

Math Smith	3rd Grade	Aitkin Independent District #1 8/9/2013
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Unit #	Content	Essential questions	Objectives Skills Processes	Vocabulary	Assessment	Resources Chapters / Sections	MN Standard & Benchmarks	Estimate # of days on Unit
Unit 1 (September)	Routines, Review, and Assessment	Can the student generate equivalent names for whole numbers? Can the student practice and apply addition and subtraction facts? Can the student calculate and compare values of coins and bill combinations? Can the student use and explain the symbols +, -, =, <, and >? Can the student show and tell time to the nearest minute on an analog clock? Can the student create bar graphs? Can the student describe events using basic probability terms? Can the student extend numeric patterns? Can the student use rules to solve problems?	To review types of numbers. To introduce the Math Message routine; to review patterns on number grids. To introduce the Student Reference Book; and to establish a set of work rules. To review telling time, measuring lengths, and using calculators; to guide children as they identify and draw 2-dimensional shapes. To review data concepts; to provide opportunities to find data landmarks and use graphs to draw conclusions. To review the idea that there are many names for a number. To introduce the vocabulary of chance. To guide children as they identify number-grid patterns and use them to find differences between pairs of numbers. To review calculator skills: adding, subtracting, and skip counting forward and backward; to provide practice for place-value skills. To guide children as they solve problems involving money; to provide opportunities to determine when a situation needs an exact answer or an estimate; and to provide practice for estimation skills. To guide children as they explore number patterns. To review telling time and finding elapsed time.	Answer Key, arrow rule, bar graph , calculate, centimeter, Data Bank, decimal, decimal point, difference, elapsed time, equivalent, essay, estimate , estimation, event, frame, Frames-and-Arrows, diagram, Glossary, inch, Index, line plot, make change, mathematical tools , maximum, minimum, mode, museum, name-collection boxes, number grid, number-grid puzzle, range, regular price, sale price, Table of Contents, tally chart , tool kit, units	Unit 1 Test, Math Boxes, Math Journal Pages, IXL Math	EM-U1, IXL Math, Additional resources	3.3.3.1, 3.3.3.2, 3.3.3.3, 3.4.1.1	14
Unit 2 (September - October)	Adding and Subtracting Whole Numbers	Can the student identify the digits in numbers and express their values? Can the student find equivalent names for whole numbers? Can the student use basic facts to compute extended facts? Can the student use paper-and-pencil algorithms to solve problems involving the addition and subtraction of whole numbers? Can the student use strategies to make estimates? Can the student apply parts-and-total and comparison situations? Can the student tell and show time on an analog clock? Can the student find and use rules to solve problems?	To review fact families and number families; and to review the inverse relationship between addition and subtraction. To review ways in which basic addition and subtraction facts are used to solve problems with larger numbers. To provide opportunities to review and solve "What's My Rule?" problems. To guide children as they use parts-and-total diagrams to help solve parts-and-total number stories. To guide children as they use change diagrams to help solve change number stories. To guide children as they use comparison diagrams to help solve comparison number stories. To guide children as they make ballpark estimates; and to provide opportunities to model and practice the partial-sums algorithm for 2- and 3-digit numbers. To review making ballpark estimates; and to review the counting-up and trade-first subtraction algorithms. To guide children as they solve number stories having three or more addends.	diagram, change-to-less number story, change-to-more number story, comparison diagram, comparison number story, compliment, counting-up method, deposit, fact extension, fact family, function machine, higher-decade facts, input , label, measurement unit, number family, number model , output, partial-sums algorithm, partial-sums method, parts-and-total diagram, parts-and-total number story, rule , trade-first algorithm, trade-first method, turn-around rule, unit box, "What's My Rule?"	Unit 2 Test, Math Boxes, IXL Math	EM-U2, IXL Math, Additional resources	3.1.1.4, 3.1.2.1, 3.1.2.2, 3.2.1.1	12

