



Mathematics

Applications and Concepts

Course 2

© 2006

B. Number Operations and Relationships Grade 7

MPS Learning Target #1 (Grade 7)	MPS Learning Target #2 (Grade 7)
Represent, rename, compare, and identify equivalent forms of fractions, decimals, and percents using place value and number theory concepts.	Estimate and justify solutions to problems with and without context involving whole numbers, integers, and rational numbers, including applications of proportional reasoning.
Descriptors Concepts: 1, 2, 3, 4, 5, 6	Descriptors Concepts: 6 Computation: 8, 9, 10, 11, 12, 13, 14

Wisconsin Sub-skill Descriptors (Beginning of Grade 8)	
<i>Sub-skill B.a: Concepts</i>	
Student Edition: <i>Prerequisite Skills</i> 555 <i>Quick Review Math Handbook Book 2</i> 72-74, 124-126	1) Recognize and apply place-value concepts to numbers less than 100,000,000 with decimals to the thousandths place.

<p>Student Edition: <i>Lesson 5-4 Fractions and Decimals</i> <i>Lesson 5-5 Fractions and Percents</i> <i>Lesson 5-6 Percents and Decimals</i> <i>Lesson 5-8 Comparing and Ordering Rational Numbers</i> <i>Lesson 6-1 Estimating with Fractions</i> <i>Lesson 7-5 Fractions, Decimals, and Percents</i></p> <p>Teacher Wraparound Edition: <i>Lesson 5-4 Fractions and Decimals</i> <i>Lesson 5-5 Fractions and Percents</i> <i>Lesson 5-6 Percents and Decimals</i> <i>Lesson 5-8 Comparing and Ordering Rational Numbers</i> <i>Lesson 6-1 Estimating with Fractions</i> <i>Lesson 7-5 Fractions, Decimals, and Percents</i></p> <p>Quick Review Math Handbook Book 2 72-74, 78, 100-103, 106-107, 124-126, 138-139, 178-179</p>	<p>2) Read, write, and represent numbers using words, numerals, number lines, arrays, and expanded form ($12.09 = 10 + 2 + 0.09$) and symbolic renaming ($12.09 = 13 - 0.91$).</p>
<p>Student Edition: <i>Lesson 5-8 Comparing and Ordering Rational Numbers</i> <i>Prerequisite Skills 556</i></p> <p>Teacher Wraparound Edition: <i>Lesson 5-8 Comparing and Ordering Rational Numbers</i></p> <p>Quick Review Math Handbook Book 2 110-112, 127-128</p>	<p>3) Compare and order a set of fractions or decimals (to the hundredths place) and use symbols ($<$, $>$, $=$, \neq).</p>

<p>Student Edition: <i>Lesson 5-1 Prime Factorization</i> <i>Lesson 5-1a Hands-On Lab</i> <i>Lesson 5-2 Greatest Common Factor</i> <i>Lesson 5-7 Least Common Multiple</i> <i>Prerequisite Skills 554</i></p> <p>Teacher Wraparound Edition: <i>Lesson 5-1 Prime Factorization</i> <i>Lesson 5-1a Hands-On Lab</i> <i>Lesson 5-2 Greatest Common Factor</i> <i>Lesson 5-7 Least Common Multiple</i></p> <p>Quick Review Math Handbook Book 2 83-87, 89, 104-106</p>	<p>4) Identify and use number theory concepts:</p> <ul style="list-style-type: none"> • Prime and composite numbers • Divisibility potential of numbers (divisors of 1-10, 25, and multiples of 10). • Least common multiples • Greatest common factor of two numbers
<p>Student Edition: <i>Lesson 5-5 Fractions and Percents</i> <i>Lesson 7-7 Percent of a Number</i> <i>Lesson 7-8a Hands-On Lab</i> <i>Lesson 8-2 Algebra: The Percent Equation</i> <i>Lesson 8-4 Percent of Change</i> <i>Lesson 8-5 Sales Tax and Discount</i> <i>Lesson 8-6 Simple Interest</i> <i>Lesson 8-6b Spreadsheet Investigation</i></p> <p>Teacher Wraparound Edition: <i>Lesson 5-5 Fractions and Percents</i> <i>Lesson 7-7 Percent of a Number</i> <i>Lesson 7-8a Hands-On Lab</i> <i>Lesson 8-2 Algebra: The Percent Equation</i> <i>Lesson 8-4 Percent of Change</i> <i>Lesson 8-5 Sales Tax and Discount</i> <i>Lesson 8-6 Simple Interest</i> <i>Lesson 8-6b Spreadsheet Investigation</i></p> <p>Quick Review Math Handbook Book 2 100-103, 139, 142-148, 150, 152-153</p>	<p>5) Demonstrate understanding of fractions and percents with and without contexts (e.g., sales tax and discounts, 40 is 25 percent of what number?; What number is 25 percent of 160?)</p>

<p>Student Edition: <i>Lesson 7-1 Ratios</i> <i>Lesson 7-2 Rates</i> <i>Lesson 7-3 Algebra: Solving Proportions</i> <i>Lesson 7-3b Hands-On Lab</i> <i>Lesson 7-4 Geometry: Scale Drawings</i> <i>Lesson 7-4b Spreadsheet Investigation</i> <i>Lesson 7-7 Percent of a Number</i> <i>Lesson 7-8 The Percent Proportion</i> <i>Lesson 10-6 Similar Figures</i></p> <p>Teacher Wraparound Edition: <i>Lesson 7-1 Ratios</i> <i>Lesson 7-2 Rates</i> <i>Lesson 7-3 Algebra: Solving Proportions</i> <i>Lesson 7-3b Hands-On Lab</i> <i>Lesson 7-4 Geometry: Scale Drawings</i> <i>Lesson 7-4b Spreadsheet Investigation</i> <i>Lesson 7-7 Percent of a Number</i> <i>Lesson 7-8 The Percent Proportion</i> <i>Lesson 10-6 Similar Figures</i></p> <p>Quick Review Math Handbook Book 2 292-294, 408</p>	<p>6) Apply proportional reasoning to a variety of problem situations (e.g., comparisons, rates, and similarities).</p>
<p>Student Edition: <i>Lesson 5-4 Fractions and Decimals</i> <i>Lesson 5-5 Fractions and Percents</i> <i>Lesson 5-6 Percents and Decimals</i> <i>Lesson 5-8 Comparing and Ordering Rational Numbers</i> <i>Lesson 7-5 Fractions, Decimals, and Percents</i></p> <p>Teacher Wraparound Edition: <i>Lesson 5-4 Fractions and Decimals</i> <i>Lesson 5-5 Fractions and Percents</i> <i>Lesson 5-6 Percents and Decimals</i> <i>Lesson 5-8 Comparing and Ordering Rational Numbers</i> <i>Lesson 7-5 Fractions, Decimals, and Percents</i></p> <p>Quick Review Math Handbook Book 2 142-143, 152-157</p>	<p>7) Identify equivalent forms of fractions, decimals, and percents.</p>

