

AFTERSCHOOL ACHIEVERS:

MATH CLUB

Grades K-8

correlated to

Texas

**Essential Knowledge and Skills
for Mathematics**

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Afterschool Achievers: Math Club
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Texas Essential Knowledge and Skills for Mathematics
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correlated to
Texas Essential Knowledge and Skills for Mathematics
Kindergarten

Texas Essential Knowledge and Skills for Mathematics, Kindergarten	<i>Afterschool Achievers: Math Club Activity (A)</i>
(b) Knowledge and skills.	
(K.1) Number, operation, and quantitative reasoning. The student uses numbers to name quantities. The student is expected to:	
(A) use one-to-one correspondence and language such as more than, same number as, or two less than to describe relative sizes of sets of concrete objects;	A38 More or less than 2 A48 More or less than 3 A58 More or less than 4 A62 One more than given number A68 More or less than 5 A82 Write numeral that is one more A88 More or less than 6 A98 More or less than 7 A103 More or less than 8 A104 One more or less neighbors for 1-5 A108 More or less than 9 A109 One more or one less neighbors 2-5 A112 One more or one less than 10 A114 One more or one less than 3-4 A118 10 is one more than 9 A119 One more or one less than 4-5 A124 One more or one less than 5-6 A128 Describe a number A129 One more or one less than 6-7 A134 One more or one less than 7-8 A139 One more or one less than 8-9 A143 Describe a number (1-20) A158 Describe a number A173 Describe a number

Texas Essential Knowledge and Skills for Mathematics, Kindergarten	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) use sets of concrete objects to represent quantities given in verbal or written form (through 20); and	A2 One-to-one correspondence to 4 A4 Quantities of 3 A5 Quantities of 4 A7 One-to-one correspondence to 6 A9 Quantities of 4 A10 One-to-one correspondence 2-5 A12 Quantities of 2-9 A14 Quantities of 5 A17 Quantities of 1-4 A19 Quantities of 2-3 A22 Match number/numeral (3-6) A24 Quantities of 3-4 A27 Quantities of 3-9 A29 Quantities 4,5 A30 Match number/numeral (4) A32 Match number/numeral (1-9) A34 Quantities of 5 A35 Match number/numeral (5) A37 One-to-one correspondence to 9 A39 Quantities of 6 A44 Quantities of 7 A49 Quantities of 4,5 A54 Quantities of 5,6 A55 Match number/numeral (5) A59 Quantities of 6,7 A64 Quantities of 0, 1, 2 A69 Quantities of 1, 2, 3 A74 Quantities of 2, 3, 4 A77 Objects in a set (1-4) A79 Quantities of 3, 4, 5 A80 Match number/numeral (6) A84 Quantities of 4, 5, 6 A89 Quantities of 5, 6, 7 A94 Quantities of 6, 7, 8 A99 Quantities of 7, 8, 9 A105 Match number/numeral (7) A107 One-to-one correspondence to 9 A130 Match number/numeral (8) A135 Match number/numeral (9) A155 Match number/numeral (9) A172 Match number/numeral (4-10)
(C) use numbers to describe how many objects are in a set (through 20) using verbal and symbolic descriptions.	A32 Objects in a set (1-9) A72 Rote counting (1-11)
(K.2) Number, operation, and quantitative reasoning. The student describes order of events or objects. The student is expected to:	
(A) use language such as before or after to describe relative position in a sequence of events or objects; and	A42 Positional vocabulary A95 Between A125 Between A163 Ordinal position
(B) name the ordinal positions in a sequence such as first, second, third, etc.	A163 Ordinal position

Texas Essential Knowledge and Skills for Mathematics, Kindergarten	<i>Afterschool Achievers: Math Club Activity (A)</i>
(K.3) Number, operation, and quantitative reasoning. The student recognizes that there are quantities less than a whole. The student is expected to:	
(A) share a whole by separating it into two equal parts; and	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(B) explain why a given part is half of the whole.	
(K.4) Number, operation, and quantitative reasoning. The student models addition (joining) and subtraction (separating).	
The student is expected to model and create addition and subtraction problems in real situations with concrete objects.	A60 Combine sets with total of six A67 Sums for ten A85 Sums of seven A110 Sums of eight A127 (+) sentences to ten A142 Simple subtraction A144 Sums of two A149 Sums of three A154 Sums of four A159 Sums of five A160 Subtraction concept A162 Sums up to ten A164 Sums of six A169 Sums of seven A174 Sums of eight A177 (+) (-) to ten A179 Sums to nine
(K.5) Patterns, relationships, and algebraic thinking. The student identifies, extends, and creates patterns.	
The student is expected to identify, extend, and create patterns of sounds, physical movement, and concrete objects.	A50 Repeating patterns A57 Repeating patterns A75 Repeating patterns A97 Simple linear patterns A121 AAB pattern A126 ABC pattern A131 ABB pattern A136 AB pattern A141 AAB pattern A146 Repeating pattern A150 Repeating pattern A151 Complete a pattern A156 Complete a pattern A157 Recognize and continue a pattern A161 Complete a pattern A166 Complete a pattern A171 Complete a pattern A175 Patterns by counting by ten A176 Building patterns

Texas Essential Knowledge and Skills for Mathematics, Kindergarten	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(K.6) Patterns, relationships, and algebraic thinking. The student uses patterns to make predictions. The student is expected to:		
(A) use patterns to predict what comes next, including cause-and-effect relationships; and	A50 A57 A75 A97 A121 A126 A131 A136 A141 A146 A150 A151 A156 A157 A161 A166 A171 A175 A176	Repeating patterns Repeating patterns Repeating patterns Simple linear patterns AAB pattern ABC pattern ABB pattern AB pattern AAB pattern Repeating pattern Repeating pattern Complete a pattern Complete a pattern Recognize and continue a pattern Complete a pattern Complete a pattern Complete a pattern Patterns by counting by ten Building patterns
(B) count by ones to 100.	A2 A4 A7 A9 A12 A14 A17 A19 A22 A24 A27 A29 A30 A32 A34 A39 A44 A49 A54 A59 A117 A152	One-to-one correspondence to 4 One-to-one correspondence to 3 One-to-one correspondence to 6 One-to-one correspondence to 4 One-to-one correspondence to 9 One-to-one correspondence to 5 One-to-one correspondence to 4 One-to-one correspondence to 2 and 3 One-to-one correspondence to 6 One-to-one correspondence to 3 and 4 One-to-one correspondence to 9 One-to-one correspondence to 4 and 5 One-to-one correspondence to 4 One-to-one correspondence to 9 One-to-one correspondence to 5 One-to-one correspondence to 6 One-to-one correspondence to 7 One-to-one correspondence to 4 and 5 One-to-one correspondence to 5 and 6 One-to-one correspondence to 6 and 7 Count by ones to 20 Build numbers to 50
(K.7) Geometry and spatial reasoning. The student describes the relative positions of objects. The student is expected to:		
(A) describe one object in relation to another using informal language such as over, under, above, and below; and	A42 A95 A125	Positional vocabulary Between Between
(B) place an object in a specified position.	A42	Positional vocabulary

Texas Essential Knowledge and Skills for Mathematics, Kindergarten	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(K.8) Geometry and spatial reasoning. The student uses attributes to determine how objects are alike and different. The student is expected to:		
(A) describe and identify an object by its attributes using informal language;	A3 A8 A18 A33 A83 A123 A138 A153 A168	Attributes Attributes Attributes Attributes Identify by attributes Attributes Attributes Attributes Attributes
(B) compare two objects based on their attributes; and	A28 A107 A137 A170	Compare calendar, clock, lamp Identify by attributes Identify by attributes Identify a ball shape (sphere)
(C) sort a variety of objects including two- and three-dimensional geometric figures according to their attributes and describe how the objects are sorted.	A6 A11 A13 A25 A31 A33 A36 A41 A46 A51 A52 A56 A66 A76 A81 A86 A91 A96 A101 A106 A111 A116 A147	Sort and classify Sort and classify Sort and classify Sort by same/different Sort and classify by same Sort by use of object Sort by similarities Sort by similarities Sort by similarities Sort by similarities Sort by differences Sort by similarities Sort by similarities Sort by similarities Sort by similarities Sort by quantity Sort by differences Sort by differences Sort by differences Sort by differences Sort by similarities Sort by differences Sort by differences Sort by differences
(K.9) Geometry and spatial reasoning. The student recognizes attributes of two- and three-dimensional geometric figures. The student is expected to:		
(A) describe and compare the attributes of real-life objects such as balls, boxes, cans, and cones or models of three-dimensional geometric figures;	A63 A78 A87 A113 A120 A145 A148 A170 A178	Same/different for cube, cylinder, sphere Attributes of a cylinder Recognize rectangular prism, cone Same/different among rectangular solid, cylinder and sphere Cylinder shape (can) Identify a cube Describe a solid Identify a ball shape (sphere) Describe a solid

Texas Essential Knowledge and Skills for Mathematics, Kindergarten	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) recognize shapes in real-life three-dimensional geometric figures or models of three-dimensional geometric figures; and	A1 Recognize circles A6 Recognize squares A11 Recognize triangles A16 Recognize circles A20 Identify a circle A21 Identify squares A26 Identify triangles A45 Recognize triangles A70 Recognize rectangles A87 Recognize circles, rhombus A138 Identify rectangle, square, triangle, circle
(C) describe, identify, and compare circles, triangles, rectangles, and squares (a special type of rectangle).	A23 Same/different for triangle, circle, square A61 Distinguish circles from squares A63 Distinguish triangles from circles A73 Same/different for hexagon, triangle, square A133 Describe geometric shapes
(K.10) Measurement. The student directly compares the attributes of length, area, weight/mass, capacity, and/or relative temperature. The student uses comparative language to solve problems and answer questions. The student is expected to:	
(A) compare and order two or three concrete objects according to length (longer/shorter than, or the same);	A3 Compare length A40 Shorter A47 Longer A92 Shorter, shortest
(B) compare the areas of two flat surfaces of two-dimensional figures (covers more, covers less, or covers the same);	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(C) compare two containers according to capacity (holds more, holds less, or holds the same);	A47 Capacity – holds more, less A92 Holds more A115 Capacity A140 Capacity – least A165 Capacity – overflows, overflowing
(D) compare two objects according to weight/mass (heavier than, lighter than, or equal to); and	A43 Measuring tool – balance scale A47 Weight – heavier, lighter A65 Compare weight/heaviest A90 Lightest A92 Heavier A180 Weight – equal
(D) compare situations or objects according to relative temperature (hotter/colder than, or the same as).	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(K.11) Measurement. The student uses time to describe, compare, and order events and situations. The student is expected to:	
(A) compare events according to duration such as more time than or less time than;	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(B) sequence events (up to three); and	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(C) read a calendar using days, weeks, and months.	A28 Similarities and differences between a calendar and a clock

Texas Essential Knowledge and Skills for Mathematics, Kindergarten	<i>Afterschool Achievers: Math Club Activity (A)</i>
(K.12) Probability and statistics. The student constructs and uses graphs of real objects or pictures to answer questions. The student is expected to:	
(A) construct graphs using real objects or pictures in order to answer questions; and	A93 Real graphs
(B) use information from a graph of real objects or pictures in order to answer questions.	A93 Picture graphs
(K.13) Underlying processes and mathematical tools. The student applies Kindergarten mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:	
(A) identify mathematics in everyday situations;	While many activities such as A160 – Exploring subtraction concepts directly identify math in everyday situations, concepts become more memorable when every activity is made relevant by the teacher to everyday situations.
(B) solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	Problem solving strategies are the underlying foundation for all mathematics. Logical thinking should permeate all lessons. All activities should be placed within a problem solving context.
(C) select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem; and	Children have the opportunity to meet this objective in all “Rule Out Two,” “Game Time,” and “Pattern Puzzler” activities.
(D) use tools such as real objects, manipulatives, and technology to solve problems.	Many of the “Rule Out Two” activities require children to use real objects and/or manipulatives to solve problems. See for example: A32 Match sets with numerals to 9 A72 Identify missing number in a sequence A82 Recognize one more/less for numbers up to 10 A112 Find one more/less for numbers up to 10 A117 Sequence numbers up to 20 A127 Recognize and match addition number sentences to sums of 10 A132 Measure length with non-standard units A142 Simple subtraction
(K.14) Underlying processes and mathematical tools. The student communicates about Kindergarten mathematics using informal language. The student is expected to:	
(A) communicate mathematical ideas using objects, words, pictures, numbers, and technology; and	Children have the opportunity to meet this objective in all “Rule Out Two” and “Pattern Puzzler” activities.
(B) relate everyday language to mathematical language and symbols.	The direct instruction discussion from the Get Started section of each activity includes translating informal language into mathematical language and symbols.
(K.15) Underlying processes and mathematical tools. The student uses logical reasoning.	
The student is expected to justify his or her thinking using objects, words, pictures, numbers, and technology.	Children have the opportunity to meet this objective in all “Rule Out Two” activities.

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correlated to
Texas Essential Knowledge and Skills for Mathematics
Grade 1

Texas Essential Knowledge and Skills for Mathematics, Grade 1	<i>Afterschool Achievers: Math Club Activity (A)</i>
(b) Knowledge and skills.	
(1.1) Number, operation, and quantitative reasoning. The student uses whole numbers to describe and compare quantities. The student is expected to:	
(A) compare and order whole numbers up to 99 (less than, greater than, or equal to) using sets of concrete objects and pictorial models;	A7 More, fewer, same number A9 Equal sets A19 One more or one less A27 Ordinal numbers A45 Ordinal numbers A49 Less than A52 Color one more, one less A82 Missing numbers on number chart to 50 A97 Missing numbers on number chart to 50 A105 Order numbers 20-29 A154 One more, one less
(B) create sets of tens and ones using concrete objects to describe, compare, and order whole numbers;	A112 Base-ten blocks used to build 2-digit numbers A123 Base-ten blocks used to build 2-digit numbers A126 Recognize one's place A138 Recognize ones and tens A157 Use place value to compare numbers to 100 A162 Order multiples of ten A165 Read a 3-digit number A168 Recognize 10s and 1s

Texas Essential Knowledge and Skills for Mathematics, Grade 1	<i>Afterschool Achievers: Math Club Activity (A)</i>
(C) identify individual coins by name and value and describe relationships among them; and	A29 Match coin/value A34 Adding one cent A39 Subtracting one cent A64 Count pennies, nickels A65 Count pennies, nickels A73 Value of penny, nickel, dime A75 Coin value A76 Number of coins needed to 20¢ A77 Counting pennies and nickels to 20¢ A78 Count pennies and nickels A79 Recognize combinations of 6¢, 7¢ A96 Coin patterns in a table A102 Count pennies, nickels, dimes to 30¢ A109 Count mixed change up to 8¢ and 9¢ A124 Coin combinations for 9¢ and 10¢ A128 Count mixed coins A139 Coin combinations for 11¢ A149 Coin combinations for 12¢ A151 Coin patterns in a table A152 Count coins to 50¢ A155 Count coins A164 One more/one less cent A169 Two less cents
(D) read and write numbers to 99 to describe sets of concrete objects.	A2 Match numeral/number (1-10) A4 Match numeral/number (1-9) A5 Match numeral/number (1-9) A22 Match numeral/number (ten frame – dominoes) A25 Match numeral/number (1-10) A32 Match numeral/number on dominoes (1-10) A37 Match numeral/number on ten frame and dominoes (11-19) A65 match 6, 7, 8, 9, to ten-frame A67 Count to 30 A68 Teen numbers (11-19) A83 Twenties (20-29) A85 Recognize 6, 7, 8, 9 on ten-frame
(1.2) Number, operation, and quantitative reasoning. The student uses pairs of whole numbers to describe fractional parts of whole objects or sets of objects. The student is expected to:	
(A) separate a whole into two, three, or four equal parts and use appropriate language to describe the parts such as three out of four equal parts; and	A117 Fractions of 1/2, 1/3, 1/4 A173 Recognize 1/4
(B) use appropriate language to describe part of a set such as three out of the eight crayons are red.	A118 Recognize 1/2 of a set
(1.3) Number, operation, and quantitative reasoning. The student recognizes and solves problems in addition and subtraction situations. The student is expected to:	
(A) model and create addition and subtraction problem situations with concrete objects and write corresponding number sentences; and	A10 Solution sentences A14 Strategy – Plus one A17 Different addends to make same sum A28 Sums of doubles A44 One more, one less/sums A70 Word problems (+) A90 Word problems (-)

