



# Math Connects

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STANDARDS	PAGE REFERENCES
<p><b>STANDARD 4.1 (NUMBER AND NUMERICAL OPERATIONS) ALL STUDENTS WILL DEVELOP NUMBER SENSE AND WILL PERFORM STANDARD NUMERICAL OPERATIONS AND ESTIMATIONS ON ALL TYPES OF NUMBERS IN A VARIETY OF WAYS.</b></p>	
<p>Building upon knowledge and skills gained in preceding grades, by the end of <b>Grade 5</b>, students will understand meanings of operations and procedures, and how they relate to one another.</p>	
<p>Number Sense</p>	
<p><b>NUMBER SENSE</b></p>	
<ul style="list-style-type: none"> <li>Use real-life experiences, physical materials, and technology to construct meanings for numbers</li> </ul>	<p><b>Student Edition:</b> 28-29, 36-39, 500-503, 517-521, 524-526, 527-529, 533-535, 537-541</p> <p><b>Teacher Edition:</b> E 29; I 28, 36; T 28</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Understand the place value structure of the <b>base ten</b> number system               <ul style="list-style-type: none"> <li>10 ones = 1 ten</li> <li>10 tens = 1 hundred</li> <li>10 hundreds = 1 thousand</li> <li>10 thousands = 1 ten thousand</li> <li>10 ten thousands = 1 hundred thousand</li> <li><b>10 hundred thousands = 1 million</b></li> </ul> </li> </ul>	<p><b>Student Edition:</b> 14, 17-19, 51, 55</p> <p><b>Teacher Edition:</b> DI 17B; E 19; HP 19; I 17; R 18; SP 18; T 17-18</p>
<ul style="list-style-type: none"> <li>Understand place value through hundred millions</li> </ul>	<p><b>Student Edition:</b> 14, 17-19 <i>Spiral Review 23</i></p> <p><b>Teacher Edition:</b> DI 17B; E 19; FMB 17A; HP 19; I 17; R 18; SP 18; T 17-18</p>
<ul style="list-style-type: none"> <li>Read and write numbers through <b>hundred millions</b></li> </ul>	<p><b>Student Edition:</b> 17-19, 32-35, 51, 53 <i>Are You Ready 16</i> <i>Spiral Review 23</i></p> <p><b>Teacher Edition:</b> R 18; SP 18, 32; T 17-18, 33</p>
<ul style="list-style-type: none"> <li>Write whole numbers in standard, written and expanded forms</li> </ul>	<p><b>Student Edition:</b> 17-19, 51 <i>Are You Ready 16</i> <i>Spiral Review 23</i></p> <p><b>Teacher Edition:</b> R 18; SP 18; T 17-18</p>
<ul style="list-style-type: none"> <li>Explore the magnitude of numbers in the context of real world problems               <ol style="list-style-type: none"> <li><b>Compare and order numbers</b> up to hundred millions</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 20-23, 24-25, 36-39, 52 <i>Problem Solving 40-41</i></p> <p><b>Teacher Edition:</b> A 23; SP 36, 42; T 20-21, 43</p>
<ul style="list-style-type: none"> <li>Use the place value chart to explore whole numbers</li> </ul>	<p><b>Student Edition:</b> 14, 17-19</p> <p><b>Teacher Edition:</b> ATS 18; DI 17B; R 18</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Use whole numbers, fractions, and decimals to represent equivalent forms of the same number</li> </ul>	<p><b>Student Edition:</b> 28-30, 382-384, 391-393 <i>Explore</i> 26-27 <i>Game Time</i> 385 <i>Spiral Review</i> 35</p> <p><b>Teacher Edition:</b> 5MC 32A; E 387; HP 30, 35; R 28, 386; SP 28, 386; T 28-29, 382-383</p>
<b>FRACTIONS</b>	
<ul style="list-style-type: none"> <li>Understand all <b>fractions</b> as part of a whole, as subset of a set, as a location on a number line, and as divisions of whole number</li> </ul>	<p><b>Student Edition:</b> 26-27, 330, 333-335, 338-341, 350-353 <i>Are You Ready</i> 332</p> <p><b>Teacher Edition:</b> A 353; HP 353; I 333, 350; R 350; SP 350; T 333-334, 350-351</p>
<ul style="list-style-type: none"> <li>Create <b>equivalent fractions</b>, given a fraction</li> </ul>	<p><b>Student Edition:</b> 382-384, 386-389 <i>Game Time</i> 386</p> <p><b>Teacher Edition:</b> 5MC 386A; A 384; E 383, 387; HP 384, 389; R 382, 386; SP 382, 386; T 382-383, 386-387</p>
<ul style="list-style-type: none"> <li>Simplify fractions to lowest terms</li> </ul>	<p><b>Student Edition:</b> 386-389, 412, 428-431, 448-451, 452-454</p> <p><b>Teacher Edition:</b> 5MC 391A; E 387; HP 389, 431; R 386, 428, 434, 448; SP 386, 428, 434; T 386-387</p>
