

## MSAD #54 Math Curriculum

Content Area: Math  
Unit: Number

Grade: Grade 6  
MLR Span: 6-8

**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
<b>Whole Number</b>	<p>1. Students use factors and multiples.</p> <p>a. Identify prime numbers and composite numbers and use their properties to solve problems.</p> <p>b. Use the property that every integer greater than one is a prime number or can be written as a unique product of prime numbers.</p> <p>c. Interpret and use exponential notation as repeated multiplication.</p> <p>d. Find the least common multiple and greatest common factor of two numbers.</p>	<p>Students will:</p> <p>a1. identify prime numbers and composite numbers and use their properties to solve problems.</p> <p>b1. use the property that every integer greater than one is a prime number or can be written as a unique product of prime numbers.</p> <p>c1. interpret and use exponential notation as repeated multiplication.</p> <p>d1. find the least common multiple and greatest common factor of two numbers.</p>	<p>a1. <u>Scott Foresman</u> Lessons 3-1, 3-2</p> <p>b1. <u>Scott Foresman</u> Lessons 3-3, 3-4</p> <p>c1. <u>Scott Foresman</u> Lesson 1-2</p> <p>d1. <u>Scott Foresman</u> Lessons 3-3, 3-4</p>

<p><b>Rational Number</b></p>	<p>2. Students express fractions greater than 0 as decimals and compare positive numbers that are written as fractions and decimals and place them on the number line.</p>	<p>Students will:</p> <p>2a. express fractions greater than 0 as decimals and compare positive numbers that are written as fractions and decimals and place them on the number line.</p> <p>2b. round decimals</p> <p>2c. estimate with decimals</p>	<p>2a. <u>Scott Foresman</u> Lessons 2-1, 2-2, 3-6 to 3-11 Teaching Arithmetic Lessons for Decimals and Percents Ch. 11 &amp; 12</p> <p>2b. <u>Scott Foresman</u> Lesson 2-3</p> <p>2c. <u>Scott Foresman</u> Lesson 2-4</p>
	<p>3. Students add, subtract, multiply, and divide numbers expressed as fractions and as decimals including mixed number.</p>	<p>Students will</p> <p>3. add, subtract multiply and divide numbers expressed as fractions, including mixed numbers, and as decimals.</p>	<p>3. <u>Scott Foresman</u> Lessons 2-5 to 2-10, 4-1, 4-2, 4-4 to 4-7, 5-1 to 5-4, 5-6, 5-7 TA Decimals and Percents Ch. 7 &amp; 8 TA Multiplying and Dividing Fractions Ch. 1-5, 7-10</p>
	<p>4. Students understand how to express relative quantities as percentages and as decimals and fractions.</p> <p>a. Use ratios to describe relationships between quantities.</p> <p>b. Use decimals, fractions, and percentages to express relative quantities.</p> <p>c. Interpret relative quantities expressed as decimals, fractions,</p>	<p>Students will:</p> <p>a1. use ratios to describe relationships between quantities.</p> <p>b1. use decimals, fractions, and percentages to express relative quantities.</p> <p>c1. interpret relative quantities expressed as decimals, fractions, and percentages.</p>	<p>a1. <u>Scott Foresman</u> Lessons 6-1 to 6-7 <u>Navigations</u> Measurement 6-8 Best Buy p. 70</p> <p>b1- c1. <u>Scott Foresman</u> Lessons 3-6 to 3-11, 7-1, 7-2, 7-4 to 7-6 TA Decimals &amp; Percents Ch. 9 to 12</p>

	<p>and percentages.</p> <hr/> <p>5. Students multiply and divide decimals with up to three decimal places by tens, hundreds, and thousands.</p>	<p>Students will:</p> <p>5. multiply and divide decimals with up to three decimal places by tens, hundreds, and thousands.</p> <p>6. understand, compare, and order integers and rational numbers.</p> <p>7. review, reinforce, and extend whole number concepts.</p> <p>7a. comparing &amp; ordering</p> <p>7b. rounding</p> <p>7c. estimating sums and differences</p> <p>7d. estimating products and quotients</p> <p>7e. order of operations</p> <p>7f. using the distributive property</p> <p>7g. mental math strategies</p> <p>7h. problem solving strategies</p> <p>7i. basic facts (automatic)</p>	<hr/> <p>5. <u>Scott Foresman</u> Lesson 2-10 (positive powers of 10 only)</p> <p>6. Scott Foresman Lessons 8-1 to 8-3, 8-11</p> <p>7. <u>Scott Foresman</u> Lessons:</p> <p>7a. 1-3</p> <p>7b. 1-4</p> <p>7c. 1-5</p> <p>7d. 1-6</p> <p>7e. 1-8</p> <p>7f. 1-10</p> <p>7g. 1-11</p> <p>7h. 1-12</p>
<p><b>Real Number</b></p>	<p>1. No performance indicator.</p>		