Texas Essential Knowledge and Skills for Mathematics, Grade 1	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) use concrete and pictorial models to apply basic addition and subtraction facts (up to $9 + 9 = 18$ and $18 - 9 = 9$).	A24 Sums of 3 and 4 A30 Sums of 4 and 5 A50 Sums of 5 and 6 A54 Sums of 2, 3, 4 A59 Sums of 5, 6 A62 Practice sums to 5 A69 Sums of 5, 6 A72 Sums to 7 A74 Sums of 6, 7 A84 Sums of 6, 7 A86 Sums of 5, 6, 7, (patterns) A89 Sums of 7, 8 A91 Sums of 8, 9, 10 A92 Sums to 8 A99 Sums of 7, 8 A104 Sums of 8, 9 A107 Practice sums to 9 A110 Sums to 6 A114 Sums of 8, 9 A119 Sums of 9, 10 A122 Sums and differences to 10 A129 Sums of 9, 10 A130 Identify sums for 7 A134 Sums to 11 A137 Sums to 11 A142 Sums and differences to 12 A144 Sums to 12 A150 Sums to 10 A159 Difference of 2 A166 Order property of addition A167 Sums and differences to 15 A170 Sums of 9 A177 Sums and differences to 18

Texas Essential Knowledge and Skills for Mathematics, Grade 1	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(1.4) Patterns, relationships, and algebraic thinking. The student uses repeating patterns and additive patterns to make predictions.		
The student is expected to identify, describe, and extend concrete and pictorial patterns in order to make predictions and solve problems.	A11 A16 A26 A31 A36 A41 A46 A51 A56 A61 A66 A71 A81 A101 A106 A111 A116 A131 A136 A141 A171	Extend patterns Extend patterns Extend AB linear pattern Extend AAB pattern Extend AABB patterns Extend AAAB pattern Extend ABBB pattern Extend 2 shape pattern Extend ABC pattern Extend AABC pattern Extend ABCC pattern Extend coin pattern/know coin value Repeating pattern on a grid Repeating linear pattern on square grid AB pattern on calendar AB pattern for numbers 1-50 AB pattern for numbers 51-100 AAAAB pattern on a calendar AAAAB pattern AAAAB pattern (counting by 5s) AAB pattern on a calendar
(1.5) Patterns, relationships, and algebraic thinking. The student recognizes patterns in numbers and operations. The student is expected to:		
(A) use patterns to skip count by twos, fives, and tens;	A111 A116 A125 A136 A141 A145 A146 A156 A161 A172 A176	AB pattern related to counting by 2 Skip count by 2s Skip count by 10s Skip count by 5s Skip count by 5s Skip count to 50 by 5s Skip count to 100 by 5s Skip count to 100 by 10s Recognize 2, 5, 10 patterns Skip count by 2, 5, 10 Count by 10s from given number
(B) find patterns in numbers, including odd and even;	A113 A121 A174 A179	Odd and even Odd and even Even numbers Odd numbers
(C) compare and order whole numbers using place value;	A126 A157	Ones place number pattern for numbers 1-50 Use place value to compare numbers to 100
(D) use patterns to develop strategies to solve basic addition and basic subtraction problems; and	A86 A91 A166 A167 A177	Addition facts for sums of 5-7 Addition facts for sums of 8-10 Order property of addition Sums & differences related to addition facts to 15 Sums & differences related to addition facts to 18

Texas Essential Knowledge and Skills for Mathematics, Grade 1	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(E) identify patterns in related addition and subtraction sentences (fact families for sums to 18) such as $2 + 3 = 5$, $3 + 2 = 5$, $5 - 2 = 3$, and $5 - 3 = 2$.	A167 A177	Sums & differences related to addition facts to 15 Sums & differences related to addition facts to 18
(1.6) Geometry and spatial reasoning. The student uses attributes to identify two- and three-dimensional geometric figures. The student compares and contrasts two- and three-dimensional geometric figures or both. The student is expected to:		
(A) describe and identify two-dimensional geometric figures, including circles, triangles, rectangles, and squares (a special type of rectangle);	A3 A8 A12 A13 A18 A23 A48 A53 A58 A60 A80 A100 A153	Draw triangle, circle, rectangle Draw rectangle, square, circle Shapes in real world Attributes (sides) of shapes Attributes (sides) of shapes Attributes (sides, corners) of shapes Attributes (faces) of solids Attributes (faces) of solids Attributes (faces) of solids Recognize rectangle, triangle, square Recognize circle, triangle, square Recognize rectangle, triangle Attributes of square, circle, triangle, rectangle
(B) describe and identify three-dimensional geometric figures, including spheres, rectangular prisms (including cubes), cylinders, and cones;	A63 A87 A120 A132 A140 A158 A160 A180	Attributes of solids Attributes of solids (edge, face) Solids (cube, ball, box) Matching shapes/solids to real world objects Recognize ball, cone, cube, can, box Attributes of cube, ball, can, box Solids that slide Solids that roll
(C) describe and identify two- and three-dimensional geometric figures in order to sort them according to a given attribute using informal and formal language; and	A3 A8 A12 A13 A18 A23 A48 A53 A58 A60 A63 A80 A87 A100 A120 A132 A140 A153 A158 A160 A180	Draw triangle, circle, rectangle Draw rectangle, square, circle Shapes in real world Attributes (sides) of shapes Attributes (sides) of shapes Attributes (sides, corners) of shapes Attributes (faces) of solids Attributes (faces) of solids Attributes (faces) of solids Recognize rectangle, triangle, square Attributes of solids Recognize circle, triangle, square Attributes of solids (edge, face) Recognize rectangle, triangle Solids (cube, ball, box) Matching shapes/solids to real world objects Recognize ball, cone, cube, can, box Attributes of square, circle, triangle, rectangle Attributes of cube, ball, can, box Solids that slide Solids that roll
(D) use concrete models to combine two-dimensional geometric figures to make new geometric figures.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .	

Texas Essential Knowledge and Skills for Mathematics, Grade 1	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(1.7) Measurement. The student directly compares the attributes of length, area, weight/mass, capacity, and temperature. The student uses comparative language to solve problems and answer questions. The student selects and uses nonstandard units to describe length. The student is expected to:		
(A) estimate and measure length using nonstandard units such as paper clips or sides of color tiles;	A38 A133	Nonstandard measurement Estimate in inches
(B) compare and order two or more concrete objects according to length (from longest to shortest);	A42 A115	Locating objects – shorter, longer Longest, shortest
(C) describe the relationship between the size of the unit and the number of units needed to measure the length of an object;	A55 A133	Read a scale Estimate length in inches
(D) compare and order the area of two or more two-dimensional surfaces (from covers the most to covers the least);	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .	
(E) compare and order two or more containers according to capacity (from holds the most to holds the least);	A35 A42 A43	Overflowing, full, half full Relative capacity Relative capacity
(F) compare and order two or more objects according to weight/mass (from heaviest to lightest); and	A15 A33 A38 A55 A95	Weight (heaviest) Weight (heavier) Weight (lighter) Weight (read a scale) Weight (lightest)
(G) compare and order two or more objects according to relative temperature (from hottest to coldest).	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .	
(1.8) Measurement. The student understands that time can be measured. The student uses time to describe and compare situations. The student is expected to:		
(A) order three or more events according to duration; and	A47 A93 A98	Order days of week/months of year Days of week Months in year
(B) read time to the hour and half-hour using analog and digital clocks.	A57 A135 A147 A148 A175	Time to hour Time to hour Time to half-hour Time to hour, half-hour Time to hour
(1.9) Probability and statistics. The student displays data in an organized form. The student is expected to:		
(A) collect and sort data; and	A163	Reading and creating bar graphs
(B) use organized data to construct real object graphs, picture graphs, and bar-type graphs.	A163	Reading and creating bar graphs
(1.10) Probability and statistics. The student uses information from organized data. The student is expected to:		
(A) draw conclusions and answer questions using information organized in real-object graphs, picture graphs, and bar-type graphs; and	A163	Reading and creating bar graphs
(B) identify events as certain or impossible such as drawing a red crayon from a bag of green crayons.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .	

Texas Essential Knowledge and Skills for Mathematics, Grade 1	<i>Afterschool Achievers: Math Club Activity (A)</i>
(1.11) Underlying processes and mathematical tools. The student applies Grade 1 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:	
(A) identify mathematics in everyday situations	While many activities such as A20 – Identify positions <i>over</i> , <i>under</i> , and <i>between</i> directly identify math in everyday situations, concepts become more memorable when every activity is made relevant by the teacher to everyday situations.
(B) solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	Problem solving strategies are the underlying foundation for all mathematics. Logical thinking should permeate all lessons. All activities should be placed within a problem-solving context.
(C) select or develop an appropriate problem-solving plan or strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem; and	Children have the opportunity to meet this objective in all “Rule Out Two,” “Game Time,” and “Pattern Puzzler” activities.
(D) use tools such as real objects, manipulatives, and technology to solve problems.	Children have the opportunity to meet this objective in many “Rule Out Two” and all “Pattern Puzzler” activities.
(1.12) Underlying processes and mathematical tools. The student communicates about Grade 1 mathematics using informal language. The student is expected to:	
(A) explain and record observations using objects, words, pictures, numbers, and technology; and	Children have the opportunity to meet this objective in all “Math Jumble” activities, in many “Pattern Puzzler” activities, and in the following activity: A163 Reading and creating bar graphs
(B) relate informal language to mathematical language and symbols.	The direct instruction discussion from the Get Started section of each activity includes translating informal language into mathematical language and symbols.
(1.13) Underlying processes and mathematical tools. The student uses logical reasoning.	
The student is expected to justify his or her thinking using objects, words, pictures, numbers, and technology.	Children have the opportunity to meet this objective in all “Rule Out Two” activities and in the following activities: A101 Draw repeating linear pattern on a square grid A116 Show an AB pattern on a hundred chart A121 Identify even and odd numbers through 100 A166 Order property of addition

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Texas Essential Knowledge and Skills for Mathematics
Grade 2

Texas Essential Knowledge and Skills for Mathematics, Grade 2	<i>Afterschool Achievers: Math Club Activity (A)</i>
(b) Knowledge and skills.	
(2.1) Number, operation, and quantitative reasoning. The student understands how place value is used to represent whole numbers. The student is expected to:	
(A) use concrete models of hundreds, tens, and ones to represent a given whole number (up to 999) in various ways;	A40 Review place value for 3-digit numbers A122 Write 3-digit numbers in expanded form
(B) use place value to read, write, and describe the value of whole numbers to 999; and	A40 Review place value for 3-digit numbers A60 Identify 2-digit numbers written in expanded form A90 Identify 3-digit numbers written in expanded form A122 Write 3-digit numbers in expanded form A123 Review place value for 3-digit numbers
(C) use place value to compare and order whole numbers to 999 and record the comparisons using numbers and symbols (<, =, >).	A51 Use <, >, and = symbols to make a list of true number sentences A87 Greater than, less than
(2.2) Number, operation, and quantitative reasoning. The student describes how fractions are used to name parts of whole objects or sets of objects. The student is expected to:	
(A) use concrete models to represent and name fractional parts of a whole object (with denominators of 12 or less);	A48 Recognize 1/2, 1/3, and 1/4
(B) use concrete models to represent and name fractional parts of a set of objects (with denominators of 12 or less); and	A57 Review the meaning of half a quantity A80 Identify a fractional part of a set A138 Recognize part of a set or the whole set
(C) use concrete models to determine if a fractional part of a whole is closer to 0, 1/2, or 1.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .

Texas Essential Knowledge and Skills for Mathematics, Grade 2		<i>Afterschool Achievers: Math Club Activity (A)</i>	
(2.3) Number, operation, and quantitative reasoning. The student adds and subtracts whole numbers to solve problems. The student is expected to:			
(A)	recall and apply basic addition and subtraction facts (to 18);	A4 A9 A12 A14 A16 A19 A27 A42 A54 A64 A69 A74 A79 A84 A89 A94 A97 A102 A104 A109 A114 A149 A158 A169	Recognize addition facts for sums of 6 or 7 Recognize addition facts for sums of 7 or 8 Sums of 6, 7, and 8 Recognize addition facts with sums of 9 Subtract a number from itself to get difference of 0 Recognize addition facts for sums of 10 Use (+) and (-) to represent 10 Work with addition & subtraction facts through 20 Use mental math for addition facts greater than 10 Review subtraction facts Use 3 numbers to perform 2 subtractions in a row Add three addends with sums less than 20 Recognize addition facts for sums of 12 Recognize addition facts for sums of 13 Recognize addition facts for sums of 14 Recognize addition facts for sums of 15 Work with doubles and halves Work with addition and subtraction facts Recognize addition facts for sums of 17 Recognize addition facts for sums of 18 Recognize addition facts for sums of 19 Recognize addition facts for sums of 20 Practice subtraction through 20 Recognize addition facts for sums to 21
(B)	model addition and subtraction of two-digit numbers with objects, pictures, words, and numbers;	A146 A166	Find 11 more/less than a given number Find matching sums and given sums on diagonals on the hundred chart
(C)	select addition or subtraction to solve problems using two-digit numbers, whether or not regrouping is necessary;	A55 A65 A95 A117 A145	Identify an addition sentence to solve a word problem Subtract multiples of ten Identify an addition equation to solve a problem (solution sentences) Add one- and two-digit numbers Use addition or subtraction to solve a word problem
(D)	determine the value of a collection of coins up to one dollar; and	A32 A34 A59 A77 A86 A100 A103 A118 A119 A144 A159	Solve money riddles with coins Add pennies and nickels to find the value for 6, 7, 8, 9, and 10 cents Add pennies, nickels, and dimes Recognize coins and compute sums of money Skip count by five to 100 to identify multiples of 5 Use mental math to add coin values Add money amounts to make \$1.00 Find the fewest number of coins to make a given amount Add pennies, nickels, dimes, and quarters Add nickels, dimes, and quarters Find combinations of coins that add up to 100 cents or \$1.00

Texas Essential Knowledge and Skills for Mathematics, Grade 2	<i>Afterschool Achievers: Math Club Activity (A)</i>
(E) describe how the cent symbol, dollar symbol, and the decimal point are used to name the value of a collection of coins.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(2.4) Number, operation, and quantitative reasoning. The student models multiplication and division. The student is expected to:	
(A) model, create, and describe multiplication situations in which equivalent sets of concrete objects are joined; and	A73 Use repeated addition to find sums A110 Find a sum in repeated addition. Identify the correct equation to solve a problem. (solution sentences) A112 Use real-life situations to work with multiplication facts A113 Complete multiplication sentences A120 Use repeated addition to solve word problems A124 Recognize that a repeated addition sentence can be written as a multiplication fact A128 Name multiples of 2 A136 Work with the Order Property for multiplication A139 Recognize that a repeated addition sentence can be written as a multiplication fact A141 Find multiplication patterns on a multiplication table A165 Identify multiplication as a process for repeated addition A179 Recognize that a repeated addition sentence can be written as a multiplication fact
(B) model, create, and describe division situations in which a set of concrete objects is separated into equivalent sets.	A135 Use grouping to show division A170 Use grouping to solve a division problem A178 Divide without remainders
(2.5) Patterns, relationships, and algebraic thinking. The student uses patterns in numbers and operations. The student is expected to:	
(A) find patterns in numbers such as in a 100s chart;	A156 Find 9 more or 9 less than a given number A166 Find matching sums on diagonals on the hundred chart; find missing addends for a given sum of the diagonals on the hundred chart A171 Work with number patterns on a calendar
(B) use patterns in place value to compare and order whole numbers through 999; and	A123 Review place value in three-digit numbers

