MSAD #54 Math Curriculum

Content Area: Math
Unit: Number

Grade: Grade 3
MLR Span: 3-5

MLR Content Standard: **A: Number**
Students use numbers in everyday and mathematical contexts to quantify or describe phenomena, develop concepts of operations with different types of numbers, use the structure and properties of numbers with operations to solve problems, and perform mathematical computations. Students develop number sense related to magnitude, estimation, and the effects of mathematical operations on different types of numbers. It is expected that students use numbers flexibly, using forms of numbers that best match a situation. Students compute efficiently and accurately. Estimation should always be used when computing with numbers or solving problems.

*Assessment

Number	MLR Performance Indicators	MSAD #54 Objectives	Instructional Resources/Activities
Whole Number	1.Students understand and use number notation and place value to 10,000 in numerals.	Students will:	
	a.Read and write numbers up to 10,000 in numerals and words.	a1. read and write numbers up to 10,000 in numerals and words.	a1.Scott Foresman Lessons 1-2, 1-3, 1-4
		a2.compare, order and round numbers up to 10,000.	a2. Scott Foresman Lessons 1-7, 1-8, 1-10 a2.Teacher created materials Build Number Brain Teasers NCTM Lesson Create a House Number
	b.Recognize the place values of digits in numbers up to 10,000.	b1.identify the number of tens, hundreds, and thousands in a given number (tell how many groups of 10, 100, 1000 can be made given a number). b2.represent numbers in different ways using symbols (break numbers apart into place	b1-b3. Scott Foresman Lessons 1-2, 1-3, 1-4

		values, especially for mental computation) and objects (especially base-10 blocks) b3.round numbers to the nearest 10, 100, 1000 (focus on number line).	
	2.Students understand and use procedures to add and subtract whole numbers with up to four digits. a.Display an understanding of the base ten place value system.	Students will:	
	b.Use an operation appropriate to a given situation.	b1.recall facts automatically. b2.add and subtract 2-and 3- and 4-digit numbers using models (base-10 blocks, number lines), paper and pencil, and mental math.	b2.Scott Foresman Lessons Chapters 2-3 Teacher created materials Subtraction Games Addition/Subtraction Mini Lessons Daily Mental math TA Lessons for Addition & Subtraction Billy Goes Shopping p. 33 Money Comes, Money Goes p. 41
		b3.solve addition and subtraction problems (single- and multi-step), and model and explain solution strategies (see grid for problem types).	b3.Scott Foresman Lessons 3-1 to 3-4, 3-6 to 3-10, 3-12, 1-9, 1-12, 1-13, 3-4 TA Addition & Subtraction How Close to 1? P. 128 Comparing Storybooks p. 113 Use data and measurement contexts to develop problems for students to solve and justify.

			Teacher created materials Daily math problems booklet
		b4.use the inverse relationship between addition and subtraction to write related sentences, solve problems with missing numbers, and verify solutions.	b4.Scott Foresman Lesson 2-2 See standard 3 Algebra 3a.(2)
	3.Students understand and apply meanings of multiplication and division.	Students will:	
	a.Multiply single-digit numbers and divide using single-digit divisors and up to two-digit dividends (division facts only, but remainders may be present).	a-d: 1.understand the meaning of multiplication.	a-d: 1.Scotts Foresman Lessons 5-1, 5-2 TA Introducing Multiplication Circles and Stars Ch.2, p. 11 Amanda Bean's Amazing Dream p. 23
	b.Use an operation appropriate to a given situation. c.Recognize and use models for multiplication and division situations. d.Use multiple strategies for multiplication and division.	2.solve multiplication problems and write multiplication equations for given situations.	2. Scotts Foresman Lesson 5-3 Teacher created materials Daily Problems Booklet TA Introducing Multiplication Things That Come In Groups Ch. 1 p. 1 Multiplication Stories Ch. 4 p. 35 Which Has More? Ch. 5 p. 48 Billy Wins a Shopping Spree Ch. 6 p.5 9
		3.understand arrays as models for multiplication.	3.Teacher created materials Array Pictures TA Introducing Multiplication Candy Boxes Ch. 7, p.66 How Long? How Many? Ch. 8 p. 77