## MSAD #54 Math Curriculum

Content Area: Math  
Unit: Data

Grade: Grade 6  
MLR Span: 6-8

### 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

<b>Data</b>	<b>MLR Performance Indicators</b>	<b>MSAD #54 Objectives</b>	<b>Instructional Resources/Activities</b>
<b>Measurement and Approximation</b>	<p>1. Students convert within measurement systems.</p> <p>a. Solve problems where different units are used within the metric and traditional systems of measurement.</p>	<p>Students will:</p> <p>a1. solve problems where different units are used within the metric and traditional systems of measurement. Conversions to include:                      -in-ft-yd                      -oz-lb, lb-tons                      -oz-cups-pints-qts-gals                      -sec-min, min-hrs                      -mm-cm-m, m-km                      -g-kg                      -ml-l</p>	<p>a1. <u>Scott Foresman</u> Lessons 10-1, 10-2</p>
<b>Data Analysis</b>	<p>2. Students read and interpret pie charts.</p>	<p>Students will:</p> <p>2a. read and interpret pie charts.</p> <p>Students will:</p>	<p>2a. <u>Scott Foresman</u> Lesson 11-7</p>

	<p>3.Students find and compare the mean, median, mode, and range for sets of data.</p>	<p>3a. find and compare the mean, median, mode, and range for sets of data.</p>	<p>3a.<u>Scott Foresman</u> Lessons 11-1, 11-2 <u>Navigations</u> Data Analysis and Probability 6-8 Making the Data pp.26-28 Classroom Climate pp.46-48</p>
<p><b>Probability</b></p>	<p>No performance indicator. 4.Although no performance indicators are stated, students are expected to have experiences with probability in grade 6, but it is not expected that the knowledge will be secure.</p>	<p>Students will:</p> <p>4a.understand that the probability of an event happening is the ratio of the number of times the event can occur to the total number of possible outcomes.</p> <p>4b.express probabilities as fractions.</p> <p>4c.compare probabilities.</p>	<p>4a-c. <u>Scott Foresman</u> Lessons 11-12, 11-13 <u>Navigations</u> Probability 6-8 Ch. 1</p>

## MSAD #54 Math Curriculum

Content Area: Math  
Unit: Geometry

Grade: Grade 6  
MLR Span: 6-8

### 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

<b>Geometry</b>	<b>MLR Performance Indicators</b>	<b>MSAD #54 Objectives</b>	<b>Instructional Resources/Activities</b>
<b>Geometric Figures</b>	<p>1. Students represent solid figures in two dimensions.</p> <p>a. Represent cubes, prisms, and square-based or triangular-based pyramids using nets.</p> <p>b. Recognize and classify solids presented in picture views.</p> <p>c. Sketch three-dimensional figures.</p>	<p>Students will:</p> <p>a1. represent cubes, prisms, and square-based or triangular-based pyramids using nets.</p> <p>b1. recognize and classify solids presented in picture views.</p>	<p>a1 – b1. <u>Scott Foresman</u> Lesson 10-14</p> <p>Art Lessons: Drawing side, front and top views of block figures Drawing perspective views of block figures</p>
<b>Geometric Measurement</b>	<p>2. Students find the perimeters and areas of geometric figures.</p> <p>a. Triangles</p> <p>b. Quadrilaterals</p>	<p>Students will:</p> <p>a1. find the perimeter and area of triangles.</p> <p>b1. find the perimeter and area of quadrilaterals.</p>	<p>a1-b1. <u>Scott Foresman</u> Lessons 9-7, 9-8, 10-7 &amp; 10-9 <u>Navigations</u> Measurement 6-8 Seeing is Believing p. 32 Piecing Ideas Together p. 35</p>