Texas Essential Knowledge and Skills for Mathematics, Grade 2	<i>Afterschool Achievers: Math Club Activity (A)</i>
(C) use patterns and relationships to develop strategies to remember basic addition and subtraction facts. Determine patterns in related addition and subtraction number sentences (including fact families) such as $8 + 9 = 17$, $9 + 8 = 17$, $17 - 8 = 9$, and $17 - 9 = 8$.	A22 Use mental math to add up to 20 A24 Add 0 or 1 to any number A29 Recognize double addends and find their sums A33 Review addition and subtraction facts for 7, 8, 9, and 10 A39 Recognize double addends for sums greater than 10 A44 Use doubles plus 1 to add two consecutive numbers A99 Recognize addition facts for sums of 16 A134 Recognize subtraction facts for differences greater than 10 A143 Write subtraction sentences in horizontal and vertical format A164 Subtract from a two-digit number (Subtrahend from 10-20)
(2.6) Patterns, relationships, and algebraic thinking. The student uses patterns to describe relationships and make predictions. The student is expected to:	
(A) generate a list of paired numbers based on a real-life situation such as number of tricycles related to number of wheels;	A86 Identify multiples of 5's using nickels A161 Patterns of coins to make an amount
(B) identify patterns in a list of related number pairs based on a real-life situation and extend the list; and	A161 Recognize patterns in an organized list
(C) identify, describe, and extend repeating and additive patterns to make predictions and solve problems.	A6 Recognize and extend a linear pattern A7 Recognize and extend a linear pattern using geometric shapes A21 Recognize and extend a pattern A41 Recognize and extend a pattern A46 Recognize a difference of 2 for a pair of consecutive odd numbers A56 Work with number patterns on a calendar A66 Recognize and extend a pattern of geometric shapes A101 Recognize and extend a pattern of colors A106 Recognize a difference of 3 for a pair of numbers A126 Describe and extend geometric patterns

Texas Essential Knowledge and Skills for Mathematics, Grade 2	<i>Afterschool Achievers: Math Club Activity (A)</i>
(2.7) Geometry and spatial reasoning. The student uses attributes to identify two- and three-dimensional geometric figures. The student compares and contrasts two- and three-dimensional figures or both. The student is expected to:	
(A) describe attributes (the number of vertices, faces, edges, sides) of two- and three-dimensional geometric figures such as circles, polygons, spheres, cones, cylinders, prisms, and pyramids, etc.;	A3 Examine attributes of cylinders and cones A13 Identify attributes of spheres, cylinders, and rectangular prisms A15 Identify 2-dimensional shapes containing straight sides and curves A23 Examine attributes of cubes and rectangular prisms A35 Identify solids by their ability to slide or roll A38 Examine attributes of cubes and rectangular prisms A50 Identify solids by their attributes A52 Identify geometric shapes in real world objects A78 Name plane figures A88 Attributes of cubes, rectangular prisms, and pyramids A98 Study names and attributes of cylinder, cones, and spheres A133 Name faces and bases of geometric solids A163 Review names and attributes of square pyramids, cubes, cones, and rectangular prisms A173 Identify faces and bases of geometric solids A175 Identify a cube, a cylinder, and a pyramid by name
(B) use attributes to describe how 2 two-dimensional figures or 2 three-dimensional geometric figures are alike or different; and	A63 Review attributes of cylinders and cones A125 Recognize attributes of familiar solids
(C) cut two-dimensional geometric figures apart and identify the new geometric figures formed.	A115 Visualize triangles in larger shapes
(2.8) Geometry and spatial reasoning. The student recognizes that a line can be used to represent a set of numbers and its properties.	
The student is expected to use whole numbers to locate and name points on a number line.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(2.9) Measurement. The student directly compares the attributes of length, area, weight/mass, and capacity, and uses comparative language to solve problems and answer questions. The student selects and uses nonstandard units to describe length, area, capacity, and weight/mass. The student recognizes and uses models that approximate standard units (from both SI, also known as metric, and customary systems) of length, weight/mass, capacity, and time. The student is expected to:	
(A) identify concrete models that approximate standard units of length and use them to measure length;	A7 Work with measurements of length A8 Investigate nonstandard units of length A30 Choose the correct linear unit of measure A43 Explore nonstandard units of measure A62 Solve word problems with customary units of measurement *(temperature, division, tons, and elapsed time may need to be reinforced)
(B) select a non-standard unit of measure such as square tiles to determine the area of a two-dimensional surface;	A53 Explore nonstandard units of measure

Texas Essential Knowledge and Skills for Mathematics, Grade 2		<i>Afterschool Achievers: Math Club Activity (A)</i>	
(C)	select a non-standard unit of measure such as a bathroom cup or a jar to determine the capacity of a given container; and	A20 A28 A160	Choose the correct measure of capacity to solve problems Explore nonstandard units of capacity Compare the capacities of different containers
(D)	select a non-standard unit of measure such as beans or marbles to determine the weight/mass of a given object.	A45 A148	Choose an appropriate unit of measure for the weight of an object Identify items that weigh less than, more than, or about one pound
(2.10) Measurement. The student uses standard tools to estimate and measure time and temperature (in degrees Fahrenheit). The student is expected to:			
(A)	read a thermometer to gather data;	A93	Temperature in degrees Fahrenheit
(B)	read and write times shown on analog and digital clocks using five-minute increments; and	A47 A58 A82 A108	Read clock time Tell time to the quarter hour Add a half-hour on a clock Tell time to 15-minute and half-hour intervals
(C)	describe activities that take approximately one second, one minute, and one hour.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .	
(2.11) Probability and statistics. The student organizes data to make it useful for interpreting information. The student is expected to:			
(A)	construct picture graphs and bar-type graphs;	A25	Data on a bar graph
(B)	draw conclusions and answer questions based on picture graphs and bar-type graphs; and	A25	Read data on a bar graph
(C)	use data to describe events as more likely or less likely such as drawing a certain color crayon from a bag of seven red crayons and three green crayons.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .	
(2.12) Underlying processes and mathematical tools. The student applies Grade 2 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:			
(A)	identify the mathematics in everyday situations;	While many activities such as A52 – Identify geometric shapes in real world objects directly identify math in everyday situations, concepts become more memorable when every activity is made relevant by the teacher to everyday situations.	
(B)	solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	Problem solving strategies are the underlying foundation for all mathematics. Logical thinking should permeate all lessons. All activities should be placed within a problem solving context.	
(C)	select or develop an appropriate problem-solving plan or strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting it out in order to solve a problem; and	Children have the opportunity to meet this objective in all “Rule Out Two,” “Game Time,” and “Pattern Puzzler” activities.	

Texas Essential Knowledge and Skills for Mathematics, Grade 2	<i>Afterschool Achievers: Math Club Activity (A)</i>
(D) use tools such as real objects, manipulatives, and technology to solve problems.	Children have the opportunity to meet this objective in many “Rule Out Two” activities and in the following activities: A12 Sums of 6, 7, and 8 A42 Addition/subtraction facts to 20 A62 Solve word problems with customary units of measure A77 Compute sums of money A86 Identify multiples of 5 A178 Divide without remainders
(2.13) Underlying processes and mathematical tools. The student communicates about Grade 2 mathematics using informal language. The student is expected to:	
(A) explain and record observations using objects, words, pictures, numbers, and technology; and	Children have the opportunity to meet this objective in many “Pattern Puzzler” activities, in all “Math Jumble” activities, and in the following activities: A3 Examine attributes of cylinders and cones A18 Recognize odd and even numbers A22 Use mental math to add A23 Examine attributes of cubes and rectangular prisms A28 Explore nonstandard units of capacity A38 Examine attributes of cubes and rectangular prisms A43 Explore nonstandard units of weight A52 Identify geometric shapes in real-world objects A53 Use nonstandard units to find the area of a figure A63 Review attributes of cylinders and cones A75 Identify congruent figures A83 Review customary units of capacity A88 Attributes of cubes, rectangular prisms, and pyramids A98 Attributes of cylinders, cones, and spheres A115 Visualize triangles in larger shapes A133 Faces and bases of solids A153 Line of symmetry
(B) relate informal language to mathematical language and symbols.	The direct instruction discussion from the Get Started section of each activity includes translating informal language into mathematical language and symbols.
(2.14) Underlying processes and mathematical tools. The student uses logical reasoning.	
The student is expected to justify his or her thinking using objects, words, pictures, numbers, and technology.	Children have the opportunity to meet this objective in all “Rule Out Two” activities and in the following activities: A46 Recognize difference of two A61 Sum of two even numbers A76 Recognize difference for pair of consecutive even numbers A96 Sum of two odd numbers A106 Recognize difference for pair of numbers A116 Sum of even and odd numbers A151 Skip counting by 20’s A166 Find missing addends for a given sum

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correlated to
Texas Essential Knowledge and Skills for Mathematics
Grade 3

Texas Essential Knowledge and Skills for Mathematics, Grade 3	<i>Afterschool Achievers: Math Club Activity (A)</i>
(b) Knowledge and skills.	
(3.1) Number, operation, and quantitative reasoning. The student uses place value to communicate about increasingly large whole numbers in verbal and written form, including money. The student is expected to:	
(A) use place value to read, write (in symbols and words), and describe the value of whole numbers through 999,999;	A5 Place value to the hundreds place A48 Standard, word, expanded form A103 Value of a digit A140 Translating words to numerals
(B) use place value to compare and order whole numbers through 9,999; and	A35 Place value to thousands A60 Compare numbers to thousands A127 Increasing value by 10 or 100
(C) determine the value of a collection of coins and bills.	A1 Count mixed change A32 Value of coins A44 Add coins A73 Add coins to sums > \$1.00 A74 Add coins A78 Missing coins to total \$1.00 A117 Write \$ using decimal point and count coins A147 Coin equivalents A168 Fewest bills and coins needed/change from \$5.00
(3.2) Number, operation, and quantitative reasoning. The student uses fraction names and symbols (with denominators of 12 or less) to describe fractional parts of whole objects or sets of objects. The student is expected to:	
(A) construct concrete models of fractions;	A82 Real-life fractions A145 Comparing fractions
(B) compare fractional parts of whole objects or sets of objects in a problem situation using concrete models;	A145 Compare fractions
(C) use fraction names and symbols to describe fractional parts of whole objects or sets of objects; and	A82 Name fractions A83 Fractional part of a set
(D) construct concrete models of equivalent fractions for fractional parts of whole objects.	A82 Real-life fractions

Texas Essential Knowledge and Skills for Mathematics, Grade 3	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(3.3) Number, operation, and quantitative reasoning. The student adds and subtracts to solve meaningful problems involving whole numbers. The student is expected to:		
(A) model addition and subtraction using pictures, words, and numbers; and	A2 A4 A8 A9 A7 A11 A14 A16 A19 A21 A24 A26 A31 A33 A34 A36 A37 A39 A41 A46 A49 A51 A53 A56	Review (+) and (-) facts (+) and (-) sums less than 10 Adding doubles and doubles plus 1 (+) 0 and 1 to any number Subtracting multiples of 10, 100 Adding onto 6, 7, 8, and 9 (+) doubles and doubles plus one (+) 1-digit and 2-digit numbers (+) with 10s (+) (-) with 5s (+) 9's and 10s (+) 10s (+) 9s Fact families (+) facts/sums of 7 and 8 (+) 9's and 10's (+) multiples of 10 to 2-digit numbers (+) 3 or more addends (-) 10s and 9s (+) (-) 9s and 10s (+) (-) 10s (+) (-) 9s, 10s on hundred chart Sums of 10 Fast tens (+) strategy
(B) select addition or subtraction and use the operation to solve problems involving whole numbers through 999.	A66 A68 A85 A94	9's, 10's, on hundred chart (+) (-) multiples of ten (+) (-) Fact families (+) 8s, 9s, 10s
(3.4) Number, operation, and quantitative reasoning. The student recognizes and solves problems in multiplication and division situations. The student is expected to:		
(A) learn and apply multiplication facts through 12 by 12 using concrete models and objects;	A138 A169	Identify multiples of a number Multiples of 10
(B) solve and record multiplication problems (up to two digits times one digit); and	A23 A112 A147 A170 A171 A179	Meaning of (x) Solve multiplication problems Concept of multiplication Use multiplication in problem-solving situation Multiply by tens Multiply to get a desired number
(C) use models to solve division problems and use number sentences to record the solutions.	A112 A119 A120 A124 A129 A175	Relate (x) to (\div) (\div) by 1 picturing (\div) (\div) by 2 (\div) by 3 Drawing a picture

Texas Essential Knowledge and Skills for Mathematics, Grade 3	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(3.5) Number, operation, and quantitative reasoning. The student estimates to determine reasonable results. The student is expected to:		
(A) round whole numbers to the nearest ten or hundred to approximate reasonable results in problem situations; and	A122 A158	Rounding to 1,000 Rounding to 100
(B) use strategies including rounding and compatible numbers to estimate solutions to addition and subtraction problems.	A75 A105	(+) rounding to 10s (-) rounding to 100s
(3.6) Patterns, relationships, and algebraic thinking. The student uses patterns to solve problems. The student is expected to:		
(A) identify and extend whole-number and geometric patterns to make predictions and solve problems;	A6 A36 A58 A61 A67 A71 A76 A116 A121 A156 A176	Recognize patterns of adding onto 5 numbers > 50 Extend patterns Extend patterns patterns on 100 chart extend patterns Patterns on a 100 chart Patterns Extend geometric patterns Extend geometric patterns with triangular and square numbers Extend geometric pattern using triangles Find geometric patterns

Texas Essential Knowledge and Skills for Mathematics, Grade 3	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) identify patterns in multiplication facts using concrete objects, pictorial models, or technology; and	A47 (x) patterns A54 (x) with zero A55 Picturing (x) A59 (x) by 1 A62 picturing (x) A64 (x) by 2 A69 (x) by 3 A77 (x) by 4 A79 (x) by 4 A81 (x) patterns of 2 on 100 Chart A84 Commutative property of (x) A86 (x) by 3 A89 (x) by 5 A91 (x) by 3 A96 Relate multiples of 6 to multiples of 2 and 3 A97 (x) by 3 A98 Multiples of 2 and 5 A99 Counting by fives A101 Multiples of 5 and 10 A102 Multiples of 10 and 100 A104 Multiples of 2 and 3 A106 Multiples of 2 and 4 A109 Multiples of 2 and 4 A114 Multiples of 3 and 5 A118 Multiples of 3 A126 Multiples of 9 and 10 A131 Multiples of 4 and 8 A136 Multiples of 2, 4, and 8 A138 Skip counting to find multiples A139 (x) to reach target number A153 Multiples of 9 A169 Skip counting by 10s A171 (x) by 10s and 100s A173 Mixed (x) / arrays A174 (x) by 7s, 8s A179 (x) to find target number
(C) identify patterns in related multiplication and division sentences (fact families) such as $2 \times 3 = 6$, $3 \times 2 = 6$, $6 \div 2 = 3$, $6 \div 3 = 2$.	A84 Multiplication pairs
(3.7) Patterns, relationships, and algebraic thinking. The student uses lists, tables, and charts to express patterns and relationships. The student is expected to:	
(A) generate a table of paired numbers based on a real-life situation such as insects and legs; and	A30 Inches, feet, and yards A91 Cookies A141 Card games A156 Seating arrangements