U3 (October)	Linear Measures and Area	<p>Can the student make reasonable estimates for whole number addition and subtraction problems? Can the student measure length to the nearest 1/2 in. and 1/2 cm.? Can the student use strategies to measure the perimeter of polygons? Can the student count unit squares to find the perimeters and areas of rectangles? Can the student describe relationships among inches, feet, and yards? Can the student solve problems involving addition and subtraction of decimals in a money context? Can the student use data to create charts, tables, bar graphs, and line plots? Can the student find the maximum, minimum, range, and median of a set a data? Can the student describe events using basic probability terms?</p>	<p>To discuss the need for standard units of measure; and to guide children as they create a unit of length and measure it. To guide children as they measure line segments to the nearest inch, 1/2 inch, 1/4 inch, centimeter, 1/2 centimeter, and millimeter. To review U.S. customary and metric units of length; and to guide children as they estimate and measure lengths to the nearest inch and nearest centimeter. To review polygons and the concept of perimeter. To guide children as they make rectangles with given perimeters, relate tiling to area, and construct triangles using given lengths and then find their perimeters. To guide children as they develop the concept of area, to demonstrate the measure of area by using 1-foot and 1-yard squares, and find areas by counting squares. To guide children as they develop the concept of area by measuring with identical squares; and to demonstrate how to calculate the area of rectangles using number models. To guide children as they relate circumference and diameter through the about 3 times rule.</p>	<p>about 3 times circle rule, area, center, centi-, centimeter, circumference, deci-, diameter, foot, inch, length, line segment, meter, metric system, milli-, millimeter, parallelogram, perimeter, personal references, polygon, rectangle, rhombus, square, square feet, square yards, standard unit, tiling, trapezoid, triangle, U.S. customary system, yard</p>	<p>Unit 3 Test, Math Boxes, Journal Pages, IXL Math</p>	<p>EM-U3, IXL Math, Additional resources</p>	<p>3.1.1.4, 3.1.2.1, 3.3.2.1, 3.3.2.2, 3.3.2.3, 3.4.1.1</p>	<p>11</p>
U4 (November)	Multiplication and Division	<p>Can the student identify digits and express their values in numbers? Can the student demonstrate automaticity with x 1, x 2, x 5, and x 10? Can the student use strategies to compute remaining facts up to 10 x 10? Can the student use repeated addition, arrays, and skip counting to model multiplication? Can the student use equal sharing and equal grouping to model division? Can the student describe numeric patterns and use them to solve problems? Can the student use rules to solve problems? Can the student explore the inverse relationship between multiplication and division? Can the student apply the Commutative Property of Multiplication and the Multiplicative Identity to solve problems? Can the student find the area of rectangles?</p>	<p>The students complete 1 full week of Multiplication Mania learning their basic multiplication facts through whole and small group activities, learning stations, games, songs, and art. To review division as equal sharing and equal grouping. To provide opportunities to model divisions number stories with arrays, multiplication/division diagrams, and number models. To introduce the use of a map scale to estimate distances. To guide young children as the develop intuition about equally likely events.</p>	<p>array, as the crow flies, dividend, divisor, equally likely, fact power, factor, fair, heads, map scale, multiples of equal groups, multiplication, multiplication/division diagram, Multiplication/Division Facts Table, product, quotient, remainder, scale factor, square numbers, tails, turn-around shortcut</p>	<p>Unit 4 Test, Math Boxes, Math Journal Pages, IXL Math</p>	<p>EM-U4, IXL Math, Multiplication Mania Packet, Additional resources</p>	<p>3.1.2.3, 3.1.2.4, 3.2.1.1, 3.2.2.1, 3.2.2.2, 3.4.1.1</p>	<p>9</p>

