequality in one variable.</li> <li>b. Use the properties of inequality to solve inequalities.</li> <li>c. Graph the solution of an inequality on a number line.</li> <li>d. Interpret solutions in problem contexts.</li> </ul>	<p><b>Instructor's Guide:</b> 86, 90, 154</p> <p><b>Instructor's Guide:</b> 86, 90, 154</p> <p>No specific lesson addresses this standard. (See <i>Algebra to Go</i>.)</p> <p><b>Instructor's Guide:</b> 86, 90, 154</p>
M8A3	<p>Students will understand relations and linear functions.</p> <ul style="list-style-type: none"> <li>a. Recognize a relation as a correspondence between varying quantities.</li> <li>b. Recognize a function as a correspondence between inputs and outputs where the output for each input must be unique.</li> <li>c. Distinguish between relations that are functions and those that are not functions.</li> <li>d. Recognize functions in a variety of representations and a variety of contexts.</li> <li>e. Use tables to describe sequences recursively and with a formula in closed form.</li> <li>f. Understand and recognize arithmetic sequences as linear functions with whole-number input values.</li> </ul>	<p><b>Instructor's Guide:</b> 37, 77</p> <p><b>Instructor's Guide:</b> 17, 22, 23, 29, 37, 77, 97, 98, 127, 133, 146, 150, 153</p> <p>No specific lesson addresses this standard. (See <i>Algebra to Go</i>.)</p> <p><b>Instructor's Guide:</b> 17, 22, 23, 29, 37, 77, 97, 98, 127, 133, 146, 150, 153</p> <p><b>Instructor's Guide:</b> 62</p> <p>No specific lesson addresses this standard. (See <i>Algebra to Go</i>.)</p>

M8A4	<p>g. Interpret the constant difference in an arithmetic sequence as the slope of the associated linear function.</p> <p>h. Identify relations and functions as linear or nonlinear.</p> <p>i. Translate among verbal, tabular, graphic, and algebraic representations of functions.</p> <p>Students will graph and analyze graphs of linear equations.</p> <p>a. Interpret slope as a rate of change.</p> <p>b. Determine the meaning of the slope and y-intercept in a given situation.</p> <p>c. Graph equations of the form <math>y = mx + b</math>.</p> <p>d. Graph equations of the form <math>ax + by = c</math>.</p> <p>e. Determine the equation of a line given a graph, numerical information that defines the line, or a context involving a linear relationship.</p> <p>f. Solve problems involving linear relationships.</p>	<p><b>Instructor's Guide:</b> 97</p> <p><b>Instructor's Guide:</b> 17, 22, 23, 29, 37, 97, 98, 127, 133, 146</p> <p><b>Instructor's Guide:</b> 17, 22, 23, 29, 37, 77, 97, 98, 127, 133, 146, 150, 153</p> <p><b>Instructor's Guide:</b> 23, 97, 105</p> <p><b>Instructor's Guide:</b> 23, 97, 105, 164</p> <p><b>Instructor's Guide:</b> 22, 23, 29, 97, 105, 164</p> <p>No specific lesson addresses this standard. (See <i>Algebra to Go</i>.)</p> <p><b>Instructor's Guide:</b> 22, 23, 29, 97, 105, 164</p> <p><b>Instructor's Guide:</b> 22, 23, 29, 97, 105, 164</p>
M8A5	<p>Students will understand systems of linear equations and use them to solve problems.</p> <p>a. Given a problem context, write an appropriate system of linear equations.</p> <p>b. Solve systems of equations graphically and algebraically, using technology as appropriate.</p>	<p><b>Instructor's Guide:</b> 22, 23</p> <p><b>Instructor's Guide:</b> 22, 23</p>