<ul style="list-style-type: none"> <li>Understand and apply proper <b>and improper fractions and mixed numbers</b></li> </ul>	<p><b>Student Edition:</b> 333-335, 338-342, 346-348, 448-451, 452-454 <i>Explore</i> 336-337 <i>Game Time</i> 343</p> <p><b>Teacher Edition:</b> E 339; HP 341, 348; R 338, 346; SP 338, 346; T 333-334, 338-339, 346-347</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Rename a mixed number as an <b>improper</b> fraction</li> </ul>	<p><b>Student Edition:</b> 346-348, 349, 350-353</p> <p><b>Teacher Edition:</b> 5MC 350A; DI 346B, 350B; HP 348; R 346; SP 346; T 346-347, 350-351</p>
<ul style="list-style-type: none"> <li>Compare proper and improper fractions and mixed numbers (with and without the use of a number line; compare fractions using <math>&lt;</math>, <math>&gt;</math>, or <math>=</math>)</li> </ul>	<p><b>Student Edition:</b> 350-353, 404-407 <i>Explore</i> 402-403</p> <p><b>Teacher Edition:</b> 5MC 356A; A 353; HP 353, 407; I 350, 404; R 350, 404; SP 350, 404; T 350-351, 404-405</p>
<ul style="list-style-type: none"> <li>Understand and identify fractions in their <b>lowest and simplest forms</b></li> </ul>	<p><b>Student Edition:</b> 386-389, 428-431, 434-436, 439-441, 448-451, 452-454</p> <p><b>Teacher Edition:</b> 5MC 391A, 434A; A 389; HP 389, 431; R 386, 428, 434; SP 386, 428, 434; T 386-387</p>
<ul style="list-style-type: none"> <li>Develop an understanding of:             <ol style="list-style-type: none"> <li>Prime numbers</li> <li>Factors – common and greatest common factor of two numbers</li> <li>Multiples</li> <li>Recognize that some numbers are only divisible by one and themselves (prime) and others have multiple divisors (composite)</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 370, 373-375, 378-381, 386-389, 396-399 <i>Explore</i> 376-377</p> <p><b>Teacher Edition:</b> E 374; HP 375, 381, 399; R 373, 378, 396; SP 373, 378, 396; T 373-374, 378-379, 396-397</p>
<ul style="list-style-type: none"> <li>Calculate multiples of a whole numbers and the least common multiple of a given number</li> </ul>	<p><b>Student Edition:</b> 396-399, 404-407, 434-436, 439-441</p> <p><b>Teacher Edition:</b> 5MC 400A; A 399; DI 396B; HP 399; R 396; SP 396; T 396-397</p>
<ul style="list-style-type: none"> <li>Identify the factors of a given number             <ol style="list-style-type: none"> <li>Find the common factors and the greatest common factor of two numbers</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 373-375, 378-381, 386-389</p> <p><b>Teacher Edition:</b> 5MC 378A; DI 373B; E 374; HP 375; R 373, 386; SP 373; T 373-374, 386-387</p>

STANDARDS	PAGE REFERENCES
<b>Decimals</b>	
<ul style="list-style-type: none"> <li>Recognize the decimal nature of United States currency and compute with money in the context of real world problems</li> </ul>	<p><b>Student Edition:</b> 66 #29, 81 #11, 82 #20, 99 #7, 132-134</p> <p><b>Teacher Edition:</b> DI 28B Option 2, 64B Option 1, 74B Option 1; I 28</p>
<ul style="list-style-type: none"> <li>Read and write decimals up to <b>thousandths</b> in standard and written form. 001 = one thousandths</li> </ul>	<p><b>Student Edition:</b> 28-30, 32-35 <i>Explore 26-27</i></p> <p><b>Teacher Edition:</b> 5MC 32A; I 28; R 28, 32; SP 28, 32; T 28-29, 32-33</p>
<ul style="list-style-type: none"> <li>Compare and order decimals through <b>thousandths</b>. .004; 4 hundredths</li> </ul>	<p><b>Student Edition:</b> 36-39, 42-45 <i>Game Time 47</i> <i>Problem Solving 40-41</i></p> <p><b>Teacher Edition:</b> 5MC 42A; A 39, 45; E 37; HP 39, 45; R 36, 42; SP 36, 42; T 36-37, 42-43</p>
<ul style="list-style-type: none"> <li>Compare decimals using <math>&lt;</math>, <math>&gt;</math>, or <math>=</math></li> </ul>	<p><b>Student Edition:</b> 36-39 <i>Spiral Review 46</i></p> <p><b>Teacher Edition:</b> 5MC 42A; A 39; HP 39; R 36; SP 36; T 37</p>
