

**Overarching Processes: Problem Solving, Reasoning,  
Connections, and Communication**

Content	Skills: students will . . .	Learning Goals: students will understand that . . .	Resources & Materials
<b>Number &amp; Operations</b>	<b>MLR Standard A:</b> 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.		
<b>Whole Numbers: Magnitude M(N&amp;O) 4-2</b>	Compare and order whole numbers to 999,999	The meaning of numerals in multiple-digit numbers depends on their positions.	<i>Investigations: Landmarks in the Thousands</i> (entire book)
	Read and write numbers to 999,999		Saxon Math: Lesson 51 & 52
<b>Place Value M(N&amp;O) 4-1</b>	Identify the place value of each digit to 999,999	Judgment of the reasonableness of a quantity is an important step in computation.	Saxon Math: Lesson 59
<b>Rational Numbers: Fractions &amp; Decimals M(N&amp;O) 4-1</b>	Identify the benchmark fractions $\frac{a}{2}$ , $\frac{a}{3}$ , $\frac{a}{4}$ , $\frac{a}{5}$ , $\frac{a}{6}$ , $\frac{a}{8}$ , $\frac{a}{10}$ as a part to whole relationship in area, set, or linear model, i.e., portion of a pie, portion of a group, or portion of a line.	A fraction is any part of a group, number (quantity), or whole.	<i>Investigations: Different Shapes, Equal Pieces</i> , #1 and 2 Saxon Math: Lessons 17, 40-1
	List equivalent fractions	Numbers can be written in different forms, depending on how they are being used, e.g. fractions/decimals.	Tom Sherston's info. on using pattern blocks; Saxon Math: Lessons 68 & 96

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	Add and subtract fractions with like denominators		<i>Investigations: Different Shapes, Equal Pieces - Investigation #3</i> Saxon Math: Lessons 91, 95-1, 102, 127
	Reduce fractions to simplest form		Saxon Math: Lesson #98 & 109
	Order and compare benchmark fractions		Suggestion: use visuals and/or manipulatives Saxon Math: Lessons 27, 28, 68, 69 & 88
<b>Rational Numbers: Fractions &amp; Decimals</b> M(N&O) 4-1	Read and write decimals to hundredths and tenths in the context of money	The meaning of numerals in multiple-digit numbers depends on their positions.	Saxon Math: Lessons 14 & 23
	Identify place value for decimals to the tenths and hundredths in the context of money	More digits in a number does not necessarily equate to a larger value.	<i>Investigations: Money, Miles and Large Numbers - Investigations #1, 2 &amp; 3;</i>
	Compare and order decimals to hundredths and hundredths in the context of money		
	Add and subtract decimals to hundredths		Saxon Math: Lessons 6, 8, 12, 13, 41, 66, 95-1
<b>Operations</b> M(N&O) 4-3	Add and subtract 4 digit numbers with regrouping		Saxon Math: Lesson 41
	By the end of the first quarter, fluently multiply and divide facts through 9		Otter Creek fact fluency; Saxon Math: Lessons # 105-1, 110-1, 115-2, 120-2, 135, 55-1, 60-1, 65-1, 105-2, & 110-2
	Convert a division problem into a repeated subtraction problem using whole numbers with no remainders	Multiplication and division are inverse operations for addition and subtraction	<i>Investigations: Arrays and Shares - Investigations 1 and 2</i>

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	Convert a multiplication problem into a repeated addition problem with whole numbers (Ex: $3 \times 4 = 3+3+3+3$ )		
	Multiply whole numbers, 2 digits by 1 digit and 2 digits by 2 digits, with and without regrouping		Saxon Math: Lessons 38, 49, 73, 80-1
	Divide whole numbers up to 4 digit dividends by 1 digit divisors with no remainder in the quotient		<i>Investigations: Arrays and Shares, #3</i> Saxon Math: Lessons 76, 77, 83, 84, 8, 90-1, 101 & 123
<b>M(N&amp;O) 4-4</b>	Solve problems involving multiple operations		
<b>Geometry &amp; Measurement</b>	<b>MLR Standard C:</b> 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.		
<b>Geometric Figures M(G&amp;M)4-1</b>	Identify and name angles as right, obtuse, or acute	Numbers and shapes help us to describe and predict the world around us.	Marilyn Burns Geometry Unit, Saxon Math: Lessons 65-1, 85-1, 108, 111, 121, 124, 131, 135
	Identify, describe, and distinguish among triangles, squares, rectangles, rhombi, trapezoids, hexagons, and octagons, based on numbers of angles	Patterns can be found in shapes.	Addison-Wesley Grade 4 text Saxon Math: Lessons 64, 71, 81, 82, 85-1, 86
	Identify lines as parallel or perpendicular		Saxon Math: Lesson 65-1