Sub-skill B.b: Computation

Student Edition:

Lesson 1-1 A Plan for Problem Solving
Lesson 1-3 Order of Operations
Lesson 3-4 Adding Integers
Lesson 3-4a Hands-On Lab
Lesson 3-5 Subtracting Integers
Lesson 3-5a Hands-On Lab
Lesson 3-6 Multiplying Integers
Lesson 3-7 Dividing Integers
Lesson 6-2 Adding and Subtracting Fractions
Lesson 6-3 Adding and Subtracting Mixed Numbers
Lesson 6-4 Multiplying Fractions and Mixed Numbers
Lesson 6-6 Dividing Fractions and Mixed Numbers

Teacher Wraparound Edition:

Lesson 1-1 A Plan for Problem Solving
Lesson 1-3 Order of Operations
Lesson 3-4 Adding Integers
Lesson 3-4a Hands-On Lab
Lesson 3-5 Subtracting Integers
Lesson 3-5a Hands-On Lab
Lesson 3-6 Multiplying Integers
Lesson 3-7 Dividing Integers
Lesson 6-2 Adding and Subtracting Fractions
Lesson 6-3 Adding and Subtracting Mixed Numbers
Lesson 6-4 Multiplying Fractions and Mixed Numbers
Lesson 6-6 Dividing Fractions and Mixed Numbers

Quick Review Math Handbook Book 2

88, 119, 123, 129, 155, 158, 159

8) Use all operations in everyday situations to solve single or multi-step word problems.

<p>Student Edition: <i>Lesson 5-5 Fractions and Percents</i> <i>Lesson 5-6 Percents and Decimals</i> <i>Lesson 7-5 Fractions, Decimals, and Percents</i> <i>Lesson 7-7 Percent of a Number</i> <i>Lesson 7-8 The Percent Proportion</i> <i>Lesson 8-4 Percent of Change</i> <i>Lesson 8-5 Sales Tax and Discount</i> <i>Lesson 8-6 Simple Interest</i> <i>Lesson 8-6b Spreadsheet Investigation</i></p> <p>Teacher Wraparound Edition: <i>Lesson 5-5 Fractions and Percents</i> <i>Lesson 5-6 Percents and Decimals</i> <i>Lesson 7-5 Fractions, Decimals, and Percents</i> <i>Lesson 7-7 Percent of a Number</i> <i>Lesson 7-8 The Percent Proportion</i> <i>Lesson 8-4 Percent of Change</i> <i>Lesson 8-5 Sales Tax and Discount</i> <i>Lesson 8-6 Simple Interest</i> <i>Lesson 8-6b Spreadsheet Investigation</i></p> <p>Quick Review Math Handbook Book 2 141, 145, 148, 150, 151, 159</p>	<p>9) Solve problems involving percents with and without context.</p>
<p>Student Edition: <i>Lesson 3-6 Multiplying Integers</i> <i>Lesson 3-7 Dividing Integers</i> <i>Lesson 8-5 Sales Tax and Discount</i> <i>Lesson 8-6 Simple Interest</i> <i>Lesson 8-6b Spreadsheet Investigation</i> <i>Prerequisite Skills 559, 560, 562</i></p> <p>Teacher Wraparound Edition: <i>Lesson 3-6 Multiplying Integers</i> <i>Lesson 3-7 Dividing Integers</i> <i>Lesson 8-5 Sales Tax and Discount</i> <i>Lesson 8-6 Simple Interest</i> <i>Lesson 8-6b Spreadsheet Investigation</i></p> <p>Quick Review Math Handbook Book 2 92, 95, 130, 132-133, 135, 137</p>	<p>10) Add and subtract decimals including thousandths with and without text. Multiply decimals and integers (-100 to 100) including thousandths with and without context. (Ex. Interest rates). Divide decimals and integers in problems with and without context.</p>

<p>Student Edition: <i>Lesson 6-6 Dividing Fractions and Mixed Numbers</i></p> <p>Teacher Wraparound Edition: <i>Lesson 6-6 Dividing Fractions and Mixed Numbers</i></p> <p>Quick Review Math Handbook Book 2 122, 123</p>	<p>11) Demonstrate understanding of the concept of division of fractions in a contextual setting.</p>
<p>Student Edition: <i>Lesson 6-2 Adding and Subtracting Fractions</i> <i>Lesson 6-3 Adding and Subtracting Mixed Numbers</i> <i>Lesson 6-4 Multiplying Fractions and Mixed Numbers</i></p> <p>Teacher Wraparound Edition: <i>Lesson 6-2 Adding and Subtracting Fractions</i> <i>Lesson 6-3 Adding and Subtracting Mixed Numbers</i> <i>Lesson 6-4 Multiplying Fractions and Mixed Numbers</i></p> <p>Quick Review Math Handbook Book 2 115-118, 119</p>	<p>12) Add and subtract mixed numbers and fractions with unlike denominators, multiply mixed numbers.</p>
<p>Student Edition: <i>Lesson 1-1 A Plan for Problem Solving</i> <i>Lesson 5-4 Fractions and Decimals</i> <i>Lesson 6-1 Estimating with Fractions</i> <i>Lesson 7-2 Rates</i> <i>Lesson 7-5 Fractions, Decimals and Percents</i> Prerequisite Skills 557, 558</p> <p>Teacher Wraparound Edition: <i>Lesson 1-1 A Plan for Problem Solving</i> <i>Lesson 5-4 Fractions and Decimals</i> <i>Lesson 6-1 Estimating with Fractions</i> <i>Lesson 7-2 Rates</i> <i>Lesson 7-5 Fractions, Decimals and Percents</i></p> <p>Quick Review Math Handbook Book 2 132, 134, 136</p>	<p>13) Estimate the sum, difference, and product of whole numbers, common fractions, mixed numbers, and decimals to thousandths.</p>