<ul style="list-style-type: none"> <li>Use whole numbers, fractions, and decimals to represent <b>equivalent forms</b> of the same number</li> </ul>	<p><b>Student Edition:</b> 28-30, 382-384, 391-393 <i>Explore 26-27</i> <i>Game Time 385</i> <i>Spiral Review 26-27</i></p> <p><b>Teacher Edition:</b> 5MC 32A; E 387; HP 30, 35; R 28, 386; SP 28, 386; T 28-29, 382-383</p>
<b>Ratio and Proportion</b>	
<ul style="list-style-type: none"> <li>Explore the use of <b>ratios and proportions</b> in a variety of situations</li> </ul>	<p><b>Student Edition:</b> <i>Looking Ahead LA10-LA13, LA14-LA17</i></p> <p><b>Teacher Edition:</b> 5MC LA14A; A LA13; I LA10, LA14; T LA10-LA11</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Express <b>ratios and proportions</b> in different forms</li> </ul>	<p><b>Student Edition:</b> <i>Looking Ahead</i> LA10-LA13</p> <p><b>Teacher Edition:</b> A LA13; I LA10; T LA10-LA11</p>
<ul style="list-style-type: none"> <li>Understand and use whole-number percents between 1 and 100 in a variety of situations</li> </ul>	<p>The topic of percents is introduced, developed and reinforced in <i>Math Connects Course 1, 2 and 3</i> © 2009.</p>
<b>Percent</b>	
<ul style="list-style-type: none"> <li>Understand that percent means part of 100, and write percents as fractions and decimals</li> </ul>	<p>The topic of percents is introduced, developed and reinforced in <i>Math Connects Course 1, 2 and 3</i> © 2009.</p>
<b>Numerical Operations</b>	
<b>ADDITION AND SUBTRACTION</b>	
<ul style="list-style-type: none"> <li>Add whole numbers with <b>six digits</b></li> </ul>	<p><b>Student Edition:</b> 70-72 <i>Problem Solving</i> 76-77</p> <p><b>Teacher Edition:</b> R 70; SP 70</p>
<ul style="list-style-type: none"> <li>Subtract whole numbers with <b>six digits</b></li> </ul>	<p><b>Student Edition:</b> 70-72 <i>Problem Solving</i> 76-77</p>
<b>MULTIPLICATION AND DIVISION</b>	
<ul style="list-style-type: none"> <li>Multiply whole numbers with <b>two and three digit</b> multipliers</li> </ul>	<p><b>Student Edition:</b> 122-124, 126-129 <i>Game Time</i> 125</p> <p><b>Teacher Edition:</b> 5MC 126A, 132A; A 124; E 123; HP 124, 129; R 122, 126; SP 122, 126; T 122-123</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Divide whole numbers with <b>two and three digit</b> multipliers</li> </ul>	<p><b>Student Edition:</b> 149-151, 162-164 <i>Mid-Chapter Check</i> 165</p> <p><b>Teacher Edition:</b> 5MC 152A, 166A; A 164; E 163; HP 151, 164; R 150, 162; SP 162; T 162-163</p>
<ul style="list-style-type: none"> <li>Do short division with one digit divisor – <b>Mentally</b></li> </ul>	<p><b>Student Edition:</b> 149-151, 152-155 <i>Are You Ready</i> 148</p> <p><b>Teacher Edition:</b> 5MC 152A; HP 151, 155; R 150, 152; SP 150, 152; T 150, 152-153</p>
<ul style="list-style-type: none"> <li><b>Prove</b> multiplication and division equations</li> </ul>	<p><b>Student Edition:</b> 126-129, 174-176 <i>Explore</i> 156-157 <i>Remember</i> 163, 175</p> <p><b>Teacher Edition:</b> HP 129; R 126; SP 126; T 127</p>
<b>Fractions</b>	
<ul style="list-style-type: none"> <li>Add proper fractions</li> </ul>	<p><b>Student Edition:</b> 432-435, 434-436 <i>Explore</i> 421-422, 432-433</p> <p><b>Teacher Edition:</b> 5MC 428A, 439A; A 425; E 425, 435; HP 425; R 424, 434; SP 424, 434; T 423-424, 434-435</p>
<ul style="list-style-type: none"> <li>Add improper fractions</li> </ul>	<p>Improper fractions are developed and reinforced in <i>Math Connects Course 1, 2 and 3</i> © 2009.</p>
<ul style="list-style-type: none"> <li>Add mixed number fractions</li> </ul>	<p><b>Student Edition:</b> 448-451 <i>Problem Solving</i> 462-463</p> <p><b>Teacher Edition:</b> 5MC 452A; E 450; HP 451; R 448; SP 448; T 448-449</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Subtract proper fractions</li> </ul>	<p><b>Student Edition:</b> 428-431, 439-441 <i>Explore</i> 426-427, 437-438</p> <p><b>Teacher Edition:</b> 5MC 434A; A 431; E 429; HP 431, 440; R 428, 439; SP 428, 439; T 428-429, 439-440</p>