Texas Essential Knowledge and Skills for Mathematics, Grade 3	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) identify and describe patterns in a table of related number pairs based on a meaningful problem and extend the table.	A6 Function table A26 Function table A61 Number patterns on a hundred chart A66 Number patterns on a hundred chart A77 Real-life multiples A91 Patterns in a function table A97 Real-life multiples A113 Cups, pints, quarts, and gallons A121 Triangular and square numbers
(3.8) Geometry and spatial reasoning. The student uses formal geometric vocabulary.	
The student is expected to identify, classify, and describe two- and three-dimensional geometric figures by their attributes. The student compares two-dimensional figures, three-dimensional figures, or both by their attributes using formal geometry vocabulary.	A3 Review and name attributes of solid figures A15 Define rectangles and squares A45 Pentagon, octagon, trapezoid A57 Geometric vocabulary A65 Prisms and cubes A93 Polygons A107 Nets for solids A111 Square and hexagon A123 Solids A124 Rectangle, trapezoid, rhombus A142 2-and-3 dimensional shapes A143 3-dimensional solids A176 Characteristics of 2-and 3-dimensional figures
(3.9) Geometry and spatial reasoning. The student recognizes congruence and symmetry. The student is expected to:	
(A) identify congruent two-dimensional figures;	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(B) create two-dimensional figures with lines of symmetry and concrete models and technology; and	A28 Lines of symmetry in letters A108 Lines of symmetry in shapes
(C) identify lines of symmetry in two-dimensional geometric figures.	A28 Lines of symmetry in letters A108 Lines of symmetry in shapes
(3.10) Geometry and spatial reasoning. The student recognizes that a line can be used to represent numbers and fractions and their properties and relationships.	
The student is expected to locate and name points on a number line using whole numbers and fractions, including halves and fourths.	A63 Centimeter ruler
(3.11) Measurement. The student directly compares the attributes of length, area, weight/mass, and capacity and uses comparative language to solve problems and answer questions. The student selects and uses standard units to describe length, area, capacity/volume, and weight/mass. The student is expected to:	
(A) use linear measurement tools to estimate and measure lengths using standard units;	A13 Customary linear measurement A17 Linear measurement conversions A20 Measurement tools A50 Meter/Centimeter benchmarks A63 Metric length reasonableness A80 Measure with centimeter ruler A110 Measure with inch ruler A148 Conversion of customary lengths A155 Conversion of metric lengths

Texas Essential Knowledge and Skills for Mathematics, Grade 3	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) use standard units to find the perimeter of a shape;	A27 Perimeter A100 Perimeter A133 Perimeter A156 Perimeter
(C) use concrete and pictorial models of square units to determine the area of two-dimensional surfaces;	A27 Area A133 Area A161 Area
(D) identify concrete models that approximate standard units of weight/mass and use them to measure weight/mass;	A52 Units of weight
(E) identify concrete models that approximate standard units for capacity and use them to measure capacity; and	A113 Units of liquid measure A160 Relationship between quarts and gallons
(F) use concrete models that approximate cubic units to determine the volume of a given container or other three-dimensional geometric figure.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(3.12) Measurement. The student reads and writes time and measures temperature in degrees Fahrenheit to solve problems. The student is expected to:	
(A) use a thermometer to measure temperature; and	A128 Temperature benchmarks
(B) tell and write time shown on analog and digital clocks.	A38 Elapsed time A72 Elapsed time A88 Minutes before and after the hour A125 A.M. and P.M.
(3.13) Probability and statistics. The student solves problems by collecting, organizing, displaying, and interpreting sets of data. The student is expected to:	
(A) collect, organize, record, and display data in pictographs and bar graphs where each picture or cell might represent more than one piece of data;	A25 Reading a bar graph
(B) interpret information from pictographs and bar graphs; and	A25 Reading a bar graph
(C) use data to describe events as more likely than, less likely than, or equally likely as.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(3.14) Underlying processes and mathematical tools. The student applies Grade 3 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:	
(A) identify the mathematics in everyday situations;	While many activities such as A29 – Adding one to even and odd numbers directly identify math in everyday situations, concepts become more memorable when every activity is made relevant by the teacher to everyday situations.
(B) solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	Problem solving strategies are the underlying foundation for all mathematics. Logical thinking should permeate all lessons. All activities should be placed within a problem solving context.

Texas Essential Knowledge and Skills for Mathematics, Grade 3	<i>Afterschool Achievers: Math Club Activity (A)</i>
(C) select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	Students have the opportunity to meet this objective in all “Rule Out Two,” “Game Time,” and “Pattern Puzzler” activities.
(D) use tools such as real objects, manipulatives, and technology to solve problems.	Students have the opportunity to meet this objective in many “Rule Out Two” activities and in the following activities: A17 Using measurement tools A63 Using a centimeter ruler A113 Using tools of liquid measure
(3.15) Underlying processes and mathematical tools. The student communicates about Grade 3 mathematics using informal language. The student is expected to:	
(A) explain and record observations using objects, words, pictures, numbers, and technology; and	Students have the opportunity to meet this objective in all “Math Jumble” activities, in many “Pattern Puzzler” activities, and in the following activities: A90 Solution sentences A92 Solution sentences A93 Write a riddle
(B) relate informal language to mathematical language and symbols.	The direct instruction discussion from the Get Started section of each activity includes translating informal language into mathematical language and symbols.
(3.16) Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to:	
(A) make generalizations from patterns or sets of examples and nonexamples; and	All “Pattern Puzzler” activities deal with patterns (making generalizations, extending patterns, creating patterns, etc.).
(B) justify why an answer is reasonable and explain the solution process.	Students have the opportunity to meet this objective in all “Rule Out Two” activities and in the following activities: A41 Subtract 10 and 9 from 2-digit numbers A91 Recognize multiples of 3 A121 Explore triangular and square numbers A163 Explore division with remainders A166 Convert between standard units of capacity

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correlated to
Texas Essential Knowledge and Skills for Mathematics
Grade 4

Texas Essential Knowledge and Skills for Mathematics, Grade 4	<i>Afterschool Achievers: Math Club Activity (A)</i>
(b) Knowledge and skills.	
(4.1) Number, operation, and quantitative reasoning. The student uses place value to represent whole numbers and decimals. The student is expected to:	
(A) use place value to read, write, compare, and order whole numbers through 999,999,999; and	A12 Compare and order whole numbers A16 Compare whole numbers A21 Compare whole numbers A26 Compare using $<$, $>$, $=$ A27 Value of a digit to millions A95 Expanded notation A103 Place value to millions
(B) use place value to read, write, compare, and order decimals involving tenths and hundredths, including money, using concrete objects and pictorial models.	A72 Coin combinations A83 Coin combinations less than \$1.00 A128 Determine value of coins $>$ than \$1.00 A112 Place value in decimals A143 Decimal place value A147 Decimal place value A175 Order decimals A178 Decimal riddle
(4.2) Number, operation, and quantitative reasoning. The student describes and compares fractional parts of whole objects or sets of objects. The student is expected to:	
(A) uses concrete objects and pictorial models to generate equivalent fractions;	A113 Name equivalent fractions A144 Equivalent fractions to $\frac{1}{2}$ A150 Equivalent fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$
(B) model fraction quantities greater than one using concrete objects and pictorial models;	A107 Value of proper fractions and mixed numbers A154 Improper fractions as mixed numbers
(C) compare and order fractions using concrete objects and pictorial models; and	A107 Value of proper fractions and mixed numbers A113 Find and name equivalent fractions A144 Recognize fractions equivalent to $\frac{1}{2}$ A150 Recognize equivalent fractions
(D) relate decimals to fractions that name tenths and hundredths using concrete objects and pictorial models.	A133 Relate decimals to fractions A145 Relate decimals to fractions

Texas Essential Knowledge and Skills for Mathematics, Grade 4	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(4.3) Number, operation, and quantitative reasoning. The student adds and subtracts to solve meaningful problems involving whole numbers and decimals. The student is expected to:		
(A) use addition and subtraction to solve problems involving whole numbers; and	A1 A4 A6 A9 A11 A13 A23 A36 A41 A43 A46 A56 A57 A61 A77 A96 A97 A109 A136 A164	Sum of 2 even numbers Sums to 18 Sum of 2 odd numbers Basic subtraction Sum of even and odd is odd Subtract 2-digit numbers Different addends/same sum Add 11 Add 12 Differences Add/subtract 15 Skip count by 100 Properties of addition Add 25 Add on to find difference Find missing addends and subtrahends 3-digit subtraction Adding on to make change for \$1.00 Add/subtract 35 Subtract 3-digit numbers
(B) add and subtract decimals to the hundredths place using concrete objects and pictorial models.	A80 A87 A89 A94 A99 A104 A109 A114 A127 A149 A165	Subtract with \$ Add money/decimals Add coins to 50¢ Add coins to 75¢ Add coins to \$1.00 Add coins to 50¢ Making change to \$1.00 Add to make change to \$5.00 Add up to make correct change Add value of coins and \$1 bills (+) (-) of decimals
(4.4) Number, operation, and quantitative reasoning. The student multiplies and divides to solve meaningful problems involving whole numbers. The student is expected to:		
(A) model factors and products using arrays and area models;	A162	Square numbers
(B) represent multiplication and division situations in picture, word, and number form;	A170	Divide a number by 3 and 4

Texas Essential Knowledge and Skills for Mathematics, Grade 4	<i>Afterschool Achievers: Math Club Activity (A)</i>
(C) recall and apply multiplication facts through 12 x 12;	A2 Products A13 Factors and multiples A19 (x) by 5 A20 Factors A24 (x) by 2 and 4 A26 (x) by 3 and 6 A34 (x) by 4 and 8 A39 Factors A40 Find missing factors A44 Products A48 Multiples of 6 A49 (x) by 7 A54 (x) by 9 A66 (x) multiples of 3 A67 Properties of (x) A68 Factors of the same product A70 Prime and composite numbers A71 (x) multiples of 4 A76 (x) multiples of 6 A78 (x) multiples of 8 to 80 A81 (x) multiples of 8 A86 (x) multiples of 9 A90 Commutative property A101 (x) multiples of 3 and 6 A106 (x) multiples of 4 and 8 A108 (x) vocabulary application A111 Common multiples of 3, 4, and 6 A115 Distributive property of (x) A116 Common multiples of 4, 6, and 8 A118 (x) multiples of 9 up to 99 A119 Recognize even-number products A121 Recognize multiples of 9 also multiples of 3 A126 Common multiples of 6 and 9 A131 Multiples of 3, 6, and 9 A138 Multiples of 12 up to 144 A157 Order of operations A159 (x) by 11 and 12
(D) use multiplication to solve problems (no more than two digits times two digits without technology); and	A124 (x) 1-digit multiplier A129 (x) 1-digit multiplier
(E) use division to solve problems (no more than one-digit divisors and three-digit dividends without technology).	A119 Even number products A125 1-digit divisor A141 (÷) by 4 with/without remainders A142 (÷) quotients with remainders A146 (÷) by 5 with/without remainders A151 (÷) by 6 with/without remainders A156 (÷) by 7 with/without remainders A161 (÷) by 8 with/without remainders A166 (÷) by 9 with/without remainders A170 (÷) by 3 and 4 A171 (÷) by 11 with/without remainders A176 (÷) by 12 with/without remainders

Texas Essential Knowledge and Skills for Mathematics, Grade 4	<i>Afterschool Achievers: Math Club Activity (A)</i>
(4.5) Number, operation, and quantitative reasoning. The student estimates to determine reasonable results. The student is expected to:	
(A) round whole numbers to the nearest ten, hundred, or thousand to approximate reasonable results in problem situations; and	A22 Round to 10 or 100 A25 (-) round to estimate A62 Round to 1,000, 10,000 or 100,000 A102 Round to 10s, 100s A100 Round to estimate products A169 Round to 10s A174 Round to 100s A179 Round to 1000s
(B) use strategies including rounding and compatible numbers to estimate solutions to multiplication and division problems.	A22 Round to 10 or 100 A25 (-) round to estimate A62 Round to 1,000, 10,000 or 100,000 A102 Round to 10s, 100s A100 Round to estimate products A169 Round to 10s A174 Round to 100s A179 Round to 1000s A177 Compatible numbers

Texas Essential Knowledge and Skills for Mathematics, Grade 4	<i>Afterschool Achievers: Math Club Activity (A)</i>
(4.6) Patterns, relationships, and algebraic thinking. The student uses patterns in multiplication and division. The student is expected to:	
(A) use patterns and relationships to develop strategies to remember basic multiplication and division facts (such as the patterns in related multiplication and division number sentences (fact families) such as $9 \times 9 = 81$ and $81 \div 9 = 9$); and	A20 Factors A24 Multiply a number by 2 and 4 A29 Multiply a number by 3 and 6 A34 Multiply a number by 4 and 8 A39 Missing factor for multiples of 2, 4, or 8 A40 Basic quotients A48 Identify multiples of 6 A59 (\div) quotients of 2 or 3 A64 (\div) quotients of 2 or 4 A66 Recognize multiples of 3 A67 Properties of multiplication A69 (\div) quotients of 3 or 6 A7 Analyze and complete a number pattern A71 Recognize multiples of 4 A74 (\div) quotients of 4 or 8 A76 Recognize multiples of 6 A78 Recognize multiples of 8 A79 (\div) quotients = 9 A81 Recognize multiples of 8 A84 (\div) remainders of 1 or 2 A86 Multiples of 9 and their digit sums of 9 A90 Commutative property of multiplication A93 (\div) missing divisors/dividends A101 Recognize relationship between multiples of 3 and 6 A106 Recognize relationship between multiples of 4 and 8 A111 Explore common multiples of 3, 4, and 6 A118 Identify multiples of 9 A121 Recognize that all multiples of 9 are also multiples of 3 A126 Explore common multiples of 6 and 9 A131 Explore relationship between multiples of 3, 6, and 9 A134 (\div) quotients between 10 and 20 A138 Multiples of 12 up to 144 A139 (\div) quotients between 20 and 30 A141 (\div) by 4 with/without remainders A142 (\div) quotients with remainders A146 (\div) by 5 with/without remainders A151 (\div) by 6 with/without remainders A156 (\div) by 7 with/without remainders A161 (\div) by 8 with/without remainders A162 Factors of squares A166 (\div) by 9 with/without remainders A170 (\div) by 3 and 4 A171 (\div) by 11 with/without remainders A172 (\div) finding the missing variable A176 (\div) by 12 with/without remainders
(B) use patterns to multiply by 10 and 100.	A65 (x) by 10, 100, 1,000

Texas Essential Knowledge and Skills for Mathematics, Grade 4		<i>Afterschool Achievers: Math Club Activity (A)</i>	
(4.7) Patterns, relationships, and algebraic thinking. The student uses organizational structures to analyze and describe patterns and relationships.			
The student is expected to describe the relationship between two sets of related data such as ordered pairs in a table.		A140	Sets of numbers in a table
(4.8) Geometry and spatial reasoning. The student identifies and describes attributes of geometric figures using formal geometric language. The student is expected to:			
(A)	identify and describe right, acute, and obtuse angles;	A153 A158	Name angles Attributes of quadrilaterals
(B)	identify and describe models of parallel and intersecting (including perpendicular) lines using concrete objects and pictorial models; and	A85	Intersecting, parallel, perpendicular lines
(C)	use essential attributes to define two- and three-dimensional geometric figures.	A3 A28 A42 A60 A110 A158	2-dimensional shapes 3-dimensional figures Vocabulary Vertices, edges, faces Types of triangles Quadrilaterals
(4.9) Geometry and spatial reasoning. The student connects transformations to congruence and symmetry. The student is expected to:			
(A)	demonstrate translations, reflections, and rotations using concrete models;	A163	Flip, turn or slide
(B)	use translations, reflections, and rotations to verify that two shapes are congruent; and	A163	Flip, turn or slide
(C)	use reflections to verify that a shape has symmetry.	A63	Lines of symmetry
(4.10) Geometry and spatial reasoning. The student recognizes the connection between numbers and their properties and points on a line.			
The student is expected to locate and name points on a number line using whole numbers, fractions such as halves and fourths, and decimals such as tenths.		A12 A102	Compare and order whole numbers Choose number closest to a target number.
(4.11) Measurement. The student applies measurement concepts. The student is expected to estimate and measure to solve problems involving length (including perimeter) and area. The student uses measurement tools to measure capacity/volume and weight/mass. The student is expected to:			
(A)	estimate and use measurement tools to determine length (including perimeter), area, capacity, and weight/mass using standard units SI (metric) and customary;	A5 A30 A33 A35 A52 A55 A88 A10 A137 A137	Customary and metric length Mass and weight Customary capacity Area/find missing length or width Perimeter Customary/Metric capacity Area/square units Perimeter, missing length Area Perimeter

Texas Essential Knowledge and Skills for Mathematics, Grade 4	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) perform simple conversions between different units of length, between different units of capacity, and between different units of weight within the customary measurement system;	A8 Customary and metric conversion A73 Mass and weight conversions
(C) use concrete models of standard cubic units to measure volume;	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(D) estimate volume in cubic units; and	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(E) explain the difference between weight and mass.	A30 Choose best unit of measure A73 Metric and customary units of weight
(4.12) Measurement. The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius). The student is expected to:	
(A) use a thermometer to measure temperature and changes in temperature; and	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(B) use tools such as a clock with gears or a stopwatch to solve problems involving elapsed time.	A105 Time/Elapsed A123 Time/Elapsed A130 Time/Elapsed
(4.13) Probability and statistics. The student solves problems by collecting, organizing, displaying, and interpreting sets of data. The student is expected to:	
(A) use concrete objects or pictures to make generalizations about determining all possible combinations of a given set of data or of objects in a problem situation; and	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(B) interpret bar graphs.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(4.14) Underlying processes and mathematical tools. The student applies Grade 4 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:	
(A) identify the mathematics in everyday situations;	While many activities such as A82 – Name the fractional parts of a given quantity directly identify math in everyday situations, concepts become more memorable when every activity is made relevant by the teacher to everyday situations.
(B) solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	Problem solving strategies are the underlying foundation for all mathematics. Logical thinking should permeate all lessons. All activities should be placed within a problem solving context.
(C) select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	Students have the opportunity to meet this objective in all “Rule Out Two,” “Game Time,” and “Pattern Puzzler” activities.