<p>Student Edition: <i>Lesson 1-1 A Plan for Problem Solving</i> <i>Lesson 1-5a Problem-Solving Strategy</i> <i>Lesson 5-4 Fractions and Decimals</i> <i>Lesson 6-1 Estimating with Fractions</i> <i>Lesson 6-3b Problem-Solving Strategy</i> <i>Lesson 7-3b Hands-On Lab</i> <i>Lesson 8-1 Percent and Estimation</i> <i>Lesson 8-1b Problem-Solving Strategy</i> <i>Lesson 8-3a Hands-On Lab</i> <i>Lesson 8-3 Statistics: Using Statistics to Predict</i> <i>Lesson 10-7a Problem-Solving Strategy</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-1 A Plan for Problem Solving</i> <i>Lesson 1-5a Problem-Solving Strategy</i> <i>Lesson 5-4 Fractions and Decimals</i> <i>Lesson 6-1 Estimating with Fractions</i> <i>Lesson 6-3b Problem-Solving Strategy</i> <i>Lesson 7-3b Hands-On Lab</i> <i>Lesson 8-1 Percent and Estimation</i> <i>Lesson 8-1b Problem-Solving Strategy</i> <i>Lesson 8-3a Hands-On Lab</i> <i>Lesson 8-3 Statistics: Using Statistics to Predict</i> <i>Lesson 10-7a Problem-Solving Strategy</i></p> <p>Quick Review Math Handbook Book 2 113, 119, 137, 140</p>	14) Determine reasonableness of answers.
--	--

C. Geometry
Grade 7

MPS Learning Target #3 (Grade 7)	MPS Learning Target #4 (Grade 7)
Identify and describe polyhedra from multiple perspectives and determine the measure of angles and angle pairs in polygons.	Design and classify symmetrical figures, transform points and figures using the coordinate plane, and apply properties of similarity in problem-solving situations.
Descriptors Describing figures: 1, 2, 3, 4 Spatial relationships & transformations: 11	Descriptors Spatial relationships & transformations: 5, 6, 7, 8, 9, 10 Coordinate systems: 12, 13

Wisconsin Sub-skill Descriptors (Beginning of Grade 8)

Sub-skill C.a: Describing figures

<p>Student Edition: <i>Lesson 12-1 Drawing Three-Dimensional Figures</i> <i>Lesson 12-2 Volume of Rectangular Prisms</i> <i>Lesson 12-3 Volume of Cylinders</i> <i>Lesson 12-5 Surface Area of Cylinders</i></p> <p>Teacher Wraparound Edition: <i>Lesson 12-1 Drawing Three-Dimensional Figures</i> <i>Lesson 12-2 Volume of Rectangular Prisms</i> <i>Lesson 12-3 Volume of Cylinders</i> <i>Lesson 12-5 Surface Area of Cylinders</i></p> <p>Quick Review Math Handbook Book 2 340-343</p>	<p>1) Name 3-dimensional figures (e.g., rectangular prisms, square pyramids, cones, cylinders, and spheres).</p>
<p>Student Edition: <i>Lesson 10-4 Triangles</i> <i>Lesson 10-4b Hands-On Lab</i></p> <p>Teacher Wraparound Edition: <i>Lesson 10-4 Triangles</i> <i>Lesson 10-4b Hands-On Lab</i></p> <p>Quick Review Math Handbook Book 2 331-332</p>	<p>2) Find the measure of the third angle of a triangle when given the measures of two interior or exterior angles.</p>
<p>Student Edition: <i>Lesson 10-7 Polygons and Tessellations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 10-7 Polygons and Tessellations</i></p> <p>Quick Review Math Handbook Book 2 339</p>	<p>3) Determine the sum of the angles of a polygon using diagonals drawn from one vertex.</p>
<p>Student Edition: <i>Lesson 10-3 Angle Relationships</i></p> <p>Teacher Wraparound Edition: <i>Lesson 10-3 Angle Relationships</i></p> <p>Quick Review Math Handbook Book 2 329, 330</p>	<p>4) Determine the measure of an angle in a drawing of an adjacent and supplementary or adjacent and complementary pair of angles when given the measure of the other angle.</p>

Sub-skill C.b: Spatial relationships and transformations

Student Edition:

Lesson 10-8 Translations

Lesson 10-9b Hands-On Lab

Teacher Wraparound Edition:

Lesson 10-8 Translations

Lesson 10-9b Hands-On Lab

Quick Review Math Handbook Book 2

348-349

5) Draw and/or describe a similar figure when given a polygon drawn on graph paper with vertices at lattice points.

Student Edition:

Lesson 10-6 Similar Figures

Lesson 10-7a Problem-Solving Strategy

Lesson 10-8 Translations

Teacher Wraparound Edition:

Lesson 10-6 Similar Figures

Lesson 10-7a Problem-Solving Strategy

Lesson 10-8 Translations

Quick Review Math Handbook Book 2

330, 344, 348, 349, 408

6) Identify figures that are congruent and/or similar.

Student Edition:

Lesson 10-6 Similar Figures

Lesson 10-8 Translations

Lesson 10-8b Spreadsheet Investigation

Lesson 10-9 Reflections

Lesson 10-9b Hands-On Lab

Teacher Wraparound Edition:

Lesson 10-6 Similar Figures

Lesson 10-8 Translations

Lesson 10-8b Spreadsheet Investigation

Lesson 10-9 Reflections

Lesson 10-9b Hands-On Lab

Quick Review Math Handbook Book 2

408-410, 411

7) Demonstrate understanding of similarity by finding the relationship between the sides of two figures.