<ul style="list-style-type: none"> <li>Subtract improper fractions</li> </ul>	<p>Improper fractions are developed and reinforced in <i>Math Connects Course 1, 2 and 3</i> © 2009.</p>
<ul style="list-style-type: none"> <li>Subtract mixed numbers and fractions</li> </ul>	<p><b>Student Edition:</b> 452-454, 458-461 <i>Game Time</i> 455 <i>Problem Solving</i> 462-463</p> <p><b>Teacher Edition:</b> 5MC 456A; A 454, 461; E 453; HP 454, 461; R 452, 458; SP 452, 458; T 452-453, 458-459</p>
<b>DECIMALS</b>	
<ul style="list-style-type: none"> <li>Add decimals to thousandths. .005</li> </ul>	<p><b>Student Edition:</b> 80-82, 84-87, 95 <i>Explore</i> 78-79 <i>Game Time</i> 83</p> <p><b>Teacher Edition:</b> 5MC 84A, 88A; A 82; E 81; HP 82, 87; R 80; SP 80, 84; T 80-81</p>
<ul style="list-style-type: none"> <li>Subtract decimals to thousands</li> </ul>	<p><b>Student Edition:</b> 80-82, 95 <i>Explore</i> 78-79 <i>Game Time</i> 83</p> <p><b>Teacher Edition:</b> 5MC 84A; A 82; E 81; HP 82; R 80; SP 80; T 80-81</p>
<ul style="list-style-type: none"> <li>Write whole numbers, fractions and decimals to represent equivalent forms of the same number. <math>\frac{1}{4}</math>; .25</li> </ul>	<p><b>Student Edition:</b> 28-30, 386-389, 391-393 <i>Explore</i> 26-27</p> <p><b>Teacher Edition:</b> 5MC 32A, 394A; A 30; E 392; HP 30; I 28; R 28; SP 28, 391; T 28-29, 391-392</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Write a decimal as a fraction or mixed numbers in lowest form</li> </ul>	<p><b>Student Edition:</b> 391-393 <i>Explore</i> 26-27</p> <p><b>Teacher Edition:</b> 5MC 394A; A 393; HP 393; R 391; SP 391; T 391-392</p>
<ul style="list-style-type: none"> <li><math>10/10 = 1.0</math></li> </ul>	<p><b>Student Edition:</b> 424 #5, 425 #14</p> <p><b>Teacher Edition:</b> 5MC 428A; HP 425; R 424; SP 424</p>
<ul style="list-style-type: none"> <li>Do math problems – adding and subtracting – using <b>buying and selling examples</b> from the world of the students. (CDs; ipods, clothing....) Use sale ads, catalog items....</li> </ul>	<p><b>Student Edition:</b> 74-75, 81 #11, 82 #20, 86 #22, 99 #7, 430 #17, 443 #7</p> <p><b>Teacher Edition:</b> DI 61B; E 443; HP 75, 443 #4; R 442 #6</p>
<b>Accuracy and speed</b>	
<ul style="list-style-type: none"> <li>Know with accuracy and speed all <b>multiplications facts</b> up to 12.</li> </ul>	<p><b>Student Edition:</b> 103-105, 108-111, 116-118 <i>Are You Ready</i> 102</p> <p><b>Teacher Edition:</b> 5MC 108A; A 105; HP 105, 118; I 103; R 104, 116; SP 104, 108, 116; T 103-104</p>
<b>Mental Math</b>	
<ul style="list-style-type: none"> <li>Do lots and lots of <b>mental math</b> using all four arithmetic operations. Include some fractions into the mental math equations. <math>23 + 3 \times 1 + 14 - 0 + 10 \div 2 =</math></li> </ul>	<p><b>Student Edition:</b> 88-91, 152-155, 218-221, 444-446 <i>Explore</i> 106-107</p> <p><b>Teacher Edition:</b> E 89, 219; HP 91, 155, 221; R 88, 152, 218; SP 88, 218; T 88-89, 152-153</p>
<b>ESTIMATION</b>	
<ul style="list-style-type: none"> <li>Use a variety of estimation strategies for both number and computation.</li> </ul>	<p><b>Student Edition:</b> 42-45, 64-67, 74-75, 112-115, 132-135, 152-155, 174-176, 350-353, 442-443, 444-446, 612-615</p> <p><b>Teacher Edition:</b> DI 64B; R 132, 152, 174, 444, 612; SP 64, 132, 444</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Recognize when an estimate is appropriate, and understand the usefulness of an estimate as distinct from an exact answer.</li> </ul>	<p><b>Student Edition:</b> 74-75</p> <p><b>Teacher Edition:</b> 5MC 80A; A 75; DI 64B; HP 75; R 74; SP 74; T 74-75</p>
<ul style="list-style-type: none"> <li>Determine the reasonableness of an answer by estimating the result of operations.</li> </ul>	<p><b>Student Edition:</b> 65, 74-75, 133-135, 175-176, 248-249, 442-443</p> <p><b>Teacher Edition:</b> 5MC 444A; A 443; HP 443; R 442; SP 442; T 132-133, 442-443</p>