Texas Essential Knowledge and Skills for Mathematics, Grade 4	<i>Afterschool Achievers: Math Club Activity (A)</i>
(D) use tools such as real objects, manipulatives, and technology to solve problems.	Many of the “Rule Out Two” activities require students to use real objects and/or manipulatives to solve problems. All “Pattern Puzzler” activities A99 Add the value of coins A104 Add up to make change A114 Add up to make change A149 Add the value of coins and bills
(4.15) Underlying processes and mathematical tools. The student communicates about Grade 4 mathematics using informal language. The student is expected to:	
(A) explain and record observations using objects, words, pictures, numbers, and technology; and	Students have the opportunity to meet this objective in all “Math Jumble” activities, in many “Pattern Puzzler” activities, and in the following activities: A3 2-dimensional shapes A12 Compare and order whole numbers A18 Solve riddles about numbers to 50 A28 3 dimensional figures A38 Solve riddles for numbers to 100 A53 Perimeter of a polygon A63 Find lines of symmetry A87 Adding money A88 Area of a rectangle A98 Solve riddles about numbers to 10,000 A102 Estimate number closest to a target number A158 Recognize common quadrilaterals
(B) relate informal language to mathematical language and symbols.	The direct instruction discussion from the Get Started section of each activity includes translating informal language into mathematical language and symbols.
(4.16) Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to:	
(A) make generalizations from patterns or sets of examples and nonexamples; and	Students have the opportunity to meet this objective in all “Pattern Puzzler” activities and in the following activities: A7 Complete number pattern
(B) justify why an answer is reasonable and explain the solution process.	Students have the opportunity to meet this objective in all “Rule Out Two” activities and in the following activities: A67 Recognize properties of multiplication A107 Understand value of proper fractions and mixed numbers A113 Find and name equivalent fractions A117 Practice mental arithmetic A173 Round numbers to the nearest hundred A178 Round decimals to the nearest whole number

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correlated to
Texas Essential Knowledge and Skills for Mathematics
Grade 5

Texas Essential Knowledge and Skills for Mathematics, Grade 5	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(b) Knowledge and skills.		
(5.1) Number, operation, and quantitative reasoning. The student uses place value to represent whole numbers and decimals. The student is expected to:		
(A) use place value to read, write, compare, and order whole numbers through 999,999,999,999; and	A52 A95	Using place value to increase/decrease numbers Expanded notation
(B) use place value to read, write, compare, and order decimals through the thousandths place.	A20	Order decimals
(5.2) Number, operation, and quantitative reasoning. The student uses fractions in problem-solving situations. The student is expected to:		
(A) generate a fraction equivalent to a given fraction such as $\frac{1}{2}$ and $\frac{3}{6}$ or $\frac{4}{12}$ and $\frac{1}{3}$;	A47 A65 A81	Equivalent fractions Equivalent fractions Equivalent fractions using feet/inches
(B) generate a mixed number equivalent to a given improper fraction or generate an improper fraction equivalent to a given mixed number;	A44	Improper fractions as mixed numbers
(C) compare two fractional quantities in problem-solving situations using a variety of methods, including common denominators; and	A173	Compare improper fraction to mixed number
(D) use models to relate decimals to fractions that name tenths, hundredths, and thousandths.	A27 A28 A58 A87 A88 A91 A145 A178	Fraction/Decimal equivalents Fraction/Decimal/Percent equivalents Relate fractions to decimals and percents Fraction – decimal relationship Metric length in fraction/decimal form Metric length in fraction/decimal form Relate fractions to decimals Relate fractions to decimals

Texas Essential Knowledge and Skills for Mathematics, Grade 5	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(5.3) Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, and divides to solve meaningful problems. The student is expected to:		
(A) use addition and subtraction to solve problems involving whole numbers and decimals;	A4 A9 A13 A14 A84 A94 A104 A109 A119 A134 A152 A154	Sums to 18 Subtraction equations Multi-digit subtraction (+) (-) to get even numbers Add value of coins Add value of coins Subtract decimals Change for \$1.00 (+) (-) to get even numbers (+) express \$ totals with decimals Write decimals (+) coins
(B) use multiplication to solve problems involving whole numbers (no more than three digits times two digits without technology);	A18 A19 A24 A29 A39 A46 A48 A50 A90 A97 A114 A117 A124 A132 A157 A162 A165	(x) 6s (x) 7s (x) 9s (x) 9s (x) 4 and 8 (x) by 10, 100, 1000 (x) 9s (x) 1-digit by 2-and-3 Digit (x) commutative property (x) by 0.1, 10, 100 (x) patterns of 11 and 12 (+) (x) multi-step problems (x) 1-and 2-digit numbers (x) cost of multiples (x) comparing expressions (x) (+) practice order of operation (x) multiples of 10
(C) use division to solve problems involving whole numbers (no more than two-digit divisors and three-digit dividends without technology);	A34 A40 A62 A64 A69 A74 A75 A79 A82	(\div) whole numbers (\div) interpret variables (\div) facts (\div) 2-digit by 1-digit with remainders (\div) 2-digit by 1-digit with remainders (\div) 2-digit by 1-digit with quotients of 10, 11, 12 (\div) 3-digit by 1-digit (\div) 2-digit by 1-digit with quotients between 20 and 30 (\div) remainders
(D) identify common factors of a set of whole numbers; and	A31 A36	Factors from least to greatest Factors from least to greatest
(E) model situations using addition and/or subtraction involving fractions with like denominators using concrete objects, pictures, words, and numbers.	A47 A89 A133 A169	Add fractions with like denominators Add fractions with like denominators Add fractions with like denominators Add fractions with like denominators

Texas Essential Knowledge and Skills for Mathematics, Grade 5	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(5.4) Number, operation, and quantitative reasoning. The student estimates to determine reasonable results.		
The student is expected to use strategies including rounding and compatible numbers to estimate solutions to addition, subtraction, multiplication, and division problems.	A25 A33 A53 A68 A72 A76 A77 A78 A93 A100 A118 A147 A148 A163	(+) 3-digit estimation (+) 4-digit estimation (x) 2-digit estimation (x) multi-digit estimation Round to 10, 100, 1000 (÷) 3-digit by 1-digit estimation Round decimals (-) multi-digit (÷) multi-digit (x) 2-and-3-digit with ranges (-) estimation (x) (-) estimation Rounding \$ Rounding to 100, 1000
(5.5) Patterns, relationships, and algebraic thinking. The student makes generalizations based on observed patterns and relationships. The student is expected to:		
(A) describe the relationship between sets of data in graphic organizers such as lists, tables, charts, and diagrams; and	A1 A51 A56 A61 A76 A86 A98 A101 A111 A126 A149	Patterns in a table Patterns in a table Patterns in a table Writing equations based on ratio from a table Write an equation for a generalized rule from patterns in a table Write ratios from a table Patterns on a calendar Ratios of cups, quarts, gallons from a table Ratios in tables Look for a pattern in a table Find patterns
(B) identify prime and composite numbers using concrete objects, pictorial models, and patterns in factor pairs.	A41 A67 A70 A120 A168	Identify prime numbers Recognize prime numbers Recognize prime and composite numbers Recognize prime and composite numbers Prime numbers
(5.6) Patterns, relationships, and algebraic thinking. The student describes relationships mathematically.		
The student is expected to select from and use diagrams and equations such as $y = 5 + 3$ to represent meaningful problem situations.	A3 A23 A42 A43 A63 A142 A177	Perimeter of a triangle Perimeter of square Word problems Perimeter of hexagon Perimeter of octagon Solution sentences Solution sentences

Texas Essential Knowledge and Skills for Mathematics, Grade 5	<i>Afterschool Achievers: Math Club Activity (A)</i>
(5.7) Geometry and spatial reasoning. The student generates geometric definitions using critical attributes.	
The student is expected to identify essential attributes including parallel, perpendicular, and congruent parts of two- and three-dimensional geometric figures.	A10 Attributes of rectangular prisms and cubes A22 Geometric vocabulary A35 Classify triangles A60 Faces, edges, vertices of prisms A85 Intersecting parallel or perpendicular lines A102 Drawing 2-dimensional figures A110 Angles in triangles A115 Quadrilateral attributes A123 Angles A140 Identify triangles by side and angle A153 Attributes of quadrilaterals
(5.8) Geometry and spatial reasoning. The student models transformations. The student is expected to:	
(A) sketch the results of translations, rotations, and reflections on a Quadrant I coordinate grid; and	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(B) identify the transformation that generates one figure from the other when given two congruent figures on a Quadrant I coordinate grid.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(5.9) Geometry and spatial reasoning. The student recognizes the connection between ordered pairs of numbers and locations of points on a plane.	
The student is expected to locate and name points on a coordinate grid using ordered pairs of whole numbers.	A135 Coordinate grid
(5.10) Measurement. The student applies measurement concepts involving length (including perimeter), area, capacity/volume, and weight/mass to solve problems. The student is expected to:	
(A) perform simple conversions within the same measurement system (SI (metric) or customary);	A2 Measurement equivalents/tools A8 Measurement in fraction form A32 Unit Equivalents A80 Conversions A107 Conversions A116 Conversions A137 Fractional parts of measurement units A170 Conversions – cm to m
(B) connect models for perimeter, area, and volume with their respective formulas; and	A23 Perimeter of square A3 Perimeter of a triangle A43 Perimeter of hexagon A63 Perimeter of octagon A83 Perimeter of rectangle A103 Area A127 Relate length, perimeter and area A127 Relate length, perimeter and area A141 Perimeter A175 Area

Texas Essential Knowledge and Skills for Mathematics, Grade 5	<i>Afterschool Achievers: Math Club Activity (A)</i>
(C) select and use appropriate units and formulas to measure length, perimeter, area, and volume.	A3 Perimeter of a triangle A5 Reasonable linear measurement A23 Perimeter of square A43 Perimeter of hexagon A63 Perimeter of octagon A83 Perimeter of rectangle A88 Length in fraction/decimal form A127 Relate length, perimeter and area A128 Identify angles in polygons A138 Attributes of quadrilaterals A141 Perimeter A103 Area A127 Relate length, perimeter and area A175 Area
(5.11) Measurement. The student applies measurement concepts. The student measures time and temperature (in degrees Fahrenheit and Celsius). The student is expected to:	
(A) solve problems involving changes in temperature; and	A55 Problem solving with temperature
(B) solve problems involving elapsed time.	A105 Elapsed time A108 Elapsed time A130 Elapsed time A131 Reading a time table
(5.12) Probability and statistics. The student describes and predicts the results of a probability experiment. The student is expected to:	
(A) use fractions to describe the results of an experiment;	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(B) use experimental results to make predictions; and	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(C) list all possible outcomes of a probability experiment such as tossing a coin.	This objective falls outside the scope of <i>Afterschool Achievers: Math Club</i> .
(5.13) Probability and statistics. The student solves problems by collecting, organizing, displaying, and interpreting sets of data. The student is expected to:	
(A) use tables of related number pairs to make line graphs;	A151 Graph pairs on coordinate grid A156 Line graph on coordinate grid A176 Line graph on coordinate grid
(B) describe characteristics of data presented in tables and graphs including median, mode, and range; and	A161 Construct pictographs
(C) graph a given set of data using an appropriate graphical representation such as a picture or line graph.	A151 Graph pairs on coordinate grid A156 Line graph on coordinate grid A161 Construct pictographs A176 Line graph on coordinate grid

Texas Essential Knowledge and Skills for Mathematics, Grade 5	<i>Afterschool Achievers: Math Club Activity (A)</i>
(5.14) Underlying processes and mathematical tools. The student applies Grade 5 mathematics to solve problems connected to everyday experiences and activities in and outside of school. The student is expected to:	
(A) identify the mathematics in everyday situations;	While many activities such as A2 – Measurement terms and tools directly identify math in everyday situations, concepts become more memorable when every activity is made relevant by the teacher to everyday situations.
(B) solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	Problem solving strategies are the underlying foundation for all mathematics. Logical thinking should permeate all lessons. All activities should be placed within a problem solving context.
(C) select or develop an appropriate problem-solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	Students have the opportunity to meet this objective in all “Rule Out Two,” “Game Time,” and “Pattern Puzzler” activities, and in the following activities: A57 Finding the value of a variable A112 Problem solving with money
(D) use tools such as real objects, manipulatives, and technology to solve problems.	Students have the opportunity to meet this objective in many “Pattern Puzzler” activities and in the following activities: A143 Measure fractions with ruler A146 Create pentominos patterns
(5.15) Underlying processes and mathematical tools. The student communicates about Grade 5 mathematics using informal language. The student is expected to:	
(A) explain and record observations using objects, words, pictures, numbers, and technology; and	Students have the opportunity to meet this objective in all “Math Jumble” activities, in many “Pattern Puzzler” activities, and in the following activities: A6 Discover divisibility rule of 3 A15 Discover divisibility rule of 2 A16 Discover divisibility rule of 5 A21 Discover divisibility rule of 9 A113 Calculate change for \$5 A131 Make decisions based on a time chart A161 Making pictographs
(B) relate informal language to mathematical language and symbols.	The direct instruction discussion from the Get Started section of each activity includes translating informal language into mathematical language and symbols.
(5.16) Underlying processes and mathematical tools. The student uses logical reasoning. The student is expected to:	
(A) make generalizations from patterns or sets of examples and nonexamples; and	All “Pattern Puzzler” activities deal with patterns (making generalizations, extending patterns, creating patterns, etc.).
(B) justify why an answer is reasonable and explain the solution process.	Students have the opportunity to meet this objective in all “Rule Out Two” activities and in the following activities: A158 Reasonable measurement units A172 Reasonable use of decimal value

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Texas Essential Knowledge and Skills for Mathematics
Grade 6

Texas Essential Knowledge and Skills for Mathematics, Grade 6	<i>Afterschool Achievers: Math Club Activity (A)</i>
(b) Knowledge and skills.	
(6.1) Number, operation, and quantitative reasoning. The student represents and uses rational numbers in a variety of equivalent forms. The student is expected to:	
(A) compare and order non-negative rational numbers;	A25 Compare fractions. A34 Compare numbers using a variety of attributes. A46 Order fractions from least to greatest. A51 Order whole numbers from least to greatest. A116 Order fractions. A166 Order fractions and whole numbers. A121 Compare whole numbers. A156 Compare decimals, fractions, whole numbers.
(B) generate equivalent forms of rational numbers including whole numbers, fractions, and decimals;	A9 Name equivalent fractions. A26 Review equivalent fractions and decimals. A30 Find equivalent fractions. A44 Review equivalent benchmark fractions and decimals. A59 Write equivalent forms of fractions, decimals, and percents. A76 Write equivalent forms of decimals, fractions, and percents. A151 Write the equivalent forms of decimals, fractions, and percents.
(C) use integers to represent real-life situations;	A2 Add whole numbers. A7 Multiply whole numbers. A20 Compute with whole numbers and fractions. A22 Add whole numbers. A32 Multiply whole numbers. A33 Multiply whole numbers. A37 Compute with whole numbers. A38 Add and multiply whole numbers. A47 Add whole numbers. A48 Add whole numbers. A57 Compute with whole numbers. A58 Compute with whole numbers. A81 Add integers. A88 Multiply whole numbers. A91 Compute with whole numbers and decimals. A92 Compute with whole numbers. A93 Compute with whole numbers. A129 Multiply whole numbers by unit fractions. A139 Add integers. A164 Add integers. A165 Multiply whole numbers.

