

**Curriculum Map Grade 4 Mathematics**  
**for:**

**Prerequisites:** Completion of Grade 3

**Scope:** The process strands of problem solving, representation, communication, and connection lead to applications of math across the disciplines. At the core are number sense and operations involving numbers to 10,000, equivalent fractions, and decimals. Operations extend to fluency with 3-digit multiplication and division with remainders. Interwoven in the content are metric measurement and geometric relationships. Students collect data through surveys and experiments. Algebraic patterns and problem solving situations are explored.

**Assessment:**

Assessment comes in a variety of forms and wherever possible should be used to reflect and enhance the teaching and learning process that occurs in a classroom. Assessment should not be seen as a separate activity, but as an integral part of the teaching and learning process. Alternative assessments apply to any and all assessments that differ from multiple choice, timed, one-shot approaches that characterize most standardized and classroom assessment. Authentic assessments are assessments that engage students in applying knowledge and skills in the same way they are used in the real-world. Performance assessment is a broad term, encompassing many of the characteristics of both authentic and alternative assessments.

As this course of study demonstrates, it is clear that no single type of assessment could provide an accurate measurement of the learning experience. Students should have the best opportunity to demonstrate their understanding of the learning experience. Therefore, it is suggested that a variety of data gathering methods be used such as objective tests, observations, products, written reports, performances and a collection of student works.

This Curriculum Map:

This document contains four different columns available to the user. The **TIME** column offers a suggested timeline so that all topics in the **CONTENT/SKILLS** column are feasibly met. It is understood that times will need to be adjusted as the course develops. The mapping of content to present textbooks can occur in the **C/S** column. The **PERFORMANCE INDICATOR** column aligns topics in **C/S** with the NYS Standards. The **APPLICATION/PROJECT IDEAS** column is designed to offer unique or novel suggestions and sources for the teacher other than just their textbook. Mapping of content to present textbooks may also occur in this column. Discussions of different types of evaluation may also occur in this last column.

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>September</b>	Understanding Place Value	<b>4.N.1</b> Skip count by 1,000's <b>4.N.2</b> Read and write whole numbers to 10,000	SF-AW 1-1, 1-2 4.N.1a What is the next number in the pattern? 1295, 2295, 3295, _____ 4.N.1b Which number belongs in the blank: _____, 2295, 3295, 4295 4.N.1c What number is 1000 less than 5295?
	Exploring Place-Value Relationships	<b>4.N.4</b> Identify and use: 10 ones = 1 ten, 10 tens = 1 hundred, 10 hundreds = 1 thousand, 10 thousands = 1 ten thousand	SF-AW 1-3
	Problem Solving - Read and Understand	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems <b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	SF-AW 1-4
	Comparing & Ordering Numbers Using Symbols (<,>=) - Review Grade 3	<b>4.N.3</b> Use place value to compare numbers to 100,000	SF-AW 1-5

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>September</b>	Problem Solving - Plan and Solve	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 1-8
	Estimation Review Gr. 3 Exploring Rounding	<b>3.N.25</b> Estimate Numbers up to 500 <b>4.N. 26</b> Round Numbers less than 1,000 to the nearest tens and hundreds	SF-AW 1-6
	Making Change	<b>4.M.8</b> Make Change, using combined coins and dollar amounts	SF-AW 1-11
	Problem Solving - Look Back & Check	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 1-13
	Exploring Adding and Subtracting	<b>4.N.14</b> Use a variety of strategies to add and subtract numbers up to 10,000	SF-AW 2-1. 2-2
	Estimating Sums and Differences	<b>4.N.27</b> Check reasonableness of an answer by using estimation	SF-AW 2-3
<b>September</b>	Problem Solving - Exact or Estimate Review Grade 3	<b>3.N.26</b> Recognize real world situations in which an estimate (rounding) is more appropriate <b>4.N.27</b> Check Reasonableness of a answer by using estimation <b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	SF-AW 2-4

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
	Adding	<b>4.N.14</b> Use a variety of strategies to add and subtract numbers up to 10,000	SF-AW 2-5, 2-6