<ul style="list-style-type: none"> <li>Determine whether a given estimate is an overestimate or an underestimate.</li> </ul>	<p><b>Teacher Edition:</b> E 75</p>
<ul style="list-style-type: none"> <li>Round whole numbers to nearest <b>hundred million</b></li> </ul>	<p>Whole numbers rounded up to the nearest billion is covered in the following references.</p> <p><b>Student Edition:</b> 61-63, 64-67, 112-115</p> <p><b>Teacher Edition:</b> 5MC 64A; E 63, 65; HP 63, 67, 115; R 62, 64, 112; SP 62, 64, 112; T 61-62, 64-65</p>
<ul style="list-style-type: none"> <li>Round decimals to nearest thousandth, hundredth, tenth, and whole number.</li> </ul>	<p><b>Student Edition:</b> 61-63, 64-67</p> <p><b>Teacher Edition:</b> 5MC 64A, 68A; A 63, 67; HP 63, 67; R 62, 64; SP 62, 64; T 62, 65</p>
<p><b>STANDARD 4.2 (GEOMETRY AND MEASUREMENT) ALL STUDENTS WILL DEVELOP SPATIAL SENSE AND THE ABILITY TO USE GEOMETRIC PROPERTIES, RELATIONSHIPS, AND MEASUREMENT TO MODEL, DESCRIBE AND ANALYZE PHENOMENA.</b></p>	
<p>Building upon knowledge and skills gained in preceding grades, by the end of <b>Grade 5</b>, students will:</p>	
<p><u><b>Geometric Properties</b></u></p>	
<p><b>PROPERTIES</b></p>	
<ul style="list-style-type: none"> <li>Understand and apply concepts involving lines and angle:             <ol style="list-style-type: none"> <li><b>Notation for line, ray, angle, line segment</b></li> <li>Properties of <b>parallel, perpendicular, and intersecting lines</b></li> <li>Sum of the measures of the interior angles of a triangle is 180 degrees</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 557-560, 566-569</p> <p><b>Teacher Edition:</b> 5MC 562A; A 560; DI 557B; E 567; HP 560, 569; I 557; R 557; SP 557, 566; T 557-558</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Review and maintain comparison of <b>two and three dimensional figures</b> using spatial visualization and visual perception</li> </ul>	<p><b>Student Edition:</b> 570-573, 608-611, 616-619, 624-627, 628-629, 631-635</p> <p><b>Teacher Edition:</b> E 625, 632; HP 619, 627; I 624; R 570, 616, 624; SP 616, 624; T 624-625</p>
<ul style="list-style-type: none"> <li><b>Identify, describe, compare and classify polygons.</b> Use spatial visualization and visual perception:             <ol style="list-style-type: none"> <li><b>Triangles</b> by angles and sides</li> <li>Quadrilaterals, including squares, rectangles, parallelograms, trapezoids, rhombi</li> <li>Polygons by number of sides</li> <li>Triangles by equilateral, equiangular, regular</li> <li>All points equidistant from a given point from a circle</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 566-569, 570-574, 608-611</p> <p><b>Teacher Edition:</b> 5MC 570A; A 569; E 571; HP 569, 573; I 570; R 566, 570; SP 566, 570; T 566-567, 570-571</p>
<ul style="list-style-type: none"> <li>Identify <b>similar</b> figures</li> </ul>	<p>Similar figures are introduced and developed in <i>Math Connects Course 1, 2 and 3</i> © 2009.</p>
<ul style="list-style-type: none"> <li>Understand and apply the concept of <b>congruence</b></li> </ul>	<p><b>Student Edition:</b> 559-560, 566-569, 570-573</p> <p><b>Teacher Edition:</b> 5MC 570A; A 569; HP 569, 573; R 566, 570; SP 566, 570; T 558, 566-567, 570-571</p>
<ul style="list-style-type: none"> <li>Understand and apply the concept of <b>symmetry (line and rotational)</b>. Use a grid for visualizing the symmetry coordinate</li> </ul>	<p><b>Student Edition:</b> 582-585, 586-590, 591-593 <i>Start Smart</i> 10-11</p> <p><b>Teacher Edition:</b> 5MC 586A; HP 585; LP 10; R 582; SP 582; T 582-583</p>
<b>Transforming Shapes</b>	