U5 (November-December)	Place Value in Whole Numbers and Decimals	<p>Can the student read and write whole numbers up to 1,000,000 and decimals and identify the values of digits in those places? Can the student use manipulatives and drawings to find and represent equivalent names for fractions? Can the student compare whole numbers up to 1,000,000 and decimals? Can the student use basic facts to compute extended facts? Can the student use strategies to solve problems involving the addition and subtraction of multidigit whole numbers? Can the student make reasonable estimates for whole-number addition and subtraction facts? Can the student find the area and perimeter of a rectangle? Can the student apply the Commutative and Associative Properties?</p>	<p>To review place value through ten-thousands. To provide practice reading, writing, comparing, and ordering numbers less than 100,000. To guide children as they extend place value to millions; and to guide children as they read and write numbers through millions. To guide children as they read, write, and compare large numbers; and to guide children as they express relationships as differences and ratios. To guide children as they develop a sense of very large numbers. To provide opportunities to count-base-10 blocks, identify polygons, and compare perimeters and areas. To model decimals with base-10 blocks; and to review decimals with money. To model tenths and hundredths with base-10 blocks; and to model exchanges between tenths and hundredths. To demonstrate the use of decimal notation for metric measures and the conversion of centimeters to meters. To introduce thousandths by revisiting millimeters; and to provide opportunities to interpret data from a map. To provide practice for decimal place value to thousandths. To guide children as they analyze data from sunrise-sunset routine; and to demonstrate how to make and read a line graph.</p>	<p>big cube, census, cube, decimeter, flat, hundredth-thousands, hundredths, greater than, less than, line graph, long, maximum, median, millimeter, millions, pie graph, population, precipitation, ten-thousands, tenths, thousands, thousandths</p>	<p>Unit 5 Test, Math Boxes, Math Journal Pages, IXL Math</p>	<p>EM-U5, IXL Math, Additional resources</p>	<p>3.1.1.1, 3.1.1.2, 3.1.1.3, 3.1.1.4, 3.1.1.5, 3.4.1.1</p>	<p>13</p>
U6 (January)	Geometry	<p>Can the student identify and draw points, intersecting and parallel line segments, lines, rays, and right angles? Can the student identify and describe plane and solid figures? Can the student locate lines of symmetry and complete 2-D symmetric designs? Can the student model decimals through hundredths? Can the student order decimals through hundredths? Can the student use equal sharing to model division? Can the student describe angle rotations?</p>	<p>To review line segments; and to introduce rays and lines. To guide children as they model and draw polygons, parallel and intersecting line segments, rays, and lines. To guide children as they use angles to record turns (rotations). To provide opportunities to explore various types of triangles. To provide opportunities to explore various types of quadrangles. To review the characteristics of polygons, emphasizing regular polygons. To guide children as they draw angles as records of rotations. To guide children as they measure angles. To review symmetry; and to provide opportunities to explore properties of symmetric shapes. To provide opportunities to explore the concept of congruence; to guide children as they draw line segments; and to practice naming decimals. To review 3-dimensional shapes; and to guide children as they identify bases of pyramids and prisms. To provide opportunities to explore the characteristics of prisms.</p>	<p>adjacent sides, angle, apex, arrowhead, base of prism, bases of a pyramid, clockwise, counterclockwise, cone, congruent, cylinder, degree, edge, endpoint, equilateral triangle, face, full turn, half-turn, hexagonal prism, intersect, kite, line, line of symmetry, line segment, mirror image, parallel, parallelogram, plane figures, polygon, polyhedron, pyramid, quadrangle, quarter-turn, ray, rectangle, rectangular prism, regular polygon, rhombus, right angle, right triangle, rotation, side, sphere, square, symmetric, symmetry, trapezoid, triangle, triangular prism,</p>	<p>Unit 6 Test, Math Boxes, Math Journal Pages, IXL Math</p>	<p>EM-U6, IXL Math, Additional resources</p>	<p>3.3.1.1, 3.3.1.2</p>	<p>13</p>