	<p>c.Circles</p>	<p>c1. find the perimeter and area of circles.</p>	<p>c1. <u>Scott Foresman</u> Lessons 9-9, 10-11 &amp; 10-12 <u>Navigations</u> Measurement 6-8 Going in Circles, p. 37</p>
<p><b>Transformations</b></p>	<p>3.Students find the volume and surface areas of right prisms with bases that are triangles and quadrilaterals.</p>	<p>Students will: 3. find the volume and surface areas of right prisms with bases that are triangles and quadrilaterals.</p>	<p>3.<u>Scott Foresman</u> Lessons: 10-15, 10-16 (except cylinders and pyramids)</p>
	<p>4.Students understand and use reflections, rotations, and translations to define and identify congruent plane figures.</p>	<p>Students will:</p>	
	<p>a.Apply the understanding that if a plane figure can be laid on top of another plane figure by rotations, translations, or reflections then the figures are congruent.</p>	<p>a1. apply the understanding that if a plane figure can be laid on top of another plane figure by rotations, translations, or reflections then the figures are congruent.</p>	<p>a1. <u>Scott Foresman</u> Lessons 9-10 to 9-13 <u>Navigations</u> Geometry 6-8 Reflection of Images p.45 Translations, Reflections, and Rotations p. 46</p>
	<p>5.Students understand how to use proportional relationships to make indirect linear measurements an use scale drawings to make linear measurements.</p>	<p>Students will: 5a. understand how to use proportional relationships to make indirect linear measurements an use scale drawings to make linear measurements.</p>	<p>5a. <u>Scott Foresman</u> Lessons 6-5 to 6-7, 6-10, 9-10 <u>Navigations</u> Geometry 6-8 Exploring Similar Figures p. 19 Similarity and the Coordinate Plane p. 38 Using Scale Factors p. 48 <u>Navigations</u> Measurements 6-8 Squareness p. 50 Finding Heights p. 55</p>

			(make indirect linear measurements) Teacher, I Shrank My Room p. 60
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## MSAD #54 Math Curriculum

Content Area: Math  
Unit: Algebra

Grade: Grade 6  
MLR Span: 6-8

### 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

<b>Algebra</b>	<b>MLR Performance Indicators</b>	<b>MSAD #54 Objectives</b>	<b>Instructional Resources/Activities</b>
<b>Symbols and Expressions</b>	<p>1. Students create and evaluate expressions.</p> <p>a. Create and evaluate expressions using whole numbers.</p> <p>b. Create and evaluate expressions using positive fractions including decimals.</p>	<p>Students will:</p> <p>a1. create and evaluate expressions using whole numbers.</p> <p>b1. create and evaluate expressions using positive fractions including decimals.</p>	<p>a1. <u>Scott Foresman</u> Lesson 1-13</p> <p>b1. <u>Scott Foresman</u> Lessons 2-13, 5-8, 5-9, 12-4</p>
<b>Equations and Inequalities</b>	<p>2. Students recognize and solve problems involving linear equations and recognize examples and non-examples of linear equations.</p> <p>a. Solve equations of the form <math>ax +/-b = c</math> where <math>a</math>, <math>b</math>, and <math>c</math> are whole numbers.</p> <p>b. Recognize from a table whether a relationship has a constant rate of</p>	<p>Students will:</p> <p>a1. solve equations of the form <math>ax +/-b = c</math> where <math>a</math>, <math>b</math>, and <math>c</math> are whole numbers.</p> <p>b1. recognize from a table whether a relationship has a constant rate of change.</p>	<p>a1. <u>Scott Foresman</u> Lessons 1-15, 12-5 (except for examples where <math>a</math> is negative, as in p.715 C extensions) Teacher created materials Solving Equation</p> <p>b1. <u>Navigations</u> Algebra 6-8 Exploring Houses p. 9 Building With Toothpicks</p>

	change.		<p>p. 13  Missing Values p. 39  Stacking Cups p. 39  Walking Rates p. 44  Pledge Plans p. 46</p>
<p><b>Functions and Relations</b></p>	<p>3.Students use tables, formulas, diagrams, and graphs to analyze relationships between quantities.</p> <p>a.Use tables, formulas, and graphs to analyze constant difference (additive) relationships.</p> <p>b.Use tables, formulas, and graphs to analyze constant ratio (multiplicative) relationships.</p>	<p>Students will</p> <p>a1. recognize from a table whether a relationship has a constant rate of change. (eg. <math>y = x +/- 6</math>)</p> <p>b1. use tables, formulas, and graphs to analyze constant ratio (multiplicative) relationships. (eg. <math>y = a x +/- b</math>)</p>	<p>a1-b1. <u>Scott Foresman</u> Lessons 6-6 Ch. 12 Activity 1 p.696I &amp; Activity 2, p. 696J 12-6  Teacher created materials Block Building Patterns <u>Navigations</u> Algebra 6-8 Exploring Houses p. 9 Building with Toothpicks p. 13  Missing Values p. 39  Stacking Cups p. 41  Walking Rates p. 44  Pledge Plans p. 46</p> <p>Note:  a1.Examples might include a student’s age compared with a sibling. It’s always the same difference no matter their ages.</p> <p>b1.Examples might include the number of legs compared to the number of insects (x 6) or the number of quarters to the number of dollars (x 4).</p>