<ul style="list-style-type: none"> <li>Use a <b>translation, a reflection, or a rotation</b> to map one figure onto</li> </ul>	<p><b>Student Edition:</b> 578-581, 582-585, 586-590, 591-593 <i>Start Smart</i> 11</p> <p><b>Teacher Edition:</b> 5MC 586A; A 585; E 583, 587; HP 585; I 582; R 582, 586; SP 582, 586; T 578-579, 582-583, 586-587</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Recognize, identify, and describe geometric relationships and properties, as they exist in nature, art, and other real-world settings.</li> </ul>	<p><b>Student Edition:</b> 585, 589, 591-593, 566-569, 570-573</p> <p><b>Teacher Edition:</b> E 579</p>
<b>Coordinate Geometry</b>	
<ul style="list-style-type: none"> <li>Create geometric shapes with specified properties in the first quadrant on a coordinate grid.</li> </ul>	<p><b>Student Edition:</b> 578-581, 582-585, 586-590</p> <p><b>Teacher Edition:</b> 5MC 582A, 586A; A 581, 585; E 583, 587; HP 581, 585; R 578, 582, 586; SP 578, 582; T 578-579, 582-583</p>
<b>UNITS OF MEASUREMENT</b>	
<ul style="list-style-type: none"> <li>Select and use appropriate units to measure <b>angles and area</b></li> </ul>	<p><b>Student Edition:</b> 564-565, 612-615, 616-619 <i>Extend</i> 620-621</p> <p><b>Teacher Edition:</b> HP 615, 619; I 620; SP 612, 616; T 612-613, 616-617</p>
<ul style="list-style-type: none"> <li>Convert measurement units within a system – feet to inches</li> </ul>	<p><b>Student Edition:</b> 477-480, 484-487, 488-490, 492-495, 524-526, 527-530 <i>Game Time</i> 531</p> <p><b>Teacher Edition:</b> 5MC 482A, 488A; A 480; E 485; HP 480, 487; R 477, 484; SP 477, 484; T 477-478, 484-485, 488-489</p>
<ul style="list-style-type: none"> <li>Know approximate equivalents between the standard and metric systems (e.g. one kilometer is approximately 6/10 of a mile)</li> </ul>	<p><b>Student Edition:</b> 537-541</p> <p><b>Teacher Edition:</b> IWO 608B Option 1, 631B Option 1; HP 540; R 537; SP 537; T 537-538</p>
<ul style="list-style-type: none"> <li>Use measurements and estimates to describe and compare phenomena</li> </ul>	<p><b>Student Edition:</b> 522-523, 544-545, 612-615 <i>Explore</i> 475-476, 515-516 <i>Game Time</i> 481</p>

STANDARDS	PAGE REFERENCES
<b>LENGTH</b>	
<ul style="list-style-type: none"> <li>Fractions of an <b>inch, foot, mile, decimeter, kilometer</b> (<math>\frac{1}{8}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>),</li> </ul>	<p><b>Student Edition:</b> 477-480, 515-516, 517-521 <i>Explore</i> 475-476</p> <p><b>Teacher Edition:</b> A 480; HP 480; SP 477; T 478</p>
<ul style="list-style-type: none"> <li>Measure and calculate: Area, length, width using <b>ruler or yardstick, one inch squares, one centimeter squares</b></li> </ul>	<p><b>Student Edition:</b> 612-615, 616-619, 620-621 <i>Extend</i> 620-621 <i>Game Time</i> 622</p> <p><b>Teacher Edition:</b> E 613, 617; R 612; SP 612; T 612-613</p>
<ul style="list-style-type: none"> <li>Explore problems using: inches, feet, yards and mile; millimeters, centimeters, meters, kilometers</li> </ul>	<p><b>Student Edition:</b> 477-480, 517-521 <i>Explore</i> 475-476, 515-516</p> <p><b>Teacher Edition:</b> E 478, 579; HP 480, 519; R 477, 518; SP 477, 518; T 477-478, 517-518</p>
<ul style="list-style-type: none"> <li>Add and subtract customary units of length and width</li> </ul>	<p><b>Student Edition:</b> 608-611 <i>Explore</i> 607</p> <p><b>Teacher Edition:</b> 5MC 612A; E 478; HP 611; R 608; SP 608; T 608-609</p>
<ul style="list-style-type: none"> <li>Incorporate estimation in measurement activities</li> </ul>	<p><b>Student Edition:</b> 612-615</p> <p><b>Teacher Edition:</b> 5MC 616A; A 615; R 612; SP 612; T 612-613</p>
<b>CAPACITY</b>	
<ul style="list-style-type: none"> <li>Solve word problems for: ounce, cup, pint, quart, gallon,</li> </ul>	<p><b>Student Edition:</b> 488-490, 506 #27</p> <p><b>Teacher Edition:</b> PS 488B; SP 488; T 489</p>
<ul style="list-style-type: none"> <li>Solve problems for milliliter, liter, kiloliter</li> </ul>	<p><b>Student Edition:</b> 527-530</p> <p><b>Teacher Edition:</b> 5MC 533A; A 530; E 528; HP 530; PS 427B; R 527; SP 527; T 527-528</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Incorporate estimation in measurement activities</li> </ul>	<b>Student Edition:</b> 528-529