U7 (January-February)	Multiplication and Division	<p>Can the student solve problems involving addition and subtraction? Can the student demonstrate automaticity with $\times 0$, $\times 1$, $\times 2$, $\times 5$, and $\times 10$ multiplication facts? Can the student make reasonable estimates for whole number addition and subtraction problems? Can the student explain how the estimates were obtained? Can the student use repeated addition, arrays, and skip counting to model multiplication? Can the student use equal sharing and equal grouping to model division? Can the student identify and draw parallel and intersecting lines and rays? Can the student describe plane and solid figures? Can the student recognize that parentheses affect the order in which operations are carried out?</p>	<p>To review square-number facts, multiplication, and division patterns. To guide children as they determine which multiplication facts they still need to learn. To guide children as they practice multiplication and division facts. To introduce parentheses in number models. To provide opportunities to express numbers as sums of products using number models that contain parentheses. To guide children as they multiply 1-digit numbers by multiples of 10, 100, and 1,000 and divide such multiples by 1-digit numbers. To guide children as they determine when an estimate is appropriate and as they practice making estimates. To guide children as they multiply multiples of 10 by multiples of 10. To provide experiences with exploring similar polygons, solving ratio problems, and exploring geometric configurations.</p>	<p>estimate, extended facts, factor, parentheses, product, similar figures, square number, square product</p>	<p>Unit 7 Test, Math Boxes, Math Journal Pages, IXL Math</p>	<p>EM-U7, IXL Math, Additional resources</p>	<p>3.1.2.1, 3.1.2.3, 3.1.2.4, 3.2.2.1, 3.2.2.2, 3.3.1.1</p>	<p>10</p>
U8 (February)	Fractions	<p>Can the student identify the value of digits in decimals? Can the student read, write, and model fractions? Can the student solve problems involving fractional parts of a collection? Can the student describe the strategies used? Can the student find equivalent names for fractions? Can the student compare and order fractions? Can the student use models to demonstrate division? Can the student predict the outcomes of simple experiments? Can the student complete symmetric shapes? Can the student describe relationships among units of time?</p>	<p>To guide children as they use fractions to name a of b equal parts. To guide children as they make predictions based on outcomes and construct situations that meet given conditions. To provide opportunities to explore fractional relationships, spatial relationships, and combinations. To introduce the number line as a model for fractions. To guide children as they find equivalent fractions. To guide children as they compare fractions using region models. To demonstrate naming quantities greater than 1 with fractions and mixed numbers. To provide experiences with solving number stories involving fractions.</p>	<p>denominator, equal, equivalent fractions, mixed number, numerator, random draw, unit fraction, whole (the ONE)</p>	<p>Unit 8 Test, Math Boxes, Math Journal Pages, IXL Math</p>	<p>EM-U8, IXL Math, Additional resources</p>	<p>3.1.3.1, 3.1.3.2, 3.1.3.3, 3.3.3.2, 3.4.1.1</p>	<p>9</p>

U9 (February-March)	Multiplication and Division	<p>Can the student compare and order fractions? Can the student use strategies to compute multiplication facts? Can the student use and describe strategies to solve problems involving the multiplication of 2- and 3- digit numbers by 1-digit number? Can the student make reasonable estimates for whole-number addition and subtraction problems? Can the student use equal grouping to model division? Can the student describe and use strategies to measure the perimeter of polygons; count unit squares to find the areas of rectangles? Can the student recognize that numerical expressions can have different values depending on the order of operations?</p>	<p>To guide children as they multiply and divide with multiples of 10, 100, and 1,000. To guide children as they use mental math to multiply 1-digit numbers by multidigit numbers. To provide opportunities for children to model multiplication with base-10 blocks, explore area relationships, and find fractions of fractions. To guide children as they multiply 1-digit number by multidigit numbers using a partial-products algorithm. To guide children as they multiply using mental math and the partial-products algorithm. To guide children as they identify whole-number factors of whole numbers. To guide children as they share whole-dollar amounts equally. To guide children as they explore computational strategies for division and interpret remainders. To provide opportunities for children to explore 2-digit multiplication, number patterns, and the rigidity of triangles. To guide children as they extend the partial-products method to products of 2-digit numbers and 2-digit multiples of 10. To guide children as they extend the partial-products algorithm to products of any two 2-digit numbers. To guide children as they investigate positive and negative numbers.