Texas Essential Knowledge and Skills for Mathematics, Grade 6	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(D) write prime factorizations using exponents;	A1 A153	Multiply prime numbers, use exponents, and find prime factors. Relate number of factors to type of number (prime, square, composite).
(E) identify factors of a positive integer, common factors, and the greatest common factor of a set of positive integers; and	A1 A35 A47 A48 A49 A62 A63 A73 A78 A83 A107 A153	Find prime factors. Find greatest common factor. Find factors. Find factors. Find factors. Factor a number into prime factors. Factor a number into prime factors. Use greatest common factor. Study factors. Study factors. Use factors. Relate number of factors to type of number (prime, square, composite).
(F) identify multiples of a positive integer and common multiples and the least common multiple of a set of positive integers.	A14 A36 A78 A83 A138 A149	Identify patterns in multiples of 6. Find least common multiple. Relationships among multiples of 4. Study multiples. Relationships among multiples of 3 and 7. Look for number patterns.
(6.2) Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies and divides to solve problems and justify solutions The student is expected to:		
(A) model addition and subtraction situations involving fractions with objects, pictures, words, and numbers;	A10 A20 A46 A54 A102 A103 A116 A134 A136	Add fractions; write sums in simplest form. Compute with whole numbers and fractions. Add fractions with denominators of two, three, four, and six. Add fractions with common denominators. Compute with fractions. Compute with fractions. Add and subtract fractions and mixed numbers. Determine fractional parts of a foot or yard. Find fractions of measures.
(B) use addition and subtraction to solve problems involving fractions and decimals;	A10 A20 A46 A54 A102 A103 A116 A134	Add fractions; write sums in simplest form. Compute with whole numbers and fractions. Add fractions with denominators of two, three, four, and six. Add fractions with common denominators. Compute with fractions. Compute with fractions. Add and subtract fractions and mixed numbers. Determine fractional parts of a foot or yard.

Texas Essential Knowledge and Skills for Mathematics, Grade 6	<i>Afterschool Achievers: Math Club Activity (A)</i>
(C) use multiplication and division of whole numbers to solve problems including situations involving equivalent ratios and rates;	A7 Multiply whole numbers. A20 Compute with whole numbers and fractions. A32 Multiply whole numbers. A33 Multiply whole numbers. A37 Compute with whole numbers. A38 Add and multiply whole numbers. A57 Compute with whole numbers. A58 Compute with whole numbers. A88 Multiply whole numbers. A91 Compute with whole numbers and decimals. A92 Compute with whole numbers. A93 Compute with whole numbers. A100 Solve proportions. A100 Analyze errors in equivalent ratios. A121 Multiply fractions and whole numbers. A129 Multiply whole numbers by unit fractions. A142 Use ratios. A165 Multiply whole numbers. A172 Multiply whole numbers. A173 Multiply whole numbers.
(D) estimate and round to approximate reasonable results and to solve problems where exact answers are not required; and	A5 Estimate and use logical reasoning to select the correct product from among four choices. A45 Round decimal numbers. A71 Round numbers to the nearest tenth, hundredth, or thousandth. A130 Compute with estimates. A145 Estimate percent of a number. A159 Estimate sums in multi-digit addition problems. A165 Estimate and use logical reasoning to check products or answer choices.
(E) use order of operations to simplify whole number expressions (without exponents) in problem solving situations.	A41 Evaluate expressions. A50 Use order of operations. A64 Evaluate algebraic expressions. A146 Evaluate expressions. A161 Follow order of operations. A166 Use order of operations. A169 Follow order of operations.
(6.3) Patterns, relationships, and algebraic thinking. The student solves problems involving direct proportional relationships. The student is expected to:	
(A) use ratios to describe proportional situations;	A24 Understand relationships among gallons, cups, pints, and quarts. A100 Solve proportions. A100 Analyze errors in equivalent ratios. A110 Solve proportions in context. A110 Analyze errors in solving proportions. A124 Understand ounces as fractional parts of pounds. A134 Determine fractional parts of a foot or yard. A136 Find fractions of measures. A142 Use ratios.

Texas Essential Knowledge and Skills for Mathematics, Grade 6	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) represent ratios and percents with concrete models, fractions, and decimals; and	A24 Understand relationships among gallons, cups, pints, and quarts. A100 Solve proportions. A100 Analyze errors in equivalent ratios. A124 Understand ounces as fractional parts of pounds. A134 Determine fractional parts of a foot or yard. A136 Find fractions of measures. A142 Use ratios.
(C) use ratios to make predictions in proportional situations.	A100 Solve proportions. A100 Analyze errors in equivalent ratios. A110 Solve proportions in context. A110 Analyze errors in solving proportions. A142 Use ratios.
(6.4) Patterns, relationships, and algebraic thinking. The student uses letters as variables in mathematical expressions to describe how one quantity changes when a related quantity changes. The student is expected to:	
(A) use tables and symbols to represent and describe proportional and other relationships such as those involving conversions, arithmetic sequences (with a constant rate of change), perimeter and area; and	A4 Determine side-length of a rectangle when given one side-length and the perimeter. A18 Use Look for a Pattern, Read and Make a Table, and Write an Equation problem-solving strategies. A19 Determine side-length of a quadrilateral when given the perimeter. A28 Write a function to describe the relationship between the number of sides and the number of diagonals in a polygon. A102 Use the Make a Table, Draw a Diagram, and Look for a Pattern problem-solving strategies. A103 Use the Make a Table, Draw a Diagram, and Look for a Pattern problem-solving strategies. A107 Compare area and perimeter. A108 Compare area and perimeter. A126 Relate side length, perimeter, and area of polygons. A144 Determine side-length of a rectangle when given one side-length and the area. A176 Relate side length, perimeter, and area of plane figures. A180 Find volume of an irregular figure.
(B) use tables of data to generate formulas representing relationships involving perimeter, area, volume of a rectangular prism, etc.	A4 Determine side-length of a rectangle when given one side-length and the perimeter. A19 Determine side-length of a quadrilateral when given the perimeter. A24 Understand relationships among gallons, cups, pints, and quarts. A107 Compare area and perimeter. A108 Compare area and perimeter. A126 Relate side length, perimeter, and area of polygons. A144 Determine side-length of a rectangle when given one side-length and the area. A176 Relate side length, perimeter, and area of plane figures. A180 Find volume of an irregular figure.

Texas Essential Knowledge and Skills for Mathematics, Grade 6	<i>Afterschool Achievers: Math Club Activity (A)</i>
(6.5) Patterns, relationships, and algebraic thinking. The student uses letters to represent an unknown in an equation.	
The student is expected to formulate equations from problem situations described by linear relationships.	A13 Use the Look for a Pattern and Write an Equation problem-solving strategies. A13 Write an equation to describe a generalization. A16 Use variables. A18 Use Look for a Pattern, Read and Make a Table, and Write an Equation problem-solving strategies. A18 Write an equation to describe a generalization. A28 Use the Make a List, Write an Equation, and Look for a Pattern problem-solving strategies. A56 Solve one- and two-step equations. A68 Use the Look for a Pattern and the Write an Equation problem-solving strategies. A88 Write and use algebraic equations. A98 Write an equation to describe a mathematical relationship.
(6.6) Geometry and spatial reasoning. The student uses geometric vocabulary to describe angles, polygons, and circles. The student is expected to:	
(A) use angle measurements to classify angles as acute, obtuse, or right;	A147 Measure angles. A179 Identify acute, obtuse, and right angles in polygons.
(B) identify relationships involving angles in triangles and quadrilaterals; and	A72 Use congruent angles. A85 Compare area of rectangles and parallelograms. A147 Relate angle measure and angle sums in polygons. A148 Study relationships among angles in polygons. A179 Identify acute, obtuse, and right angles in polygons.
(C) describe the relationship between radius, diameter, and circumference of a circle.	A142 Relate circumference and diameter. A143 Relate circumference and diameter. A155 Find circumference.
(6.7) Geometry and spatial reasoning. The student uses coordinate geometry to identify location in two dimensions.	
The student is expected to locate and name points on a coordinate plane using ordered pairs of non-negative rational numbers.	A114 Locate points on a coordinate plane.
(6.8) Measurement. The student solves application problems involving estimation and measurement of length, area, time, temperature, volume, weight, and angles. The student is expected to:	
(A) estimate measurements (including circumference) and evaluate reasonableness of results;	A96 Use estimation to determine the reasonableness of an answer.

Texas Essential Knowledge and Skills for Mathematics, Grade 6	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) select and use appropriate units, tools, or formulas to measure and to solve problems involving length (including perimeter), area, time, temperature, capacity, and weight;	A4 Determine side-length of a rectangle when given one side-length and the perimeter. A19 Determine side-length of a quadrilateral when given the perimeter. A31 Solve word problems involving measurement and the How much more? aspect of subtraction. A85 Find area of quadrilaterals. A87 Find area of irregular figures. A88 Find the area of irregular figures. A90 Find surface area. A97 Compute area. A98 Compute area. A115 Decide when to use a calculator on a test. A115 Compute with measures. A115 Find area of triangles. A142 Measure and compute with metric units. A144 Determine side-length of a rectangle when given one side-length and the area. A155 Compute with measures. A175 Analyze diagrams. A176 Relate side length, perimeter, and area of plane figures. A180 Find volume of an irregular figure.
(C) measure angles; and	A147 Measure angles.
(D) convert measures within the same measurement system (customary and metric) based on relationships between units.	A11 Review measurement terms in the customary and metric systems. A24 Understand relationships among gallons, cups, pints, and quarts. A86 Review basic measurement facts.
(6.9) Probability and statistics. The student uses experimental and theoretical probability to make predictions. The student is expected to:	
(A) construct sample spaces using lists and tree diagrams; and	A122 Do a probability experiment. A122 Record results in a line plot. A123 Use a sample space to determine theoretical probability. A123 Use the Look for a Pattern problem-solving strategy. A123 Compare experimental to theoretical probability. A123 Understand independent events. A127 Do a probability experiment. A127 Judge the fairness of a game. A128 Explore probability and fair games. A128 Make tree diagrams to show sample spaces. A128 Count outcomes. A132 Do a probability experiment. A132 Look at complimentary events. A133 Do a probability experiment. A133 Look at complementary events. A133 Find the mean. A133 Make and use a line plot.

Texas Essential Knowledge and Skills for Mathematics, Grade 6	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) find the probabilities of a simple event and its complement and describe the relationship between the two.	A122 Do a probability experiment. A122 Record results in a line plot. A123 Use a sample space to determine theoretical probability. A123 Use the Look for a Pattern problem-solving strategy. A123 Compare experimental to theoretical probability. A123 Understand independent events. A127 Do a probability experiment. A127 Judge the fairness of a game. A128 Explore probability and fair games. A128 Make tree diagrams to show sample spaces. A128 Count outcomes. A132 Do a probability experiment. A132 Look at complimentary events. A133 Make and use a line plot.
(6.10) Probability and statistics. The student uses statistical representations to analyze data. The student is expected to:	
(A) select and use an appropriate representation for presenting and displaying different graphical representations of the same data, including line plot, line graph, bar graph, and stem and leaf plot;	A67 Use the Make a Table, Draw a Diagram, and Solve a Simpler Problem problem-solving strategies. A122 Record results in a line plot. A128 Make tree diagrams to show sample spaces. A133 Make and use a line plot. A135 Draw a histogram and a bar graph from the same data.
(B) identify mean (using concrete objects and pictorial models), median, mode, and range of a set of data;	A91 Review mean, median, and mode. A133 Find the mean. A135 Find the mean, median, mode, and range for a set of data from a line plot. A143 Use mean.
(C) sketch circle graphs to display data; and	A175 Use circle graphs to model percent.
(D) solve problems by collecting, organizing, displaying, and interpreting data.	A23 Use Find a Pattern, Make a List, and Solve a Simpler Problem problem-solving strategies. A27 Use the Solve a Simpler Problem and Look for a Pattern problem-solving strategies. A31 Solve word problems involving measurement and the How much more? aspect of subtraction. A56 Solve one- and two-step equations. A67 Use the Make a Table, Draw a Diagram, and Solve a Simpler Problem problem-solving strategies. A122 Record results in a line plot. A128 Make tree diagrams to show sample spaces. A133 Make and use a line plot. A135 Draw a histogram and a bar graph from the same data. A143 Make predictions based on data. A177 Use the Look for a Pattern and Solve a Simpler Problem problem-solving strategies. A178 Use the Solve a Simpler Problem and Look for a Pattern problem-solving strategies.

Texas Essential Knowledge and Skills for Mathematics, Grade 6	<i>Afterschool Achievers: Math Club Activity (A)</i>
(6.11) Underlying processes and mathematical tools. The student applies Grade 6 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:	
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;	This objective is addressed in each activity.
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	Students are introduced to a variety of problem-solving models throughout the program. See for example: A2 Use the Guess, Check, and Revise and Look for a Pattern problem-solving strategies. A8 Use Look for a Pattern, Make a List, and Guess, Check and Revise problem-solving strategies. A27 Use the Solve a Simpler Problem and Look for a Pattern problem-solving strategies. A43 Use the Make a Diagram, Do a Simulation, and Use Logical Reasoning problem-solving strategies.
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	Students are asked to select an appropriate problem-solving strategy throughout the program. See for example: A13 Use the Look for a Pattern and Write an Equation problem-solving strategies. A20 Use the Work Backward and Make a Diagram problem-solving strategies. A23 Use Find a Pattern, Make a List, and Solve a Simpler Problem problem-solving strategies. A27 Use the Solve a Simpler Problem and Look for a Pattern problem-solving strategies. A28 Use the Make a List, Write an Equation, and Look for a Pattern problem-solving strategies. A37 Use the Work Backward problem-solving strategy. A42 Use the Make a Diagram, Do a Simulation, and Use Logical Reasoning problem-solving strategies. A102 Use the Make a Table, Draw a Diagram, and Look for a Pattern problem-solving strategies. A126 Use the Guess, Check, and Revise problem-solving strategy. A168 Use the Make a List problem-solving strategy. A178 Use the Solve a Simpler Problem and Look for a Pattern problem-solving strategies.