<b>MASS</b>	
<ul style="list-style-type: none"> <li>Measure and calculate: Volume using one inch cubes and one centimeter cubes</li> </ul>	<b>Student Edition:</b> 631-635 <i>Explore</i> 630 <b>Teacher Edition:</b> E 528; R 631; SP 631
<ul style="list-style-type: none"> <li>Solve problems using milligrams, grams, kilograms</li> </ul>	<b>Student Edition:</b> 524-526, 548 <b>Teacher Edition:</b> 5MC 527A; E 524; HP 526; R 524; SP 524; T 524-525
<ul style="list-style-type: none"> <li>Incorporate estimation in measurement activities</li> </ul>	<b>Student Edition:</b> 525 #11, 526 #28, 634 #21 <b>Teacher Edition:</b> PS 524B
<b>WEIGHT</b>	
<ul style="list-style-type: none"> <li>Ounce, pounds, ton</li> </ul>	<b>Student Edition:</b> 484-487 <b>Teacher Edition:</b> 5MC 488A; A 487; DI 484B; E 485; HP 487; R 484; SP 484; T 484-485
<ul style="list-style-type: none"> <li>Incorporate estimation in measurement activities</li> </ul>	<b>Teacher Edition:</b> DI 484B Option 1 and 2
<b>VOLUME</b>	
<ul style="list-style-type: none"> <li>Cubic inch, cubic centimeter</li> </ul>	<b>Student Edition:</b> 631-635, 644-647, 653, 654 <b>Teacher Edition:</b> 5MC 640A, 648A; A 634; E 632; HP 634; R 631; SP 631; T 631-632, 644-645
<ul style="list-style-type: none"> <li>Incorporate estimation in measurement activities</li> </ul>	<b>Student Edition:</b> 632 Example 2, 634 #22, 635 #28

STANDARDS		PAGE REFERENCES
<b>AREA</b>		
<ul style="list-style-type: none"> <li>Square inch, square centimeter</li> </ul>	<p><b>Student Edition:</b> 612-615, 616-619, 640-643, 644-647 <i>Gamed Time</i> 622</p> <p><b>Teacher Edition:</b> 5MC 616A, 624A; HP 615, 619; R 612, 616, 640; SP 612, 617, 640; T 617, 641, 645</p>	
<ul style="list-style-type: none"> <li>Incorporate estimation in measurement activities</li> </ul>	<p><b>Student Edition:</b> 613-615 <i>Game Time</i> 622</p> <p><b>Teacher Edition:</b> 5MC 616A; HP 612; IWO 612B Option 1; R 612; SP 612</p>	
<b>TIME</b>		
<ul style="list-style-type: none"> <li>Solve problems involving elapsed time within a twelve hour period</li> </ul>	<p><b>Student Edition:</b> 497 #8, 500-503 <i>Problem Solving</i> 499 <i>Smart Start</i> 8</p> <p><b>Teacher Edition:</b> A 503; DI 500B; HP 503; I 500; R 500; SP 500; T 500-501</p>	
<ul style="list-style-type: none"> <li>Measure and calculate: <b>Elapsed time</b> to the nearest five minutes during the same twelve hour period</li> </ul>	<p><b>Student Edition:</b> 500-503 <i>Problem Solving</i> 499</p> <p><b>Teacher Edition:</b> A 503; DI 500B; E 501; I 500; T 500-501</p>	
<b>TEMPERATURE</b>		
<ul style="list-style-type: none"> <li>Read and interpret thermometers by both positive and negative degrees</li> </ul>	<p><b>Student Edition:</b> 537-541</p> <p><b>Teacher Edition:</b> HP 540; R 537; SP 537; T 538</p>	
<ul style="list-style-type: none"> <li>Read thermometer in Fahrenheit and Celsius</li> </ul>	<p><b>Student Edition:</b> 537-541</p> <p><b>Teacher Edition:</b> HP 540; R 537; SP 537; T 538</p>	
<ul style="list-style-type: none"> <li>Read temperatures below 0°</li> </ul>	<p><b>Student Edition:</b> 533-534</p> <p><b>Teacher Edition:</b> R 533</p>	

STANDARDS	PAGE REFERENCES
<b>Measuring Geometric Objects</b>	
<ul style="list-style-type: none"> <li>Use a <b>protractor</b> to measure angles.</li> </ul>	<b>Student Edition:</b> <i>Explore</i> 564-565
<ul style="list-style-type: none"> <li>Develop and apply strategies and <b>formulas</b> for finding perimeter and area of squares and rectangles</li> </ul>	<b>Student Edition:</b> 609-611, 616-617 <i>Explore</i> 607 <i>Game Time</i> 622 <b>Teacher Edition:</b> 5MC 612A; DI 616B; HP 611, 619; I 616; R 608, 616; SP 608, 616; T 609, 616-617
<ul style="list-style-type: none"> <li>Recognize that rectangles with the same perimeter do not necessarily have the same area and vice versa</li> </ul>	<b>Student Edition:</b> 618 #17, 649 #6-#7 <b>Teacher Edition:</b> A 619; DI 612B Option 2