		4.know multiplication facts: • 0, 1, 2,5, 10 –automatic • 3, 4, 9 – understand • 6, 7, 8 – introduce	4.Teacher created materials Fact sheets Scott Foresman Lessons 5-6 to 5-7, 5-10, 5-11, 6-1 to 6-5
		5.understand the meaning of division.	5. Scott Foresman Lessons 7-1, 7-2 TA Introducing Division Sharing Money Ch. 1 p. 1 The Doorbell Rang Ch. 2 p. 8 Dividing Cookies Ch. 4 p. 37
		6.solve division problems and write division equations for given situations.	6.Teacher created materials Daily Problem Booklets
		7.learn division facts as the inverse of multiplication.	7. Scott Foresman Lessons 7-5 to 7-12
Rational Number	4.Students recognize, name, compare, illustrate, and use simple fractions.		
	a.Recognize, name, and illustrate fractions with denominators from two to ten. b.Recognize, name, and illustrate parts of a whole.	a1-b1. recognize, name, illustrate, and use fractions as parts of sets and as parts of a region.	a1-b1. Scott Foresman Lessons 9-1 to 9-3, 9-7, 9-8 NCTM Lessons: Fraction Region Unit Investigations Lessons Investigation 2: Pattern Block Cookies Sessions 1, 2, 4
	c.Compare and order fractions with like numerators or with like denominators.	c1.compare and order fractions with like numerals or with like denominators.	c1. Scott Foresman Lessons 9-4, 9-6 About Teaching Mathematics Wipeout Game p. 236 Investigations Lessons Investigation 2: Pattern Block Cookies Session 3

Real Number	No performance indicator.	d1.add and subtract money amounts in decimal form.	d1. Scott Foresman Lesson 3-12

MSAD #54 Math Curriculum

Content Area: Math
Unit: Data

Grade: Grade 3
MLR Span: 3-5

MLR Content Standard: **B: Data**
Students make measurements and collect, display, evaluate, analyze, and compute with data to describe or model phenomena and to make decisions based on data. Students compute statistics to summarize data sets and use concepts of probability to make predictions and describe the uncertainty inherent in data collection and measurement. It is expected that when working with measurements students: understand that most measurements are approximations and that taking repeated measurements reveals this variability; understand that a number with a unit is not a measurement, and that an appropriate unit must always be attached to a number to provide a measurement; understand that the precision and accuracy of a measurement depends on selecting the appropriate tools and units; and use estimation comparing measures to benchmarks appropriate to the type of measure and units.

*Assessment

Data	MLR Performance Indicators	MSAD #54 Objectives	Instructional Resources/Activities
Measurement and Approximation	1.Students understand and use measurement of time and temperature.	Students will:	
	a.Select appropriate tools and units for these measures.	a1.tell time in hours and minutes on an analog clock.	a1.Scott Foresman Lessons 4-1, 4-2
		a2.find elapsed time including using AM and PM	a2. Scott Foresman Lesson 4-3
		a3.measure and record temperatures in degrees C and degrees F.	a3-a4. Scott Foresman Lesson 12-6
		a4.read temperature from pictures of thermometers.	
	b.Solve and justify problems with these measures.	b1. solve and justify problems with these measures.	b1. Scott Foresman Lessons 4-1, 4-2, 4-3, 12-6
		c1.count money and solve problems involving money amounts.	c1.Scott Foresman Lessons 1-12, 1-13

Data Analysis	2.Students read, construct, and interpret bar graphs.	Students will: a1.read, construct, and interpret bar graphs.	a1.Scott Foresman Lessons 4-7, 4-12 Classroom activities and other content areas including reading (Scholastic News), Science, and Social Studies.
Probability	No performance indicator.		

MSAD #54 Math Curriculum

Content Area: Math
Unit: Geometry

Grade: Grade 3
MLR Span: 3-5

MLR Content Standard: **C: Geometry**
Students use measurement and observation to describe objects based on their sizes and shapes; model or construct two-dimensional and three-dimensional objects; solve problems involving geometric properties; compute areas and volumes based on object properties and dimensions; and perform transformations on geometric figures. When making or calculating measures students use estimation to check the reasonableness of results.