</p>	<p>algorithm, Celsius scale, <u>degrees Celsius, degrees Fahrenheit</u>, equilateral triangle, factors, Fahrenheit scale, partial-products algorithm</p>	<p>Unit 9 Test, Math Boxes, Math Journal Pages, IXL Math</p>	<p>EM-U9, IXL Math, Additional resources</p>	<p>3.1.2.5, 3.3.3.4</p>	<p>14</p>
U10 (March-April)	Measurement and Data	<p>Can the student solve problems involving fractional parts? Can the student use strategies to compute multiplication facts? Can the student use arrays, mental arithmetic, and paper-and-pencil algorithms to solve problems involving multiplication of 2- and 3- digit numbers by a 1-digit number? Can the student describe the strategies used? Can the student use data to create a line plot? Can the student complete a table with given data? Can the student find the median, mode, and mean for a set of data? Can the student answer simple questions and draw conclusions based on data landmarks? Can the student measure length to the nearest $\frac{1}{2}$ inch and $\frac{1}{2}$ centimeter? Can the student use strategies to measure the perimeter of a shape? Can the student describe relationships among units of length?</p>	<p>To provide a review of units, tools, and measuring length in U.S. customary and metric systems? To guide children as they explore the volume of rectangular prisms. To provide a review of metric and U.S. customary units of weight; and to guide children as they examine different kinds of scales and read weights on scales. To provide experiences ordering objects by volume, building rectangular prisms having the same volume but different dimensions, and measuring weight using various kinds of scales. To explore the concept of capacity; and to demonstrate equivalencies between measures of capacity. To introduce the mean of a set of data; and to review the median of a set of data. To guide children as they calculate the mean of a set of data; and to review the median of a set of data. To introduce the memory keys on a calculator. To guide children as they make frequency tables, and as they find the median, mean, and mode of data sets. To introduce plotting coordinates on coordinate grids.</p>	<p>average, capacity of a container, capacity of a scale, coordinate, coordinate grid, cubic centimeter, frequency table, height of a prism, mean, median, memory, memory keys, mode, ordered pair, plotting the point, precision, square centimeter, square inch, volume, weight</p>	<p>Unit 10 Test, Math Boxes, Math Journal Pages, IXL Math</p>	<p>EM-U10, IXL Math, Additional resources</p>	<p>3.1.3.1, 3.3.2.1, 3.3.2.2, 3.4.1.1</p>	<p>11</p>

U11 (April-May)	Probability; Year-Long Projects, Revisited	numbers? Can the student identify places and the value of digits in places in whole numbers up to 1,000,000? Can the student model fractions; solving problems involving fractional parts of collections and regions? Can the student describe the strategies used? Can the student make reasonable estimates? Can the student describe events using basic probability terms? Can the student predict the outcome of a simple experiment and test the prediction? Can the student describe relationships among units of time? Can	To guide children as they read and interpret line and bar graphs. To guide children as they organize, graph, and interpret data. To guide children as they collect and interpret data from spinner experiments with outcomes that are equally likely and not equally likely. To guide children as they represent the likelihood of outcomes with visual models. To guide children as they organize and analyze survey data; to predict outcomes; and to estimate the make-up of populations of people and objects.	autumnal equinox, summer solstice, vernal equinox, winter solstice	Unit 11 Test, Math Boxes, Math Journal Pages, EOY Test, STAR Math Test, IXL Math	EM-U11, IXL Math, Additional resources	3.1.1.1, 3.1.3.2, 3.3.3.1, 3.3.3.2, 3.4.1.1	6
(May - any extra time)	IXL Math, Math Projects	Have the students mastered their standards?	Individual needs will continue to be met.	Depends...	IXL Math, Games, Projects	IXL Math, Additional resources	Depends on individual student needs.	