<p>Student Edition: <i>Lesson 10-8 Translations</i> <i>Lesson 10-8b Spreadsheet Investigation</i> <i>Lesson 10-9 Reflections</i> <i>Lesson 10-9b Hands-On Lab</i></p> <p>Teacher Wraparound Edition: <i>Lesson 10-8 Translations</i> <i>Lesson 10-8b Spreadsheet Investigation</i> <i>Lesson 10-9 Reflections</i> <i>Lesson 10-9b Hands-On Lab</i></p> <p>Quick Review Math Handbook Book 2 344-345, 347, 348, 349</p>	<p>8) Draw or identify the image of a figure based on one or more transformations (reflection, rotation, and/or translation).</p>
<p>Student Edition: <i>Lesson 10-9 Reflections</i> <i>Lesson 10-9b Hands-On Lab</i></p> <p>Teacher Wraparound Edition: <i>Lesson 10-9 Reflections</i> <i>Lesson 10-9b Hands-On Lab</i></p> <p>Quick Review Math Handbook Book 2 344-345, 349</p>	<p>9) Design symmetrical shapes. Draw or identify lines of symmetry.</p>
<p>Student Edition: <i>Lesson 10-9 Reflections</i> <i>Lesson 10-9b Hands-On Lab</i></p> <p>Teacher Wraparound Edition: <i>Lesson 10-9 Reflections</i> <i>Lesson 10-9b Hands-On Lab</i></p> <p>Quick Review Math Handbook Book 2 346</p>	<p>10) Classify figures possessing line symmetry only; line and rotation symmetry; rotational symmetry only; no symmetry.</p>

<p>Student Edition: <i>Lesson 12-1a Hands-On Lab</i> <i>Lesson 12-1 Drawing Three-Dimensional Figures</i> <i>Lesson 12-1b Problem-Solving Strategy</i> <i>Lesson 12-2 Volume of Rectangular Prisms</i> <i>Lesson 12-2b Spreadsheet Investigation</i> <i>Lesson 12-3 Volume of Cylinders</i></p> <p>Teacher Wraparound Edition: <i>Lesson 12-1a Hands-On Lab</i> <i>Lesson 12-1 Drawing Three-Dimensional Figures</i> <i>Lesson 12-1b Problem-Solving Strategy</i> <i>Lesson 12-2 Volume of Rectangular Prisms</i> <i>Lesson 12-2b Spreadsheet Investigation</i> <i>Lesson 12-3 Volume of Cylinders</i></p> <p>Quick Review Math Handbook Book 2 340-341, 343, 362-364, 373</p>	<p>11) Identify and describe 3-dimensional figures from multiple perspectives.</p>
<p><i>Sub-skill C.c: Coordinate systems</i></p>	
<p>Student Edition: <i>Lesson 3-3 Geometry: The Coordinate Plane</i> <i>Lesson 10-8 Translations</i> <i>Lesson 10-9 Reflections</i></p> <p>Teacher Wraparound Edition: <i>Lesson 3-3 Geometry: The Coordinate Plane</i> <i>Lesson 10-8 Translations</i> <i>Lesson 10-9 Reflections</i></p> <p>Quick Review Math Handbook Book 2 300-303, 344, 348, 349</p>	<p>12) Identify, locate, plot coordinates in all four quadrants; draw or identify the reflection of a point across the x- or y-axis or the translation of a point at integer coordinates in any of the four quadrants.</p>
<p>Student Edition: <i>Lesson 10-8 Translations</i> <i>Lesson 10-8b Spreadsheet Investigation</i> <i>Lesson 10-9 Reflections</i></p> <p>Teacher Wraparound Edition: <i>Lesson 10-8 Translations</i> <i>Lesson 10-8b Spreadsheet Investigation</i> <i>Lesson 10-9 Reflections</i></p> <p>Quick Review Math Handbook Book 2 300-303, 344</p>	<p>13) Locate or plot coordinates in any of the four quadrants using a geometric figure (e.g., transformations).</p>

D. Measurement
Grade 7

MPS Learning Target #5 (Grade 7)	MPS Learning Target #6 (Grade 7)
Make estimates, measures, and conversions, determine distances using scales and formulas, and apply proportional reasoning to enlarge and shrink figures.	Estimate and determine the perimeter/circumference and area of polygons and circles and the volume and surface area of cylinders, prisms, and pyramids.
Descriptors Measurable attributes: 1, 2 Direct measurement: 3, 4, 5 Indirect measurement: 8, 10, 11, 12	Descriptors Indirect measurement: 6, 7, 9

Wisconsin Sub-skill Descriptors (Beginning of Grade 8)	
<i>Sub-skill D.a: Measurable attributes</i>	
Student Edition: <i>Lesson 1-8 Measurement: The Metric System</i> <i>Lesson 6-7 Measurement: Changing Customary Units</i> <i>Lesson 12-2 Volume of Rectangular Prisms</i> <i>Lesson 12-3 Volume of Cylinders</i> Teacher Wraparound Edition: <i>Lesson 1-8 Measurement: The Metric System</i> <i>Lesson 6-7 Measurement: Changing Customary Units</i> <i>Lesson 12-2 Volume of Rectangular Prisms</i> <i>Lesson 12-3 Volume of Cylinders</i> Quick Review Math Handbook Book 2 392-393, 396-397	1) Select the appropriate unit of measure (U.S. customary and metric) to estimate the length, liquid capacity, volume, time, and weight/mass of everyday objects.