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<b>M(G&amp;M)4-3</b>	Identify, describe, and distinguish among triangles, squares, rectangles, rhombi, trapezoids, hexagons, and octagons, based on number of sides, length of sides, parallelism, or perpendicularity		Saxon Math: Lessons 64, 71, 81, 82, 85-1, 86
	Identify, compare, and describe 3 dimensional shapes based on the shape of the base and number of lateral faces (rectangular prisms, triangular prisms, cylinders, spheres)		<i>Investigations: Seeing Solids and Silhouettes - Investigation 2</i> Saxon Math: Lessons 113, 114
<b>Transformations Congruency M(G&amp;M)4-4</b>	Match congruent figures using flips, slides, or turns, and by composing or decomposing shapes using manipulatives	Symmetry can be found by flips, slides, and turns. Shapes can be compared in terms of concepts such as parallel and perpendicular, congruence and similarity, and symmetry.	<i>Investigations Flips, Slides &amp; Turns (Gr. 3)</i> Saxon Math: Lesson 47, 89
	Compare and contrast similar figures using scale and/or shape	Scale drawings show shapes and compare locations of things very different in size.	
<b>Measurement M(G&amp;M)4-6</b>	Calculate the perimeter of polygons using a formula, recording measurement in appropriate units	Measurement is incomplete without designating appropriate units of measure.	Formulas to refer to: Perimeter is the measurement of all sides of a polygon; Area of rectangle = length x height. Saxon Math: Lessons: 56, 57, 82, 103

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	<p>Calculate the area of rectangles using a formula, recording measurement in appropriate units</p>	<p>When people care about what is being counted or measured, it is important for them to say what the units are.</p>	<p>Measurement benchmarks:                  Length -- inch (to 1/4 inch); foot; centimeter (to .5 cm); meter; yard; mile; kilometer                  Time -- hour (to 1 minute interval); day; year;                  Equivalencies: 24 hours in 1 day; 7 days in 1 week; 365 days in 1 year; 60 seconds in 1 minute; 60 minutes in 1 hour                  Temperature -- C and F (to 1 degree)                  Capacity -- quart                  Mass -- kilogram; gram                  Weight -- pound</p>
	<p>Calculate the area of polygons or irregular shapes on grids using a variety of models or manipulates, recording measurement in appropriate units</p>	<p>Some units of measure are more appropriate for a given situation than others, e.g., we measure a football field in yards, not inches.</p>	
	<p>Measure and use units of measures appropriately and consistently, and make conversions within systems when solving problems</p>	<p>Conversion of units of measurement within systems helps us solve measurement problems.</p>	

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<b>Functions &amp; Algebra</b>			
<b>MLR Standard D:</b> 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 representations.			
<b>M(F&amp;A)4-1</b>	Identify and extend a variety of linear and nonlinear patterns	Tables and graphs can show how values of one quantity are related to values of another.	Saxon Math: Lessons 9, 20-2, 60-1, 61
	Write a <b>rule</b> in words or symbols to describe a pattern and the next step in the pattern		Saxon Math: Lessons 105-1, 133
<b>M(F&amp;A)4-3</b>	Solve for the unknown (represented in letters or symbols) in a simple linear equation involving any one of the four operations (for example, $7 + k = 13$ or $7 + \square = 13$ or the flower petal pattern)	Mathematical statements using symbols may be true only when the symbols are replaced by certain numbers.	Saxon Math: Lessons 9, 31. 45-1

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<b>Data, Statistics, &amp; Probability</b>	<u>MLR Standard B:</u> 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.		
<b>Data Analysis M(DSP)4-1</b>	Read and interpret tables, line plots, bar graphs and circle graphs to answer questions about the data	Representing data on graphs tells us different things about the data.	<i>Investigations: The Shape of the Data</i> - all (excluding Inv. 3, Sess. 3, 4 5)
	Read and interpret tables, line plots, bar graphs and circle graphs to use the data to formulate or justify conclusions, to make predictions, and/or to solve problems		
<b>Measures of Central Tendency M(DSP)4-1-2</b>	Use median, mode, and/or range to answer questions about data	Median, mode, and range tell us different things about the middle and spread of a data set.	<i>Investigations: The Shape of the Data</i> , Investigation 2, Session 1 & 5 Saxon Math: Lessons 20-1, 90-1. 104, 112
<b>Patterns M(DSP)4-2</b>	Given one or more sets of objects, determine how many possible combinations can be made using a variety of strategies	Patterns help us solve problems.	
<b>Probability</b>	Describe the probability of an event using the terms likely, unlikely, impossible, or certain	Events can be described in terms of being more or less likely, impossible, or certain.	Marilyn Burns Probability Unit Saxon Math: Lessons 100-1, 115-1
	Express the probability of a result of an event as part to whole (e.g., two out of five)		<i>Investigations: Money, Miles &amp; Large Numbers:</i> Ten-Min. Math "Likely or Unlikely" p58-59