*Assessment

Geometry	MLR Performance Indicators	MSAD #54 Objectives	Instructional Resources/Activities
Geometric Figures	1.Students identify, describe and classify, familiar two-dimensional shapes.	Students will:	
	a.Describe and classify two-dimensional shapes according to the number of vertices and by number, length and shape of sides.	a1. describe and classify two-dimensional shapes according to the number of vertices and by number, length and shape of sides. (triangles, rectangles including squares, & trapezoids)	a1. Scott Foresman Lessons 8-7, 8-8 Navigations Geometry Gr. 3-5 Thinking About Triangles p. 15
	b.Know how to put shapes together and take them apart to form other shapes.	b1.investigate, describe, and reason about the results of subdividing, combining, and transforming shapes.	b1. Navigations Geometry Gr. 3-5 Build What I've Created p. 11 Puzzles With Pizzazz Navigations Problem Solving and Reasoning Gr. 3 Cut It Apart, Put It Together p. 19
	c.Identify edges, vertices, and right angles in two-dimensional shapes.	c1. identify edges, vertices, and right angles in two-dimensional shapes.	c1.Scott Foresman Lessons 8-7, 8-8
	d.Tell whether a given	d1. tell whether a given angle is	d1. Scott Foresman

	angle is greater or smaller than a right angle.	greater or smaller than a right angle.	Lesson 8-5
Geometric Measurement	2.Students understand how to find the distance around a figure. a.Calculate and measure the distance around a figure whose perimeter is comprised of straight edges.	Students will: a1. calculate and measure the distance around a figure whose perimeter is comprised of straight edges. Calculations to include whole inches, feet, yards, centimeters, and meters. a2.understand that recorded measurements include both a number and a unit.	a1-a2.Scott Foresman Lesson 8-11
Transformations	No performance indicator.		

MSAD #54 Math Curriculum

Content Area: Math
Unit: Algebra

Grade: Grade 3
MLR Span: 3-5

MLR Content Standard: **D: Algebra**
Students use symbols to represent or model quantities, patterns, and relationships and use symbolic manipulation to evaluate expressions and solve equations. Students solve problems using symbols, tables, graphs, and verbal rules choosing the most effective representation and converting among representatives.

*Assessment

Algebra	MLR Performance Indicators	MSAD #54 Objectives	Instructional Resources/Activities
Symbols and Expressions	1.Students use equivalent expressions to aid computation such knowing that 43 + 56 is the same as 40 + 3 + 50 + 6.	Students will: 1.use equivalent expressions to aid computation. Example: 25 + 28 = 25 + 25 + 3 39 + 47 = 39 + 1 + 46 50 – 26 = 50 – 25 – 1 83 – 27 = 83 – 20 – 7	1.Teacher created materials: Addition mini-lessons; Subtraction mini-lessons Daily Mental Math
Equations and Inequalities	2.Students find the unknown in simple equations (or open sentences) in the context of numbers and operations as described in Standard 2.1: Number* for this grade level such as: 3 + 5 = [ ] +3 3 + 9 = [ ] + 10 [ ] + ( ) = 10	Students will: 2.solve equations such as ___ = 9 + 6 29 + 5 = 30 + ___	2.Teacher created materials Daily Mental Math
Functions and Relations	3.Students understand arithmetic relationships among positive whole numbers. a.Use the inverse relationships between addition and	Students will: a1.understand, use and explain the commutative property of addition (ex: 3 + 39 = 39 + 3).	a1. Scott Foresman Lesson 2-1 NCTM Lesson:

	subtraction and between multiplication and division and the commutative laws of multiplication and addition to solve problems.		Create a House Number
		a2.understand, use and explain the inverse relationship of addition and subtraction (ex: to solve part-part-whole or missing addend problems).	a2.Scott Foresman Lesson 2-2
		a3.understand, use, and explain the commutative property of multiplication (ex: 4 x 2 = 2 x 4).	a3. Scott Foresman Lesson 5-2
		a4.understand, use, and explain the inverse relationship between multiplication and division (ex: 12 ÷ 4 = 3 because 3 x 4 = 12).	
	b.Be able to show that for whole numbers subtraction and division are not commutative and show that multiplication and addition are commutative.		b1. Scott Foresman Lessons 2-1, 5-2
	4.Students create, describe, explain and extend patterns with numbers and geometric objects.	4a.create, describe, explain, and extend patterns with numbers.	4a. Scott Foresman Lessons 1-9, 5-4 to 5-10, 6-6, 6-8, 6-10, 11-1, 11-13
		4b.use patterns and relationships to locate numbers on the hundred chart.	4b.Navigations Algebra 3-5 Hundred Board Wonders p. 9 TA Place Value Gr. 3 Patterns on the Hundred Chart
		4c.create, describe, explain, and extend patterns with geometric objects.	4c.Scott Foresman Lessons 1-3, 1-9, 3-5, 8-3 Navigations Algebra 3-5 Tiling a Patio p. 18

			20 Thinking Questions for Pattern Blocks: Question 1. How Many Blocks Will There Be? NCTM Lesson: Patterns That Grow (5 lessons)