<p>Student Edition: <i>Lesson 1-8 Measurement: The Metric System</i> <i>Lesson 6-7 Measurement: Changing Customary Units</i> <i>A Conversion Table to cross-over from one system to the other is listed on the back inside cover of the text.</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-8 Measurement: The Metric System</i> <i>Lesson 6-7 Measurement: Changing Customary Units</i></p> <p>Quick Review Math Handbook Book 2 390, 397, 398, 399, 400-405</p>	<p>2) Convert units within a system e.g., feet to yards; ounces to pounds; inches to feet; pints to quarts. Approximate conversions of units between metric and U.S. customary systems using a model or in context (quart/liter, yard/meter).</p>
<p><i>Sub-skill D.b: Direct measurement</i></p>	
<p>Student Edition: <i>Lesson 12-6 Measurement: Precision</i></p> <p>Teacher Wraparound Edition: <i>Lesson 12-6 Measurement: Precision</i></p> <p>Quick Review Math Handbook Book 2 394, 396, 428</p>	<p>3) Apply appropriate tools techniques to measure down to the nearest 1/4-, 1/8- or 1/16-inch or nearest centimeter or millimeter.</p>
<p>Use the following lesson with explanation to meet this standard.</p> <p>Student Edition: <i>Lesson 4-4a Problem-Solving Strategy</i> Also see <i>Mathematics Course 1</i> © 2006 <i>Lesson 12-6 Measures of Time</i></p> <p>Quick Review Math Handbook Book 2 406 (units information)</p>	<p>4) Determine and compare elapsed time in problem-solving situations.</p>
<p>Student Edition: <i>Lesson 10-1a Hands-On Lab</i> <i>Lesson 10-1 Angles</i></p> <p>Teacher Wraparound Edition: <i>Lesson 10-1a Hands-On Lab</i> <i>Lesson 10-1 Angles</i></p> <p>Quick Review Math Handbook Book 2 328-329, 340, 429</p>	<p>5) Measure and/or draw angles up to 360 degrees.</p>

Sub-skill D.c: Indirect measurement

Student Edition:

Lesson 11-5 Area of Triangles and Trapezoids

Lesson 11-6 Area of Circles

Lesson 11-7 Area of Complex Figures

Teacher Wraparound Edition:

Lesson 11-5 Area of Triangles and Trapezoids

Lesson 11-6 Area of Circles

Lesson 11-7 Area of Complex Figures

Quick Review Math Handbook Book 2

356, 361

6) Estimate area given a reference.

Student Edition:

Lesson 6-8 Geometry: Perimeter and Area

Lesson 6-9a Hands-On Lab

Lesson 6-9 Geometry; Circles and Circumference

Lesson 11-4 Area of Parallelograms

Lesson 11-5a Hands-On Lab

Lesson 11-5 Area of Triangles and Trapezoids

Lesson 11-6 Area of Circles

Teacher Wraparound Edition:

Lesson 6-8 Geometry: Perimeter and Area

Lesson 6-9a Hands-On Lab

Lesson 6-9 Geometry; Circles and Circumference

Lesson 11-4 Area of Parallelograms

Lesson 11-5a Hands-On Lab

Lesson 11-5 Area of Triangles and Trapezoids

Lesson 11-6 Area of Circles

Quick Review Math Handbook Book 2

350-353, 354, 357-360, 361, 373-374

7) Determine perimeter/circumference and area of polygons and circles with and without context.

Student Edition:

Lesson 5-2a Problem-Solving Strategy

Lesson 7-4 Geometry: Scale Drawings

Teacher Wraparound Edition:

Lesson 7-4 Geometry: Scale Drawings

Quick Review Math Handbook Book 2

408-409, 410, 411

8) Determine the distance between points using a scale.

<p>Student Edition: <i>Lesson 12-2 Volume of Rectangular Prisms</i> <i>Lesson 12-2b Spreadsheet Investigation</i> <i>Lesson 12-3 Volume of Cylinders</i> <i>Lesson 12-4a Hands-On Lab</i> <i>Lesson 12-4 Surface Area of Rectangular Prisms</i> <i>Lesson 12-5 Surface Area of Cylinders</i></p> <p>Teacher Wraparound Edition: <i>Lesson 12-2 Volume of Rectangular Prisms</i> <i>Lesson 12-2b Spreadsheet Investigation</i> <i>Lesson 12-3 Volume of Cylinders</i> <i>Lesson 12-4a Hands-On Lab</i> <i>Lesson 12-4 Surface Area of Rectangular Prisms</i> <i>Lesson 12-5 Surface Area of Cylinders</i></p> <p>Quick Review Math Handbook Book 2 362-364, 365, 366-370, 371</p>	<p>9) Determine volume and surface area of cylinders, rectangular prisms and pyramids with base shapes of triangle, square, regular pentagon, and regular hexagon in real-world context.</p>
<p>Student Edition: <i>Lesson 12-2b Spreadsheet Investigation</i> <i>Lesson 12-4b Hands-On Lab</i></p> <p>Teacher Wraparound Edition: <i>Lesson 12-2b Spreadsheet Investigation</i> <i>Lesson 12-4b Hands-On Lab</i></p> <p>Quick Review Math Handbook Book 2 408-410, 411</p>	<p>10) Draw similar figures in any shape using a scale factor (e.g., enlarge/shrink).</p>

<p>Student Edition: <i>Lesson 7-1 Ratios</i> <i>Lesson 7-2b Hands-On Lab</i> <i>Lesson 7-3 Algebra: Solving Proportions</i> <i>Lesson 7-3b Hands-On Lab</i> <i>Lesson 7-4 Geometry: Scale Drawings</i> <i>Lesson 7-8 The Percent Proportion</i> <i>Lesson 10-6 Similar Figures</i></p> <p>Teacher Wraparound Edition: <i>Lesson 7-1 Ratios</i> <i>Lesson 7-2b Hands-On Lab</i> <i>Lesson 7-3 Algebra: Solving Proportions</i> <i>Lesson 7-3b Hands-On Lab</i> <i>Lesson 7-4 Geometry: Scale Drawings</i> <i>Lesson 7-8 The Percent Proportion</i> <i>Lesson 10-6 Similar Figures</i></p> <p>Quick Review Math Handbook Book 2 292-294, 295, 410</p>	11) Use ratio and proportion in context.
<p>Student Edition: <i>Lesson 4-3 Solving Multiplication Equations</i></p> <p>Quick Review Math Handbook Book 2 277, 278, 279</p>	12) Use $d = r \cdot t$ formula in simple contexts.