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>October</b>	Subtracting (inc. with middle zeros)	<b>4.N.14</b> Use a variety of strategies to add and subtract numbers up to 10,000	SF-AW 2-7
	Problem Solving - Choose an Operation	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems <b>4.PS.9</b> Use trial and error to solve problems <b>4.RP.8</b> Justify an argument by trying many cases	SF-AW 2-8
	Problem Solving - Look for a Pattern and translate words to number expressions	<b>4.A.5</b> Analyze a pattern or a whole-number function and translate to a number expression given a pattern, table, or word problem <b>4.PS.12</b> Use physical objects to model problems <b>4.PS.18</b> Analyze problems by observing patterns	SF-AW 2-9, 2-10
	Evaluate Expressions	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems <b>4.A.1</b> Evaluate and express relationships using open sentences with one operation	SF-AW 2-11, 2-12
	Solve Addition and Subtraction Equations	<b>4.A.3</b> Find the value or values that will make an open sentence true, if it contains < or >	SF-AW 2-13

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>October</b>	Real World Problem Solving	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 2-14
		<b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	
	Understanding Multiplication	<b>4.N.16</b> Understand various meanings of multiplication and division	SF-AW Chapter 3 Investigation
	Review Mulltiplication Grade 3	<b>3.N.19</b> Develop fluency with single-digit multiplication facts	SF-AW 3-1, 3-2
	Multiplying by 10,11, 12	<b>4.A.4</b> Describe, extedn, and make generalizations about numeric (+, -, x, /) and geometric patterns	SF-AW 3-4
	Problem Solving - Make a Table	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 3-5
	Understanding Division	<b>4.N.16</b> Understand various meanings of multiplication and division	SF-AW 3-6
	Understanding Multiplication and Division as Inverse Operations	<b>4.N.17</b> Use multiplication and division as inverse operations to solve problems	SF-AW 3-7
<b>October</b>	Writing and Evaluating Expressions	<b>4.A.1</b> Evaluate and express relationships using open sentences with one operation	SF-AW 3-12

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
	Find a Rule	<b>4.N.5</b> Analyze a pattern or whole-number function and state the rule, given a table or an input/output box	SF-AW 3-13
	Problem Solving - Algebra, Solve for Unknown	<b>4.A.1</b> Evaluate and express relationships using open sentences with one operation	SF-AW 3-14

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>November</b>	Identifying and comparing units of time	Tell time to the nearest 1 minute and 5 minutes using analog and digital clocks, and identify times as A.M. or P.M. Convert among different units of time, and compare measurements of time.	SF-AW 4-1, 4-2
	Elapsed Time	<b>4.M.9</b> Calculate elapsed time in hours and half hours, not crossing A. M./P.M.	SF-AW 4-3
	Problem Solving - Writing to Compare	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 4-4
	Exploring the Calendar	<b>4.M. 10</b> Calculate elapsed time in days and weeks, using a calendar	SF-AW 4-5
	Pictographs	<b>4.S.6</b> Formulate conclusions and make predictions from graphs	SF-AW 4-6
	Bar Graphs	<b>4.S.3</b> Represent data using tables, bar graphs, and pictographs <b>4.S.5</b> Develop and make predictions that are based on data <b>4.CM.4</b> Organize and accurately label work	SF-AW 4-8, 4-11
	Graphing Ordered Pairs	<b>4.S.3</b> Represent data using tables, bar graphs, and pictographs	SF-AW 4-9

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>November</b>	Collection of Data Review Grade 3	<b>4.S.2</b> Collect Data using observations, survey, and experiments and record appropriately <b>4.S.1</b> Design investigations to address a question from given data	SF-AW 4-13
	Multiplying Multiples of 10	<b>4.N.20</b> Develop fluency in multiplying and dividing multiples of 10 and 100 up to 1,000	SF-AW 5-1
	Estimating Products	<b>4.N.27</b> Check reasonableness of an answer by using estimation	SF-AW 5-2
	Multiplication with Arrays	<b>4.N.18</b> Use a variety of strategies to multiply two-digit numbers by one-digit numbers (with and without regrouping)	SF-AW 5-4
	Multiplying 2-Digit Numbers	<b>4.N.18</b> Use a variety of strategies to multiply two-digit and three-digit numbers by one-digit numbers (with and without regrouping)	SF-AW 5-5
	Multiplying 3-Digit Numbers	<b>4.N.27</b> Check reasonableness of an answer by using estimation	SF-AW 5-6
	Problem Solving - Guess & Check	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 5-7