Texas Essential Knowledge and Skills for Mathematics, Grade 6	<i>Afterschool Achievers: Math Club Activity (A)</i>
(D) select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.	Each activity helps students make good choices about solution methods: paper/pencil, mental math, estimation, logical reasoning, and using a calculator. See for example: A5 Estimate and use logical reasoning to select the correct product from among four choices. A95 Use the Distributive Property to multiply mentally and improve test-taking speed and accuracy. A96 Use estimation to determine the reasonableness of an answer. A115 Decide when to use a calculator on a test. A180 Write a clear, complete constructed response.
(6.12) Underlying processes and mathematical tools. The student communicates about Grade 6 mathematics through informal language, representations, and models. The student is expected to:	
(A) communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models; and	Students are required to communicate mathematical ideas in each activity.
(B) evaluate the effectiveness of different representations to communicate ideas.	Students have the opportunity to meet this objective in many activities throughout the program. See for example: A2 Look Ahead
(6.13) Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions. The student is expected to:	
(A) make conjectures from patterns or sets of examples and nonexamples; and	Students make conjectures from patterns throughout the program. See for example: A2 Use the Guess, Check, and Revise and Look for a Pattern problem-solving strategies. A8 Use Look for a Pattern, Make a List, and Guess, Check and Revise problem-solving strategies. A18 Use Look for a Pattern, Read and Make a Table, and Write an Equation problem-solving strategies. A42 Use the Make a Diagram, Do a Simulation, and Use Logical Reasoning problem-solving strategies. A43 Use the Make a Diagram, Do a Simulation, and Use Logical Reasoning problem-solving strategies. A47 Use logical reasoning. A65 Use estimation and logical reasoning to eliminate incorrect answer choices. A122 Use the Look for a Pattern problem-solving strategy. A137 Use the Look for a Pattern problem-solving strategy.
(B) validate his/her conclusions using mathematical properties and relationships.	Students transfer their understanding of the mathematics in each activity in the “Go Further” section.

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correlated to

Texas Essential Knowledge and Skills for Mathematics

Grade 7

Texas Essential Knowledge and Skills for Mathematics, Grade 7	<i>Afterschool Achievers: Math Club Activity (A)</i>
(b) Knowledge and skills.	
(7.1) Number, operation, and quantitative reasoning. The student represents and uses rational numbers in a variety of equivalent forms. The student is expected to:	
(A) compare and order integers and positive rational numbers;	A61 Order fractions, decimals, and percents. A76 Order fractions, decimals, and percents. A96 Order fractions. A99 Compare decimal numbers. A116 Order fractions. A118 Compare and order whole numbers. A119 Compare positive and negative numbers. A159 Compute and compare unit costs. A161 Order integers.
(B) convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator; and	A26 Review equivalent fractions and decimals. A27 Write fractions as decimals. A44 Review finding percents and fractional amounts. A61 Write equivalent fractions, decimals, and percents. A76 Write equivalent forms of decimals, fractions, and percents.
(C) represent squares and square roots using geometric models.	The following activity provides an opportunity to meet this objective: A39 Find square roots of perfect squares less than 200.
(7.2) Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies or divides to solve problems and justify solutions The student is expected to:	
(A) represent multiplication and division situations involving fractions and decimals with models, including concrete objects, pictures, words, and numbers;	A16 Compute with fractions and whole numbers. A35 Compute with decimals. A40 Compute with decimals. A55 Compute with fractions. A80 Compute with fractions. A95 Compute with fractions. A109 Compute with fractions. A111 Use mental math and estimation to compute with decimal numbers. A116 Multiply fractions. A121 Multiply fractions and whole numbers. A150 Compute with fractions, decimals, and integers. A160 Estimate and compute with decimal numbers. A177 Compute with decimals.

Texas Essential Knowledge and Skills for Mathematics, Grade 7	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) use addition, subtraction, multiplication, and division to solve problems involving fractions and decimals;	A16 Compute with fractions and whole numbers. A20 Compute with rational numbers. A35 Compute with decimals. A40 Compute with decimals. A46 Add fractions. A55 Compute with fractions. A80 Compute with fractions. A95 Compute with fractions. A96 Subtract fractions. A109 Compute with fractions. A111 Use mental math and estimation to compute with decimal numbers. A116 Multiply fractions. A121 Multiply fractions and whole numbers. A139 Add and subtract rational numbers. A150 Compute with fractions, decimals, and integers. A160 Estimate and compute with decimal numbers. A177 Compute with decimals.
(C) use models, such as concrete objects, pictorial models, and number lines, to add, subtract, multiply, and divide integers and connect the actions to algorithms;	A67 Compute with positive and negative numbers. A72 Compute with positive and negative numbers.
(D) use division to find unit rates and ratios in proportional relationships such as speed, density, price, recipes, and student-teacher ratio;	A10 Use proportions to solve percent problems. A78 Solve proportions. A82 Use ratios. A104 Solve for the missing term in a proportion. A106 Find a common percent of a number using mental math. A157 Use ratios. A162 Find ratios. A170 Use proportions.
(E) simplify numerical expressions involving order of operations and exponents;	A64 Use order of operations. A69 Use order of operations with integers. A124 Compute using the order of operations. A141 Use order of operations with integers. A161 Use order of operations, including exponents and integers.
(F) select and use appropriate operations to solve problems and justify the selections; and	The following activities provide opportunities to meet this objective: A35 Estimate and use logical reasoning to select the correct answer from among four choices. A80 Estimate and use logical reasoning to select the correct answer from among four choices. A95 Estimate and use logical reasoning to select the correct answer from among four choices.

Texas Essential Knowledge and Skills for Mathematics, Grade 7	<i>Afterschool Achievers: Math Club Activity (A)</i>
(G) determine the reasonableness of a solution to a problem.	A5 Analyze answer choices. A25 Use benchmark fractions to estimate sums and differences. A35 Estimate and use logical reasoning to select the correct answer from among four choices. A40 Estimate to eliminate incorrect answer choices. A45 Analyze errors. A55 Estimate to eliminate incorrect quotients for division with mixed numbers. A65 Use the Use Logical Reasoning problem-solving strategy. A70 Use divisibility rules as a way to eliminate distracters. A80 Estimate and use logical reasoning to select the correct answer from among four choices. A95 Estimate and use logical reasoning to select the correct answer from among four choices. A105 Eliminate incorrect answer choices. A135 Estimate with percents to choose from among four answer choices.
(7.3) Patterns, relationships, and algebraic thinking. The student solves problems involving direct proportional relationships. The student is expected to:	
(A) estimate and find solutions to application problems involving percent; and	A10 Use proportions to solve percent problems. A92 Use percent. A93 Use percent. A100 Use percents. A131 Find a common percent of a dollar amount using mental math.
(B) estimate and find solutions to application problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units.	A120 Find percent increase and decrease. A151 Find percent increase and percent decrease. A159 Compute and compare unit costs. A170 Use similarity to solve problems.
(7.4) Patterns, relationships, and algebraic thinking. The student represents a relationship in numerical, geometric, verbal, and symbolic form. The student is expected to:	
(A) generate formulas involving unit conversions, perimeter, area, circumference, volume, and scaling;	A12 Find perimeter and area. A24 Determine missing dimension of a rectangular prism when the volume and two other dimensions are given. A45 Find circumference and area of a circle. A74 Solve for linear dimensions in area, perimeter, and circumference formulas. A87 Approximate the areas of circles. A92 Find area. A93 Find area. A126 Relate side length, perimeter, and area of polygons. A145 Find volume of common three-dimensional figures. A171 Relate side-length or radius, perimeter or circumference, and area of plane figures. A176 Find surface area and volume of rectangular prisms and cylinders.

Texas Essential Knowledge and Skills for Mathematics, Grade 7	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) graph data to demonstrate relationships in familiar concepts such as conversions, perimeter, area, circumference, volume, and scaling; and	A29 Graph solutions to equations. A73 Use the Look for a Pattern and Make and Use a Graph problem-solving strategies to generalize about graphed equations.
(C) use words and symbols to describe the relationship between the terms in an arithmetic sequence (with a constant rate of change) and their positions in the sequence.	A68 Use the Look for a Pattern and Make and Use a Graph problem-solving strategies to generalize about the graphs of linear equations. A73 Use the Look for a Pattern and Make and Use a Graph problem-solving strategies to generalize about graphed equations. A166 Recognize and extend a numerical pattern.
(7.5) Patterns, relationships, and algebraic thinking. The student uses equations to solve problems. The student is expected to:	
(A) use concrete and pictorial models to solve equations and use symbols to record the actions; and	Selected Examples Include: A5 Use variables to write an equation. A13 Write equations to describe functional relationships. A29 Solve equations. A38 Write an equation to describe a functional relationship. A56 Solve one- and two-step equations involving integers. A60 Write and use equations. A83 Solve simple equations. A128 Use the Look for a Pattern, Make a Table, and Write an Equation problem-solving strategies. A133 Write an equation to describe a functional relationship. A147 Use the Look for a Pattern problem-solving strategy. A157 Use the Look for a Pattern and Draw a Diagram problem-solving strategies. A163 Write an equation to describe a functional relationship. A167 Use the Look for a Pattern and Make a List problem-solving strategies. A172 Write equations to describe functional relationships. A173 Write an equation to describe a functional relationship.
(B) formulate problem situations when given a simple equation and formulate an equation when given a problem situation.	A110 Use the Write and Solve an Equation problem-solving strategy.
(7.6) Geometry and spatial reasoning. The student compares and classifies two- and three-dimensional figures using geometric vocabulary and properties. The student is expected to:	
(A) use angle measurements to classify pairs of angles as complementary or supplementary;	A152 Measure angles. A153 Measure angles.
(B) use properties to classify triangles and quadrilaterals;	A152 Identify characteristics of plane figures. A157 Identify characteristics of plane figures. A158 Identify characteristics of plane figures.

Texas Essential Knowledge and Skills for Mathematics, Grade 7	<i>Afterschool Achievers: Math Club Activity (A)</i>	
(C) use properties to classify three-dimensional figures, including pyramids, cones, prisms, and cylinders; and	A79	Identify pyramids and prisms by their attributes.
(D) use critical attributes to define similarity.	A170	Use similarity to solve problems.
(7.7) Geometry and spatial reasoning. The student uses coordinate geometry to describe location on a plane. The student is expected to:		
(A) locate and name points on a coordinate plane using ordered pairs of integers; and	A114	Locate points on a coordinate plane.
(B) graph reflections across the horizontal or vertical axis and graph translations on a coordinate plane.	A42	Work with translations, rotations, and reflections.
(7.8) Geometry and spatial reasoning. The student uses geometry to model and describe the physical world. The student is expected to:		
(A) sketch three-dimensional figures when given the top, side, and front views;	A84	Name and sketch common three-dimensional figures.
(B) make a net (two-dimensional model) of the surface area of a solid; and	A42 A43	Practice spatial visualization with nets. Practice spatial visualization with nets of cubes.
(C) use geometric concepts and properties to solve problems in fields such as art and architecture.	A74	Solve for linear dimensions in area, perimeter, and circumference formulas.
(7.9) Measurement. The student solves application problems involving estimation and measurement. The student is expected to:		
(A) estimate measurements and solve application problems involving length (including perimeter and circumference) and area of polygons and other shapes;	A4 A12 A19 A19 A45 A50 A50 A74 A82 A87 A92 A93 A130 A162 A163 A177 A180 A180 A180	Determine the length of the base or height of a triangle when the area is given and either the base or height is known. Find perimeter and area. Determine the lengths of the sides of quadrilaterals given sufficient information. Compute with metric and customary measures. Find circumference and area of a circle. Compute with measures. Find area. Solve for linear dimensions in area, perimeter, and circumference formulas. Measure in metric units. Approximate the areas of circles. Find area. Find area. Compute surface area of prisms and cylinders. Measure and compute with metric measures. Measure and compute with metric measures. Compute with measures. Compute with measures. Find area. Compute with measures.

Texas Essential Knowledge and Skills for Mathematics, Grade 7	<i>Afterschool Achievers: Math Club Activity (A)</i>
(B) connect models for volume of prisms (triangular and rectangular) and cylinders to formulas of prisms (triangular and rectangular) and cylinders; and	The following activities provide opportunities to meet this objective: A145 Find volume of common three-dimensional figures. A176 Find surface area and volume of rectangular prisms and cylinders.
(C) estimate measurements and solve application problems involving volume of prisms (rectangular and triangular) and cylinders.	A145 Find volume of common three-dimensional figures. A176 Find surface area and volume of rectangular prisms and cylinders.
(7.10) Probability and statistics. The student recognizes that a physical or mathematical model can be used to describe the experimental and theoretical probability of real-life events. The student is expected to:	
(A) construct sample spaces for simple or composite events; and	A3 Create a sample space. A22 Make a sample space. A125 Construct a sample space as a means to answering probability and combinations questions. A138 Create a sample space.
(B) find the probability of a independent events.	A92 Find probability. A123 Find the experimental probability of events. A137 Find experimental probability.
(7.11) Probability and statistics. The student understands that the way a set of data is displayed influences its interpretation. The student is expected to:	
(A) select and use an appropriate representation for presenting and displaying relationships among collected data, including line plot, line graph, bar graph, stem and leaf plot, circle graph, and Venn diagrams, and justify the selection; and	A30 Use Venn diagrams to organize data. A122 Collect and organize data into a table. A137 Collect and organize data.
(B) make inferences and convincing arguments based on an analysis of given or collected data.	A75 Find the mean, median, mode, and range for a data set. A83 Find the mean for a set of data. A90 Find the first, second, and third quartiles and the range from a data set.
(7.12) Probability and statistics. The student uses measures of central tendency and range to describe a set of data. The student is expected to:	
(A) describe a set of data using mean, median, mode, and range; and	A75 Find the mean, median, mode, and range for a data set. A83 Find the mean for a set of data. A90 Find the first, second, and third quartiles and the range from a data set.
(B) choose among mean, median, mode, or range to describe a set of data and justify the choice for a particular situation.	A75 Find the mean, median, mode, and range for a data set. A83 Find the mean for a set of data. A90 Find the first, second, and third quartiles and the range from a data set.

Texas Essential Knowledge and Skills for Mathematics, Grade 7	<i>Afterschool Achievers: Math Club Activity (A)</i>
(7.13) Underlying processes and mathematical tools. The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:	
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;	This objective is addressed in each activity.
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	Students are introduced to a variety of problem-solving models throughout the program. See for example: A7 Use the Look for a Pattern and Draw a Diagram problem-solving strategies. A22 Use the Look for a Pattern problem-solving strategy. A42 Use the Make a List and Draw a Diagram problem-solving strategies. A62 Use the Logical Reasoning problem-solving strategy. A97 Use the Guess, Check, and Revise problem-solving strategies. A115 Use the Draw a Diagram problem-solving strategy. A127 Use the Read and Make a Table and Look for a Pattern problem-solving strategies.
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	Students are asked to select an appropriate problem-solving strategy throughout the program. See for example: A7 Use the Look for a Pattern and Draw a Diagram problem-solving strategies. A22 Use the Look for a Pattern problem-solving strategy. A42 Use the Make a List and Draw a Diagram problem-solving strategies. A62 Use the Logical Reasoning problem-solving strategy. A97 Use the Guess, Check, and Revise problem-solving strategies. A115 Use the Draw a Diagram problem-solving strategy. A127 Use the Read and Make a Table and Look for a Pattern problem-solving strategies.
(D) select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.	Each activity helps students make good choices about solution methods: paper/pencil, mental math, estimation, logical reasoning, and using a calculator. See for example: A33 Use a calculator to find powers of two. A35 Estimate and use logical reasoning to select the correct product from among four choices. A97 Use the Guess, Check, and Revise problem-solving strategies. A96 Use estimation to determine the reasonableness of an answer. A111 Use mental math and estimation to compute with decimal numbers.