M8D	<p>c. Interpret solutions in problem contexts.</p> <p><u>Data Analysis</u> Students will use and understand set theory and simple counting techniques; determine the theoretical probability of simple events; and make inferences from data, particularly data that can be modeled by linear functions.</p>	<b>Instructor's Guide:</b> 22, 23
M8D1	<p>Students will apply basic concepts of set theory.</p> <p>a. Demonstrate relationships among sets through use of Venn diagrams.</p> <p>b. Determine subsets, complements, intersection, and union of sets.</p> <p>c. Use set notation to denote elements of a set.</p>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 7.</i>)</p> <p>No specific lesson addresses this standard.</p> <p><b>Instructor's Guide:</b> 31</p>
M8D2	<p>Students will determine the number of outcomes related to a given event.</p> <p>a. Use tree diagrams to find the number of outcomes.</p> <p>b. Apply the addition and multiplication principles of counting.</p>	<p><b>Instructor's Guide:</b> 175</p> <p><b>Instructor's Guide:</b> 27, 125</p>
M8D3	<p>Students will use the basic laws of probability.</p> <p>a. Find the probability of simple independent events.</p> <p>b. Find the probability of compound independent events.</p>	<p><b>Instructor's Guide:</b> 125, 128, 142, 143</p> <p><b>Instructor's Guide:</b> 128, 142, 143</p>

M8D4	<p>Students will organize, interpret, and make inferences from statistical data.</p> <ol style="list-style-type: none"> <li>Gather data that can be modeled with a linear function.</li> <li>Estimate and determine a line of best fit from a scatter plot.</li> </ol>	<p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 7.</i>)</p> <p>No specific lesson addresses this standard. (See <i>Afterschool Achievers: Math Club, Grade 7.</i>)</p>
M8P	<p><u>Process Standards</u> The following process standards are essential to mastering each of the mathematics content standards. They emphasize critical dimensions of the mathematical proficiency that all students need.</p>	
M8P1	<p>Students will solve problems (using appropriate technology).</p> <ol style="list-style-type: none"> <li>Build new mathematical knowledge through problem solving.</li> <li>Solve problems that arise in mathematics and in other contexts.</li> <li>Apply and adapt a variety of appropriate strategies to solve problems.</li> <li>Monitor and reflect on the process of mathematical problem solving.</li> </ol>	<p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 7, 8, 12, 13, 18, 23, 28, 32, 33, 35, 40, 42, 43, 48, 50, 57, 58, 62, 63, 67, 68, 72, 73, 77, 78, 88, 92, 93, 102, 103, 112, 113, 122, 123, 128, 132, 133, 138, 143, 145, 148, 152, 153, 155, 157, 158, 162, 163, 168, 170, 173</p> <p><b>Instructor’s Guide:</b> 1-180</p>
M8P2	<p>Students will reason and evaluate mathematical arguments.</p> <ol style="list-style-type: none"> <li>Recognize reasoning and proof as fundamental aspects of mathematics.</li> </ol>	<p><b>Instructor’s Guide:</b> 1-180</p>

<p>M8P3</p>	<p>b. Make and investigate mathematical conjectures.</p> <p>c. Develop and evaluate mathematical arguments and proofs.</p> <p>d. Select and use various types of reasoning and methods of proof.</p> <p>Students will communicate mathematically.</p> <p>a. Organize and consolidate their mathematical thinking through communication.</p> <p>b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.</p> <p>c. Analyze and evaluate the mathematical thinking and strategies of others.</p> <p>d. Use the language of mathematics to express mathematical ideas precisely.</p>	<p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p>
<p>M8P4</p>	<p>Students will make connections among mathematical ideas and to other disciplines.</p> <p>a. Recognize and use connections among mathematical ideas.</p> <p>b. Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</p> <p>c. Recognize and apply mathematics in contexts outside of mathematics.</p>	<p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 1-180</p> <p><b>Instructor’s Guide:</b> 3, 11, 12, 75, 77, 99, 127, 135, 156, 157, 159, 172, 173</p>

<p>M8P5</p>	<p>Students will represent mathematics in multiple ways.</p> <ul style="list-style-type: none"> <li>a. Create and use representations to organize, record, and communicate mathematical ideas.</li> <li>b. Select, apply, and translate among mathematical representations to solve problems.</li> <li>c. Use representations to model and interpret physical, social, and mathematical phenomena.</li> </ul>	<p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p> <p><b>Instructor's Guide:</b> 1-180</p>
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