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>December</b>	Multiplying 3 Factors	<b>4.N.6</b> Understand, use, and explain the associative property of multiplication	SF-AW 5-10
	Problem Solving - Choose an Operation	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 5-11
	Multiplying Multiples of Ten	<b>4.N.19</b> Use a variety of strategies to multiply two-digit numbers by two-digit numbers (with and without regrouping ) <b>4.N.20</b> Develop fluency in multiplying and dividing multiples of 10 and 100 up to 1,000	SF-AW 6-1
	Estimating Products	<b>4.N.27</b> Check reasonableness of an answer by using estimation	SF-AW 6-2
	Using Arrays to Multiply	<b>4.N.19</b> Use a variety of strategies to multiply two-digit numbers by two-digit numbers (with and without regrouping)	SF-AW 6-3
	Make an Organized List	<b>4.PS.14</b> Make organized lists to solve numerical problems <b>4.PS.11</b> Make pictures/diagrams of problems	SF-AW 6-4

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>December</b>	Division Patterns	<b>4.N.20</b> Develop fluency in multiplying and dividing multiples of 10 and 100 up to 1,000	SF-AW 7-1
	Estimating Quotients	<b>4.N.27</b> Check reasonableness of an answer by using estimation	SF-AW 7-2
	Division with Remainders	<b>4.N.21</b> Use a variety of strategies to divide two-digit dividends by one-digit divisors (with and without remainders)	SF-AW 7-3, 7-4, 7-5
	Interpreting Remainders	<b>4.N.22</b> Interpret the meaning of remainders	SF-AW 7-6
	Zeros in the Quotient	<b>4.N.21</b> Use a variety of strategies to divide two-digit dividends by one-digit divisors with zeros in the quotient (with and without remainders)	SF-AW 7-8
	Problem Solving - Write a Number Sentence	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 7-10
	Divisibility Rules Even and Odd Numbers	<b>4.N.13</b> Develop an understanding of the properties of odd/even numbers as a result of multiplication	SF-AW 7-11

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>January</b>	Dividing by Multiples of 10	<b>4.N.20</b> Develop fluency in multiplying and dividing multiples of 10 and 100 up to 1,000	SF-AW 7-13
	Relating Solids and Plane Figures	<b>4.G.5</b> Define and identify vertices, faces, and edges of three-dimensional shapes	SF-AW 8-1
	Polygons	<b>4.G.1</b> Identify and name polygons, recognizing that their names are related to the number of sides and angles (triangle, quadrilateral, pentagon, hexagon, and octagon) <b>4.G.2</b> Identify points and line segments when drawing a plane figure	SF-AW 8-2, 8-4
	Lines, Line Segments, Rays, and Angles	<b>4.G.6</b> Draw and identify intersecting, perpendicular, and parallel lines <b>4.G.7</b> Identify points and rays when drawing angles <b>4.G.8</b> Classify angles as acute, obtuse, right, and straight	SF-AW 8-3
	Congruent Figures and Motions Review Grade 3	<b>3.G.2</b> Identify congruent and similar figures	SF-AW 8-6
	Similar Figures		SF-AW 8-8
	Symmetry		SF-AW 8-7

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>January</b>	Problem Solving - Writing to Describe	<b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	SF-AW 8-9
	Perimeter	<b>4.G.3</b> Find perimeter of polygons by adding sides	SF-AW 8-10
	Area	<b>4.G.4</b> Find the area of a rectangle by counting the number of squares needed to cover the rectangle	SF-AW 8-11
		<b>4.PS.5</b> Formulate problems and solutions from everyday situations	
	Volume		SF-AW 8-13
	Fractions as Parts of a Region - Review Grade 3	<b>3.N.14</b> Explore equivalent fractions ( $\frac{\_}{\_}$ , $\frac{\_}{\_}$ , $\frac{\_}{\_}$ )	SF-AW 9-1
	Fractions as Parts of a Set	Identify fractional parts of sets or groups and divide sets to show fractions parts	SF-AW 9-2
Fractions on a Number Line	<b>3.N.15</b> Compare and order unit fractions ( $\frac{1}{2}$ , $\frac{1}{3}$ , $\frac{1}{4}$ ) and find their approximate locations on a number line <b>3.A.1</b> Use the symbols $<$ , $>$ , $=$ to compare unit fractions (with and without the use of a number line)	SF-AW 9-3	