Texas Essential Knowledge and Skills for Mathematics, Grade 7	<i>Afterschool Achievers: Math Club Activity (A)</i>
(7.14) Underlying processes and mathematical tools. The student communicates about Grade 7 mathematics through informal language, representations, and models. The student is expected to:	
(A) communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models; and	Students are required to communicate mathematical ideas in each activity.
(B) evaluate the effectiveness of different representations to communicate ideas.	Students have the opportunity to meet this objective in many activities throughout the program. See for example: A7 Use the Look for a Pattern and Draw a Diagram problem-solving strategies.
(7.15) Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions. The student is expected to:	
(A) make conjectures from patterns or sets of examples and nonexamples; and	Students make conjectures from patterns throughout the program. See for example: A7 Use the Look for a Pattern and Draw a Diagram problem-solving strategies. A12 Use the Look for a Pattern problem-solving strategy. A20 Use the Work Backward and Draw a Diagram problem-solving strategies. A42 Use the Make a List and Draw a Diagram problem-solving strategies. A43 Use the Make an Organized List and Draw a Diagram. A68 Use the Look for a Pattern and Make and Use a Graph problem-solving strategies to generalize about the graphs of linear equations. A97 Use the Guess, Check, and Revise problem-solving strategies. A110 Use the Write and Solve an Equation problem-solving strategy.
(B) validate his/her conclusions using mathematical properties and relationships.	Students transfer their understanding of the mathematics in each activity in the “Go Further” section.

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correlated to
Texas Essential Knowledge and Skills for Mathematics
Grade 8

Texas Essential Knowledge and Skills for Mathematics, Grade 8	<i>Afterschool Achievers: Math Club Activity (A)</i>
(b) Knowledge and skills.	
(8.1) Number, operation, and quantitative reasoning. The student understands that different forms of numbers are appropriate for different situations. The student is expected to:	
(A) compare and order rational numbers in various forms including integers, percents, and positive and negative fractions and decimals;	A9 Compare and order decimals and fractions. A26 Order rational numbers. A99 Compare decimal numbers. A159 Compute and compare unit prices.
(B) select and use appropriate forms of rational numbers to solve real-life problems including those involving proportional relationships;	A104 Solve proportions. A106 Find a common percent of a dollar amount using mental math. A110 Find percent of increase and percent of decrease. A119 Find percent of change. A135 Estimate with percents to choose from among four answer choices. A151 Find percent increase and percent decrease.
(C) approximate (mentally and with calculators) the value of irrational numbers as they arise from problem situations (such as π , $\sqrt{2}$); and	The following activity provides an opportunity to meet this objective: A30 Practice careful analysis of the relative values of expressions in a test setting.
(D) express numbers in scientific notation, including negative exponents, in appropriate problem situations.	A1 Use exponents. A13 Use exponents and recognize numbers close to powers of two. A66 Use scientific notation with negative exponents.

Texas Essential Knowledge and Skills for Mathematics, Grade 8	<i>Afterschool Achievers: Math Club Activity (A)</i>
(8.2) Number, operation, and quantitative reasoning. The student selects and uses appropriate operations to solve problems and justify solutions The student is expected to:	
(A) select appropriate operations to solve problems involving rational numbers and justify the selections;	<p>The following activity provides an opportunity to meet this objective:</p> <p>A12 Use logical reasoning to solve problems.</p> <p>A40 Use logical reasoning to eliminate incorrect answer choices.</p> <p>A77 Use logical reasoning to solve puzzles.</p> <p>A115 Estimate and use logical reasoning to eliminate incorrect distracters on a multiple-choice test.</p> <p>A122 Use the Guess, Check, and Revise and Use Logical Reasoning problem-solving strategies.</p> <p>A123 Use the Guess, Check, and Revise and Use Logical Reasoning problem-solving strategies.</p> <p>A128 Use the Use Logical Reasoning problem-solving strategy.</p> <p>A132 Use the Use Logical Reasoning problem-solving strategy.</p> <p>A133 Use the Write and Solve an Equation and Use Logical Reasoning problem-solving strategy.</p>
(B) use appropriate operations to solve problems involving rational numbers in problem situations;	<p>A1 Multiply prime numbers and unit fractions.</p> <p>A6 Multiply integers.</p> <p>A31 Add integers.</p> <p>A40 Subtract fractions.</p> <p>A45 Add fractions.</p> <p>A46 Add rational numbers.</p> <p>A51 Add and subtract with absolute values.</p> <p>A65 Use absolute value and a number line to think about subtraction with integers.</p> <p>A81 Subtract positive and negative numbers.</p> <p>A96 Subtract fractions.</p> <p>A116 Multiply fractions and whole numbers.</p> <p>A121 Multiply fractions and whole numbers.</p> <p>A139 Subtract rational numbers.</p> <p>A160 Divide fractions.</p>
(C) evaluate a solution for reasonableness; and	<p>A41 Evaluate expressions involving integers.</p> <p>A64 Evaluate algebraic expressions involving rational numbers.</p> <p>A121 Evaluate multi-step expressions.</p> <p>A146 Evaluate expressions with rational numbers.</p>
(D) use multiplication by a constant factor (unit rate) to represent proportional relationships.	<p>The following activity provides an opportunity to meet this objective:</p> <p>A104 Solve proportions.</p>

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(8.3) Patterns, relationships, and algebraic thinking. The student identifies proportional or non-proportional linear relationships in problem situations and solves problems. The student is expected to:	
(A) compare and contrast proportional and non-proportional relationships; and	A30 Analyze algebraic relationships involving rational numbers and the number line. A77 Write an equation to describe a functional relationship. A104 Solve proportions. A133 Write an equation to describe a functional relationship. A150 Analyze algebraic relationships by making a table or a graph. A153 Write an equation to describe a functional relationship. A159 Recognize common measurement relationships.
(B) estimate and find solutions to application problems involving percents and proportional relationships such as similarity and rates.	A106 Find a common percent of a dollar amount using mental math. A110 Find percent of increase and percent of decrease. A119 Find percent of change. A135 Estimate with percents to choose from among four answer choices. A151 Find percent increase and percent decrease.
(8.4) Patterns, relationships, and algebraic thinking. The student makes connections among various representations of a numerical relationship.	
The student is expected to generate a different representation of data given another representation of data (such as a table, graph, equation, or verbal description).	A150 Analyze algebraic relationships by making a table or a graph.

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(8.5) Patterns, relationships, and algebraic thinking. The student uses graphs, tables, and algebraic representations to make predictions and solve problems. The student is expected to:		
(A) predict, find, and justify solutions to application problems using appropriate tables, graphs, and algebraic equations; and	A5 A7 A8 A20 A29 A77 A77 A102 A110 A113 A133 A135 A150 A153 A153	Write an equation to reflect the elements of a word problem. Use the Look for a Pattern and Make a Table problem-solving strategies. Use Look for a Pattern and Make a Table problem-solving strategies. Relate problems to equations. Graph solutions to equations. Use the Look for a Pattern problem-solving strategy. Write an equation to describe a functional relationship. Use the Write an Equation and Draw a Diagram problem-solving strategies. Use a line graph and a bar graph. Use the Draw a Diagram and Write an Equation problem-solving strategies. Write an equation to describe a functional relationship. Read and interpret circle graphs. Analyze algebraic relationships by making a table or a graph. Use the Write an Equation, Draw a Diagram, and Look for a Pattern problem-solving strategies. Write an equation to describe a functional relationship.
(B) find and evaluate an algebraic expression to determine any term in an arithmetic sequence (with a constant rate of change).	A43	Write an expression.
(8.6) Geometry and spatial reasoning. The student uses transformational geometry to develop spatial sense. The student is expected to:		
(A) generate similar shapes using dilations including enlargements and reductions; and	A101	Recognize and be able to draw geometric figures and identify their attributes.
(B) graph dilations, reflections, and translations on a coordinate plane.	A137	Graph figures on the coordinate plane.
(8.7) Geometry and spatial reasoning. The student uses geometry to model and describe the physical world. The student is expected to:		
(A) draw three-dimensional figures from different perspectives;	A84 A84	Sketch the nets of common solids. Sketch the solids represented by a two-dimensional net.
(B) use geometric concepts and properties to solve problems in fields such as art and architecture;	A74	Solve for linear dimensions in area, perimeter, and circumference formulas.
(C) use pictures or models to demonstrate the Pythagorean Theorem; and	A21 A50 A112 A152	Use the Pythagorean Theorem. Use the Pythagorean Theorem. Use the Pythagorean Theorem. Use the Pythagorean Theorem.

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(D) locate and name points on a coordinate plane using ordered pairs of rational numbers.	A49 Plot ordered pairs. A114 Locate points on a coordinate plane. A146 Plot ordered pairs on a coordinate grid.
(8.8) Measurement. The student uses procedures to determine measures of three-dimensional figures. The student is expected to:	
(A) find lateral and total surface area of prisms, pyramids, and cylinders using concrete models and nets (two-dimensional models);	A19 Determine surface area of a rectangular prism given sufficient information. A130 Compute the surface area and volume of prisms and cylinders. A176 Find surface area and volume of similar rectangular prisms and cylinders.
(B) connect models of prisms, cylinders, pyramids, spheres, and cones to formulas for volume of these objects; and	The following activity provides an opportunity to meet this objective: A32 Study characteristics of solid figures and polygons. A89 Identify characteristics of solid figures. A169 Identify attributes of 3-dimensional solids.
(C) estimate measurements and use formulas to solve application problems involving lateral and total surface area and volume.	A19 Determine surface area of a rectangular prism given sufficient information. A92 Find volume. A130 Compute the surface area and volume of prisms and cylinders. A145 Find the volume of pyramids and cones. A176 Find surface area and volume of similar rectangular prisms and cylinders.
(8.9) Measurement. The student uses indirect measurement to solve problems. The student is expected to:	
(A) use the Pythagorean Theorem to solve real-life problems; and	The following activity provides an opportunity to meet this objective: A21 Use the Pythagorean Theorem. A50 Use the Pythagorean Theorem. A112 Use the Pythagorean Theorem. A152 Use the Pythagorean Theorem.
(B) use proportional relationships in similar two-dimensional figures or similar three-dimensional figures to find missing measurements.	A4 Determine the missing dimension of a polygon when the area is known. A24 Determine the missing dimension of a three-dimensional figure when the volume and other dimensions are given.
(8.10) Measurement. The student describes how changes in dimensions affect linear, area, and volume measures. The student is expected to:	
(A) describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionally; and	The following activity provides an opportunity to meet this objective: A104 Solve proportions. A74 Solve for linear dimensions in area, perimeter, and circumference formulas. A76 Find area and perimeter or circumference of similar polygons and circles. A126 Relate side length, perimeter, and area of polygons. A171 Relate side-length, perimeter, and area of similar polygons.

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(B) describe the resulting effect on volume when dimensions of a solid are changed proportionally.	The following activity provides an opportunity to meet this objective: A92 Find volume. A130 Compute the surface area and volume of prisms and cylinders. A145 Find the volume of pyramids and cones. A176 Find surface area and volume of similar rectangular prisms and cylinders.
(8.11) Probability and statistics. The student applies concepts of theoretical and experimental probability to make predictions. The student is expected to:	
(A) find the probabilities of dependent and independent events;	A142 Find the probability of dependent events and compound events. A143 Find the probability of dependent events and compound events.
(B) use theoretical probabilities and experimental results to make predictions and decisions; and	The following activity provides an opportunity to meet this objective: A142 Find experimental and theoretical probability. A143 Find theoretical probability.
(C) select and use different models to simulate an event.	The following activity provides an opportunity to meet this objective: A128 Find probability of complementary events. A142 Find the probability of dependent events and compound events. A143 Find the probability of dependent events and compound events.
(8.12) Probability and statistics. The student uses statistical procedures to describe data. The student is expected to:	
(A) select the appropriate measure of central tendency or range to describe a set of data and justify the choice for a particular purpose;	The following activity provides an opportunity to meet this objective: A73 Use inductive and deductive reasoning.
(B) draw conclusions and make predictions by analyzing trends in scatterplots; and	A80 Interpret trends.
(C) select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, stem and leaf plots, circle graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams, with and without the use of technology.	A172 Construct bar graphs and circle graphs. A173 Construct and compare bar graphs and circle graphs. A173 Use the Make a Graph problem-solving strategy.
(8.13) Probability and statistics. The student evaluates predictions and conclusions based on statistical data. The student is expected to:	
(A) evaluate methods of sampling to determine validity of an inference made from a set of data; and	A125 Construct a sample space and calculate probability.
(B) recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis.	A165 Analyze errors.

Texas Essential Knowledge and Skills for Mathematics, Grade 8	<i>Afterschool Achievers: Math Club Activity (A)</i>
(8.14) Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. The student is expected to:	
(A) identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics;	This objective is addressed in each activity.
(B) use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;	<p>Students are introduced to a variety of problem-solving models throughout the program. See for example:</p> <p>A7 Use the Look for a Pattern and Make a Table problem-solving strategies.</p> <p>A13 Use the Look for a Pattern and the Solve a Simpler Problem problem-solving strategies.</p> <p>A32 Use the Draw a Diagram problem-solving strategy.</p> <p>A63 Use the Look for a Pattern and the Solve a Simpler Problem problem-solving strategies.</p> <p>A68 Use the Look for a Pattern and Separate into Cases problem-solving strategies.</p> <p>A103 Use the Write an Equation and Draw a Diagram problem-solving strategies.</p>
(C) select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem; and	<p>Students are asked to select an appropriate problem-solving strategy throughout the program. See for example:</p> <p>A7 Use the Look for a Pattern and Make a Table problem-solving strategies.</p> <p>A13 Use the Look for a Pattern and the Solve a Simpler Problem problem-solving strategies.</p> <p>A32 Use the Draw a Diagram problem-solving strategy.</p> <p>A63 Use the Look for a Pattern and the Solve a Simpler Problem problem-solving strategies.</p> <p>A68 Use the Look for a Pattern and Separate into Cases problem-solving strategies.</p> <p>A103 Use the Write an Equation and Draw a Diagram problem-solving strategies.</p> <p>A123 Use the Guess, Check, and Revise and Use Logical Reasoning problem-solving strategies.</p> <p>A153 Use the Write an Equation, Draw a Diagram, and Look for a Pattern problem-solving strategies.</p>

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(D) select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.	Each activity helps students make good choices about solution methods: paper/pencil, mental math, estimation, logical reasoning, and using a calculator. See for example: A33 Use a calculator to find powers of two. A34 Use mental math with integers. A35 Use estimation to eliminate incorrect distracters. A40 Use logical reasoning to eliminate incorrect answer choices. A77 Use logical reasoning to solve puzzles. A100 Estimate and compute with fractions and whole numbers. A106 Find a common percent of a dollar amount using mental math. A115 Estimate and use logical reasoning to eliminate incorrect distracters on a multiple-choice test.
(8.15) Underlying processes and mathematical tools. The student communicates about Grade 8 mathematics through informal language, representations, and models. The student is expected to:	
(A) communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models; and	Students are required to communicate mathematical ideas in each activity.
(B) evaluate the effectiveness of different representations to communicate ideas.	Students have the opportunity to meet this objective in many activities throughout the program. See for example: A7 Use the Look for a Pattern and Draw a Diagram problem-solving strategies.
(8.16) Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions. The student is expected to:	
(A) make conjectures from patterns or sets of examples and nonexamples; and	Students make conjectures from patterns throughout the program. See for example: A7 Use the Look for a Pattern and Make a Table problem-solving strategies. A13 Use the Look for a Pattern and the Solve a Simpler Problem problem-solving strategies. A32 Use the Draw a Diagram problem-solving strategy. A63 Use the Look for a Pattern and the Solve a Simpler Problem problem-solving strategies. A68 Use the Look for a Pattern and Separate into Cases problem-solving strategies. A103 Use the Write an Equation and Draw a Diagram problem-solving strategies. A123 Use the Guess, Check, and Revise and Use Logical Reasoning problem-solving strategies. A153 Use the Write an Equation, Draw a Diagram, and Look for a Pattern problem-solving strategies.
(B) validate his/her conclusions using mathematical properties and relationships.	Students transfer their understanding of the mathematics in each activity in the “Go Further” section.



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