E. Statistics and Probability
Grade 7

MPS Learning Target #7 (Grade 7)	MPS Learning Target #7 (Grade 7)
Interpret and analyze data sets and displays using measures of central tendency and variation, and compare data sets to evaluate hypotheses and multiple representations.	Design and conduct simulations to solve problems, determine likelihood and fairness of events, and make predictions and analyze outcomes based on theoretical and experimental probability.
Descriptors Data analysis and statistics: 1, 2, 3, 4, 5	Descriptors Probability: 6, 7, 8, 9, 10, 11

Wisconsin Sub-skill Descriptors (Beginning of Grade 8)

Sub-skill E.a: Data analysis and statistics

Student Edition:

Lesson 2-2a Problem-Solving Strategy

Lesson 2-2 Making Predications

Lesson 2-5 Stem-and-Leaf Plots

Lesson 2-6 Box-and-Whisker Plots

Lesson 2-7 Bar Graphs and Histograms

Lesson 2-7b Spreadsheet Investigation

Lesson 10-2 Statistics: Making Circle Graphs

Teacher Wraparound Edition:

Lesson 2-2a Problem-Solving Strategy

Lesson 2-2 Making Predications

Lesson 2-5 Stem-and-Leaf Plots

Lesson 2-6 Box-and-Whisker Plots

Lesson 2-7 Bar Graphs and Histograms

Lesson 2-7b Spreadsheet Investigation

Lesson 10-2 Statistics: Making Circle Graphs

Quick Review Math Handbook Book 2

203

1) Compare two sets of data to generate or confirm/deny hypotheses.

<p>Student Edition: <i>Lesson 2-1 Frequency Tables</i> <i>Lesson 2-2a Problem-Solving Strategy</i> <i>Lesson 2-2 Making Predictions</i> <i>Lesson 2-3 Line Plots</i> <i>Lesson 2-5 Stem-and-Leaf Plots</i> <i>Lesson 2-7 Bar Graphs and Histograms</i> <i>Lesson 2-7b Spreadsheet Investigation</i> <i>Lesson 10-2 Statistics: Making Circle Graphs</i></p> <p>Teacher Wraparound Edition: <i>Lesson 2-1 Frequency Tables</i> <i>Lesson 2-2a Problem-Solving Strategy</i> <i>Lesson 2-2 Making Predictions</i> <i>Lesson 2-3 Line Plots</i> <i>Lesson 2-5 Stem-and-Leaf Plots</i> <i>Lesson 2-7 Bar Graphs and Histograms</i> <i>Lesson 2-7b Spreadsheet Investigation</i> <i>Lesson 10-2 Statistics: Making Circle Graphs</i></p> <p>Quick Review Math Handbook Book 2 194-196, 198-203, 206-207</p>	<p>2) Extract, interpret, and analyze data including multiple representations of the same data from tables, double back-to-back stem-and-leaf plots, double bar graphs, simple circle graphs, line plots, line graphs, charts and diagrams with and without context.</p>
<p>Student Edition: <i>Lesson 2-1 Frequency Tables</i> <i>Lesson 2-2 Making Predictions</i> <i>Lesson 2-3 Line Plots</i> <i>Lesson 2-5 Stem-and-Leaf Plots</i> <i>Lesson 2-7 Bar Graphs and Histograms</i> <i>Lesson 2-7b Spreadsheet Investigation</i> <i>Lesson 10-2 Statistics: Making Circle Graphs</i></p> <p>Teacher Wraparound Edition: <i>Lesson 2-1 Frequency Tables</i> <i>Lesson 2-2 Making Predictions</i> <i>Lesson 2-3 Line Plots</i> <i>Lesson 2-4b Hands-On Lab</i> <i>Lesson 2-5 Stem-and-Leaf Plots</i> <i>Lesson 2-7 Bar Graphs and Histograms</i> <i>Lesson 2-7b Spreadsheet Investigation</i> <i>Lesson 10-2 Statistics: Making Circle Graphs</i></p> <p>Quick Review Math Handbook Book 2 196, 198, 201-203</p>	<p>3) Create graph with one-variable data sets using back-to-back stem-and-leaf plots, double bar graphs, circle graphs, and line plots and line graphs; discuss appropriateness of graph selected.</p>
<p>Student Edition:</p>	<p>4) Find mean, median (with odd or even number of data),</p>

<p><i>Lesson 2-3 Line Plots</i> <i>Lesson 2-4 Mean, Median, and Mode</i> <i>Lesson 2-4b Hands-On Lab</i> <i>Lesson 2-5 Stem-and-Leaf Plots</i> <i>Lesson 2-6 Box-and-Whisker Plots</i> Teacher Wraparound Edition: <i>Lesson 2-3 Line Plots</i> <i>Lesson 2-4 Mean, Median, and Mode</i> <i>Lesson 2-4b Hands-On Lab</i> <i>Lesson 2-5 Stem-and-Leaf Plots</i> <i>Lesson 2-6 Box-and-Whisker Plots</i> Quick Review Math Handbook Book 2 210-214, 237</p>	<p>mode and range of a set of data with and without context.</p>
<p>Student Edition: <i>Lesson 2-1 Frequency Tables</i> <i>Lesson 2-2a Problem-Solving Strategy</i> <i>Lesson 2-2 Making Predictions</i> <i>Lesson 2-3 Line Plots</i> <i>Lesson 2-7 Bar Graphs and Histograms</i> <i>Lesson 2-8 Misleading Statistics</i> Teacher Wraparound Edition: <i>Lesson 2-1 Frequency Tables</i> <i>Lesson 2-2a Problem-Solving Strategy</i> <i>Lesson 2-2 Making Predictions</i> <i>Lesson 2-3 Line Plots</i> <i>Lesson 2-7 Bar Graphs and Histograms</i> <i>Lesson 2-8 Misleading Statistics</i> Quick Review Math Handbook Book 2 215</p>	<p>5) Evaluate sources of data in context and multiple representations of a given data set.</p>
<p>Sub-skill E.b: Probability</p>	
<p>Student Edition: <i>Lesson 9-7 Independent and Dependent Events</i> Teacher Wraparound Edition: <i>Lesson 9-7 Independent and Dependent Events</i> Quick Review Math Handbook Book 2 232-233</p>	<p>6) Determine the likelihood of an event and probability based on one or two dependent independent events.</p>