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January	Estimating Fractional Parts	<b>4.N.7</b> Develop an understanding of fractions as locations on number lines and as divisions of whole numbers	SF-AW 9-4
	Problem Solving - Draw a Picture	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 9-5
	Equivalent Fractions - Review Grade 3	<b>4.N.8</b> Recognize and generate equivalent fractions (halves, fourths, thirds, fifths, sixths, and tenths) using manipulatives, visual models, and illustrations	SF-AW 9-6
	Cuxtomary Units of Length	<b>4.M.2</b> Use a ruler to measure to the nearest standart unit (whole, 1/2 and 1/4 inches, whole feet, whole yards)	SF-AW 10-7, 10-8
	Customary Units of Capacity	<b>4.M.6</b> Select tools and units appropriate to the capacity being measured	SF-AW 10-9

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>February</b>	Customary Units of Weight	<b>4.M.4</b> Select tools and units appropriate to the mass of the object being measured (ounce, pound, ton)	SF-AW 10-10
	Problem Solving - Changing Units and Comparing Measures	<b>4.M.3</b> Know and understand equivalent standard units of length: 12 inches = 1 foot; 3 feet = 1 yard	SF-AW 10-11, Ch. 10 Investigation
	Metric Units of Length	<b>4.M.1</b> Select tools and units appropriate for the Measurement length being measured <b>4.M.2</b> Use a ruler to measure to the nearest standard unit (whole centimeters, and whole meters)	SF-AW 11-9
	Metric Units of Capacity	<b>4.M.7</b> Measure capacity, using milliliters and liters	SF-AW 11-10
	Metric Units of Mass	<b>4.M.4</b> Select tools and units appropriate to the mass of the object being measured (grams and kilograms)	SF-AW 11-11, Ch. 11 Investigations
	Problem Solving - Changing Units and Comparing Measures	<b>4.M.3</b> Know and understand equivalent Metric units of length <b>4.M.5</b> Measure mass, using grams	SF-AW 11-12
	Review for State Assessment Examination		

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>March</b>	Using Money to Understand Decimals	<p><b>4.N.11</b> Read and write decimals to hundredths, using money as a context</p> <p><b>4.N.12</b> Use concrete materials and visual models to compare and order decimals (less than 1) to the hundredths place in the context of money</p>	SF-AW 1-9
	Counting Money	<b>4.N.11</b> Read and write decimals to hundredths, using money as a context	SF-AW 1-10
	More About Decimals	<b>4.N.10</b> Develop an understanding of decimals as part of a whole	SF-AW 1-12
	Line Plots	<b>4.S.2</b> Collect Data using observations, survey, and experiments and record appropriately	SF-AW 4-7
	Line Graphs	<b>4.S.4</b> Read and interpret line graphs	SF-AW 4-10
	Median, Mode, Range		SF-AW 4-12
	Misleading Graphs		SF-AW 4-14

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>March</b>	Real World Problem Solving	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems <b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	SF-AW 4-15
	Multiplying with 2-Digit Numbers	<b>4.N.19</b> Use a variety of strategies to multiply two-digit numbers by two-digit numbers (with and without regrouping)	SF-AW 6-5
	Multiplying Greater Numbers		SF-AW 6-6
	Multiplying Money		SF-AW 6-8
	Problem Solving - Writing to Explain	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 6-9
	Problem Solving - Real World Problems	<b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	SF-AW 6-10
	Dividing Three-Digit Numbers		SF-AW 7-7
	Dividing Money Amounts		SF-AW 7-9