<p>Student Edition: <i>Lesson 9-1 Simple Events</i> <i>Lesson 9-2 Tree Diagrams</i> <i>Lesson 9-3 The Fundamental Counting Principle</i></p> <p>Teacher Wraparound Edition: <i>Lesson 9-1 Simple Events</i> <i>Lesson 9-2 Tree Diagrams</i> <i>Lesson 9-3 The Fundamental Counting Principle</i></p> <p>Quick Review Math Handbook Book 2 228-230</p>	7) Use probabilities to estimate outcomes and evaluate fair and unfair simple events.
<p>Student Edition: <i>Lesson 9-2 Tree Diagrams</i></p> <p>Quick Review Math Handbook Book 2 217</p>	8) Use data from simultaneous provided in charts/tables to solve and interpret probability problems.
<p>Student Edition: <i>Lesson 9-4 Permutations</i> <i>Lesson 9-5a Hands-On Lab</i> <i>Lesson 9-5 Combinations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 9-4 Permutations</i> <i>Lesson 9-5a Hands-On Lab</i> <i>Lesson 9-5 Combinations</i></p> <p>Quick Review Math Handbook Book 2 216-218, 220-221</p>	9) Determine the number of arrangements from a set of 5 or less. Es: How many different ways could 5 students stand in line?
<p>Student Edition: <i>Lesson 9-2 Tree Diagrams</i></p> <p>Teacher Wraparound Edition: <i>Lesson 9-2 Tree Diagrams</i></p> <p>Quick Review Math Handbook Book 2 216-218, 220-221</p>	10) Solve problems involving sample spaces or diagrams.

<p>Student Edition: <i>Lesson 9-6 Theoretical and Experimental Probability</i> <i>Lesson 9-6b Hands-On Lab</i></p> <p>Teacher Wraparound Edition: <i>Lesson 9-6 Theoretical and Experimental Probability</i> <i>Lesson 9-6b Hands-On Lab</i></p> <p>Quick Review Math Handbook Book 2 224-226</p>	11) Analyze outcomes based on an understanding of theoretical and experimental probability.
---	---

F. Algebraic Relationships
Grade 7

MPS Learning Target #9 (Grade 7)	MPS Learning Target #10 (Grade 7)
Describe functional relationships in words, tables, graphs, and symbolic rules, extend and justify sequences, and describe graphs of real-world situations.	Describe functional relationships in words, tables, graphs, and symbolic rules, extend and justify sequences, and describe graphs of real-world situations.
<p>Descriptors Patterns, relations, & functions: 1, 2, 3, 4, 5, 6, 7 Expressions, equations, & inequalities: 12</p>	<p>Descriptors Expressions, equations, & inequalities: 8, 9, 10, 11, 12, 13, 14 Properties: 15, 16, 17, 18</p>

Wisconsin Sub-skill Descriptors (Beginning of Grade 8)	
<i>Sub-skill F.a: Patterns, relations and functions</i>	
<p>Student Edition: <i>Lesson 4-6 Functions and Linear Equations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 4-6 Functions and Linear Equations</i></p>	1) Use two concurrent numeric patterns to describe and analyze functional relationships between two variables.
<p>Student Edition: <i>Lesson 4-6 Functions and Linear Equations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 4-6 Functions and Linear Equations</i></p>	2) Describe and analyze in words functional relationships in two concurrent numeric patterns using multiplication and exponents and describe the relationship in words.

<p>Student Edition: <i>Lesson 1-1 A Plan for Problem Solving</i> <i>Lesson 1-7 Sequences</i> <i>Lesson 1-7b Hands-On Lab</i> <i>Lesson 2-2a Problem-Solving Strategy</i> <i>Lesson 3-6a Problem-Solving Strategy</i> <i>Lesson 4-4a Problem-Solving Strategy</i> <i>Lesson 4-6a Hands-On Lab</i> <i>Lesson 9-6a Problem-Solving Strategy</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-7 Sequences</i> <i>Lesson 1-7b Hands-On Lab</i> <i>Lesson 3-6a Problem-Solving Strategy</i></p>	<p>3) Extend an increasing or decreasing arithmetic or geometric pattern.</p>
<p>Student Edition: <i>Lesson 4-6 Functions and Linear Equations</i> <i>Lesson 4-7 Lines and Slope</i></p>	<p>4) Describe and interpret linear patterns in tables and graphs.</p>
<p>Student Edition: <i>Lesson 4-6 Functions and Linear Equations</i> <i>Lesson 4-7 Lines and Slope</i></p>	<p>5) Identify the rule to complete or extend a function table or any combination of the two using one or two operations (+, -, x, ÷) and numbers (-100 through 100) in the function table.</p>
<p>Student Edition: <i>Lesson 2-2a Problem-Solving Strategy</i> <i>Lesson 2-7 Bar Graphs and Histograms</i> <i>Lesson 2-7b Spreadsheet Investigation</i> <i>Lesson 4-6a Hands-On Lab</i> <i>Lesson 4-6 Functions and Linear Equations</i> <i>Lesson 4-7 Lines and Slope</i></p> <p>Teacher Wraparound Edition: <i>Lesson 2-2a Problem-Solving Strategy</i> <i>Lesson 2-7 Bar Graphs and Histograms</i> <i>Lesson 2-7b Spreadsheet Investigation</i> <i>Lesson 4-6a Hands-On Lab</i> <i>Lesson 4-6 Functions and Linear Equations</i> <i>Lesson 4-7 Lines and Slope</i></p>	<p>6) Describe real-world phenomena represented by a graph. Describe real-world phenomena that a given graph might represent.</p>

<p>Student Edition: <i>Lesson 1-7 Sequences</i> <i>Lesson 1-7b Hands-On Lab</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-7 Sequences</i> <i>Lesson 1-7b Hands-On Lab</i></p>	<p>7) Justify the accuracy of the chosen item in a sequence.</p>
<p><i>Sub-skill F.b: Expressions, equations and inequalities</i></p>	
<p>Student Edition: <i>Lesson 4-5 Inequalities</i></p> <p>Teacher Wraparound Edition: <i>Lesson 4-5 Inequalities</i></p> <p>Quick Review Math Handbook Book 2 296-298, 321</p>	<p>8) Solve single-variable inequalities using symbols.</p>
<p>Student Edition: <i>Lesson 1-5 Algebra: Equations</i> <i>Lesson 4-2a Hands-On Lab</i> <i>Lesson 4-2 Solving Addition and Subtraction Equations</i> <i>Lesson 4-3 Solving Multiplication Equations</i> <i>Lesson 4-4 Solving Two-Step Equations</i> <i>Lesson 6-5 Algebra: Solving Equations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-5 Algebra: Equations</i> <i>Lesson 4-2a Hands-On Lab</i> <i>Lesson 4-2 Solving Addition and Subtraction Equations</i> <i>Lesson 4-3 Solving Multiplication Equations</i> <i>Lesson 4-4 Solving Two-Step Equations</i> <i>Lesson 6-5 Algebra: Solving Equations</i></p> <p>Quick Review Math Handbook Book 2 281-285, 320</p>	<p>9) Solve single-variable one-and two-step equations with whole number, whole number integer, or rational, coefficients with and without context.</p>

<p>Student Edition: <i>Lesson 1-4 Algebra: Variables and Expressions</i> <i>Lesson 3-4 Adding Integers</i> <i>Lesson 3-5 Subtracting Integers</i> <i>Lesson 3-6 Multiplying Integers</i> <i>Lesson 3-7 Dividing Integers</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-4 Algebra: Variables and Expressions</i> <i>Lesson 3-4 Adding Integers</i> <i>Lesson 3-5 Subtracting Integers</i> <i>Lesson 3-6 Multiplying Integers</i> <i>Lesson 3-7 Dividing Integers</i></p> <p>Quick Review Math Handbook Book 2 276-278, 279</p>	<p>10) Find values of expressions with one variable and up to two operations including basic operations and exponents.</p>
<p>Student Edition: <i>Lesson 4-4 Solving Two-Step Equations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 4-4 Solving Two-Step Equations</i></p> <p>Quick Review Math Handbook Book 2 285, 286, 291</p>	<p>11) Solve two-step multi-operation equations with letter variables and whole number or integer coefficients with and without context. Ex: $-3 + 1 = 7$.</p>
<p>The following references cover writing expressions.</p> <p>Student Edition: <i>Lesson 4-1 Writing Expressions and Equations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 4-1 Writing Expressions and Equations</i></p>	<p>12) Write an algebraic expression (with one or two operations) which generalizes a linear pattern.</p>
<p>Student Edition: <i>Lesson 4-1 Writing Expressions and Equations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 4-1 Writing Expressions and Equations</i></p> <p>Quick Review Math Handbook Book 2 260-265</p>	<p>13) Create a corresponding algebraic expression when given an arithmetic operation/relationship expressed in words.</p>

<p>Student Edition: <i>Lesson 3-7 Dividing Integers</i> <i>Lesson 4-3 Solving Multiplication Equations</i> <i>Lesson 6-5 Algebra: Solving Equations</i> <i>Lesson 6-8 Geometry: Perimeter and Area</i> <i>Lesson 6-9 Geometry: Circles and Circumference</i> <i>Lesson 11-3a Hands-On Lab</i> <i>Lesson 11-5 Area of Triangles and Trapezoids</i> <i>Lesson 11-6 Area of Circles</i> <i>Lesson 12-2 Volume of Rectangular Prisms</i></p> <p>Teacher Wraparound Edition: <i>Lesson 3-7 Dividing Integers</i> <i>Lesson 6-8 Geometry: Perimeter and Area</i> <i>Lesson 6-9 Geometry: Circles and Circumference</i> <i>Lesson 11-5 Area of Triangles and Trapezoids</i> <i>Lesson 11-6 Area of Circles</i> <i>Lesson 12-2 Volume of Rectangular Prisms</i></p> <p>Quick Review Math Handbook Book 2 276, 277, 278, 279</p>	<p>14) Evaluate formulas with and without context by solving for a specified variable.</p>
<p><i>Sub-skill F.c: Properties</i></p>	
<p>Student Edition: <i>Lesson 1-6 Algebra: Properties</i> <i>Lesson 3-4 Adding Integers</i> <i>Lesson 3-6 Multiplying Integers</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-6 Algebra: Properties</i> <i>Lesson 3-4 Adding Integers</i> <i>Lesson 3-6 Multiplying Integers</i></p> <p>Quick Review Math Handbook Book 2 268-269, 275</p>	<p>15) Identify a pair of equivalent numerical or one-variable expressions when using commutative or associative properties with addition and multiplication.</p>
<p>Student Edition: <i>Lesson 1-3 Order of Operations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-3 Order of Operations</i></p> <p>Quick Review Math Handbook Book 2 276</p>	<p>16) Demonstrate understanding of up to four-step order of operations expressions using parentheses, exponents, and fraction symbol.</p>

<p>Student Edition: <i>Lesson 1-6 Algebra: Properties</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-6 Algebra: Properties</i></p> <p>Quick Review Math Handbook Book 2 270, 275</p>	<p>17) Demonstrate understanding of distributive property without variables.</p>
<p>Student Edition: <i>Lesson 1-3 Order of Operations</i></p> <p>Teacher Wraparound Edition: <i>Lesson 1-3 Order of Operations</i></p> <p>Quick Review Math Handbook Book 2 276</p>	<p>18) Solve order of operations problems with one variable to demonstrate understanding of commutativity and associativity.</p>