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
April	<p>Finding Averages</p> <p>Dividing with 2-digit Divisors</p> <p>Problem Solving - Real World Problems</p> <p>Fractions in Simplest Form</p> <p>Comparing &amp; Ordering Fractions</p> <p>Mixed Numbers and Improper Fractions</p>	<p><b>4.N.15</b> Select appropriate computational and operational methods to solve problems</p> <p><b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas</p> <p><b>4.N.9</b> Use concrete materials and visual models to compare and order unit fractions or fractions with the same denominator (with and without the use of a number line)</p> <p><b>4.A.2</b> Use the symbols <math>&lt;</math>, <math>&gt;</math>, <math>=</math>, and <math>\neq</math> (with and without the use of a number line) to compare whole numbers and unit fractions and decimals (up to hundredths)</p> <p><b>4.N.7</b> Develop an understanding of fractions as locations on number lines and as divisions of whole numbers</p>	<p>SF-AW 7-12</p> <p>SF-AW 7-14</p> <p>SF-AW 7-15</p> <p>SF-AW 9-7</p> <p>SF-AW 9-8, 9-9</p> <p>SF-AW 9-10</p>

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
April	Comparing Mixed Numbers		SF-AW 9-11
	Circle Graphs		SF-AW 9-12
	Problem Solving - Writing to Explain		SF-AW 9-13
	Problem Solving - Real World Problems		SF-AW 9-14
	Estimating Fraction Sums		SF-AW 10-1
	Adding Fractions with Like Denominators		SF-AW 10-2
	Adding Fractions with Unlike Denominators		SF-AW 10-3
	Subtracting Fractions with Like Denominators		SF-AW 10-4
Subtracting Fractions with Unlike Denominators	SF-AW 10-5		

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>May</b>	Problem Solving - Using Logical Reasoning	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 10-6
	Problem solving - Exact or Estimate	<b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	SF-AW 10-12
	Problem Solving - Real World Problems	<b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	SF-AW 10-13
	Decimals and Fractions	<b>4.N.11</b> Read and write decimals to hundredths, using money as a context	SF-AW 11-1
	Decimal Place Value	<b>4.N.11</b> Read and write decimals to hundredths, using money as a context	SF-AW 11-2
	Comparing & Ordering Decimals	<b>4.A.2</b> Use the symbols $<$ , $>$ , $=$ , and $\neq$ (with and without the use of a number line) to compare whole numbers and unit fractions and decimals (up to hundredths)	SF-AW 11-3
	Rounding Decimals	<b>4.A.2</b> Use the symbols $<$ , $>$ , $=$ , and $\neq$ (with and without the use of a number line) to compare whole numbers and unit fractions and decimals (up to hundredths)	SF-AW 11-4

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>May</b>	Adding & Subtracting Decimals	<b>4.N.27</b> Check reasonableness of an answer by using estimation <b>4.N.25</b> Add and subtract decimals to tenths and hundredths using a hundreds chart <b>4.N.24</b> Express decimals as an equivalent form of fractions to tenths and hundredths	SF-AW11-5, 11-6, 11-7
	Problem Solving - Solve a Simpler Problem	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 11-8
	Temperature		SF-AW 11-14
	Problem Solving - Real World Problems	<b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	SF-AW 11-15
	Inequalities on a Number Line	<b>4.N.15</b> Select appropriate computational and operational methods to solve problems	SF-AW 12-1
	Translating Words to Equations Equations and Graphs		SF-AW 12-2 SF-AW 12-3
	Problem Solving - Extra or Missing Information	<b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas	SF-AW 12-4
<b>May</b>	Understanding Probability		SF-AW 12-5
	Listing Outcomes		SF-AW 12-6

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
	Finding Probability		SF-AW 12-7

TIME	CONTENT / SKILLS	PERFORMANCE INDICATOR	APPLICATIONS / IDEAS
<b>June</b>	<p>Making Predictions</p> <p>Problem Solving - Working Backward</p> <p>Problem Solving - Real World Problems</p> <p><b>Year End Assessment</b></p>	<p><b>4.N.15</b> Select appropriate computational and operational methods to solve problems</p> <p><b>4.CN.1</b> Recognize, understand, and make connections in their everyday experiences to mathematical ideas</p>	<p>SF-AW 12-8</p> <p>SF-AW 12-9</p> <p>SF-AW 12-10</p>