<ul style="list-style-type: none"> <li>Develop informal ways of approximating the measures of familiar objects (e.g. use a grid to approximate the area of the bottom of one's foot</li> </ul>	The following references discuss the areas of irregular shapes and may be used to meet this objective. <b>Student Edition:</b> 612-615 <b>Teacher Edition:</b> 5MC 616A; DI 612B; HP 615; R 612; SP 612; T 612-613
<b>STANDARD 4.3 (PATTERNS AND ALGEBRA) ALL STUDENTS WILL REPRESENT AND ANALYZE RELATIONSHIPS AMONG VARIABLE QUANTITIES AND SOLVE PROBLEMS INVOLVING PATTERNS, FUNCTIONS, AND ALGEBRAIC CONCEPTS AND PROCESSES.</b>	
Building upon knowledge and skills gained in preceding grades, by the end of <b>Grade 5</b> , students will:	
<b>Patterns</b>	
<ul style="list-style-type: none"> <li>Recognize, describe, extend, and create patterns involving whole numbers: Descriptions using tables, verbal rules, simple equations and graphs</li> </ul>	<b>Student Edition:</b> 103-105, 149-150, 395 #6 and #11, 401 #2, 413 #35, 545 #7, 577 #11, 649 #2 <i>Start Smart</i> 6-7 <b>Teacher Edition:</b> DI 103B; HP 105; I 103; R 104, 150; SP 104, 150; T 103-104, 149-150

STANDARDS	PAGE REFERENCES
<b>Functions and Relationships</b>	
<ul style="list-style-type: none"> <li>Describe arithmetic operations as functions, including combining operations and reversing them.</li> </ul>	<p><b>Student Edition:</b> 210-213, 218-222, 260-262 <i>Explore</i> 208-209 <i>Extend</i> 214-215 <i>Problem Solving</i> 217</p> <p><b>Teacher Edition:</b> 5MC 218A; A 209, 213; DI 210B; HP 213, 221; R 210; SP 210; T 210-211, 219</p>
<ul style="list-style-type: none"> <li>Graph points satisfying a function from T-charts, from verbal rules, and from simple equations</li> </ul>	<p><b>Student Edition:</b> 254-257 <i>Problem Solving</i> 258-259</p> <p><b>Teacher Edition:</b> 5MC 260A; A 257; DI 254B; HP 257; R 254; SP 254; T 255</p>
<b>Modeling</b>	
<ul style="list-style-type: none"> <li>Use number sentences to model situations.             <ol style="list-style-type: none"> <li>Using variables to represent unknown quantities</li> <li>Using concrete materials, tables, graphs, verbal rules, algebraic expressions/equations</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 193-195, 198-201, 202-204</p> <p><b>Teacher Edition:</b> 5MC 202A; A 195, 201; HP 195; R 194, 198, 202; SP 194, 198; T 193-194, 198-199, 202-203</p>
<ul style="list-style-type: none"> <li>Draw freehand sketches of graphs that model real phenomena and use such graphs to predict and interpret events             <ol style="list-style-type: none"> <li>Model changes over time</li> <li>Model rates of change (e.g., when is plant growing slowly/rapidly, when is temperature dropping most rapidly/slowly)</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 306-310, 312-317, 320-321</p> <p><b>Teacher Edition:</b> 5MC 312A; A 316; DI 306B; HP 309; I 306; R 306; SP 306; T 306-307, 314</p>
<b>Procedures</b>	
<ul style="list-style-type: none"> <li>Solve simple linear equations with manipulatives             <ol style="list-style-type: none"> <li>Solve problems with whole-number coefficients only</li> <li>Solve problems with variables on one side of equation</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 237, 244 <i>Explore</i> 235-236, 242-243 <i>Extend</i> 240-241</p> <p><b>Teacher Edition:</b> DI 237B; I 240, 242, 244; T 237, 240, 242</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Solve simple linear equations using mental math</li> </ul>	<p><b>Student Edition:</b> 237-239 <i>Are You Ready</i> 234</p> <p><b>Teacher Edition:</b> 5MC 244A, 248A; A 239, 247; E 239, 245; HP 239, 247; R 238, 244; SP 238, 244; T 238, 244-245</p>
<p><b>STANDARD 4.4 (DATA ANALYSIS, PROBABILITY, AND DISCRETE MATHEMATICS) ALL STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE CONCEPTS AND TECHNIQUES OF DATA ANALYSIS, PROBABILITY, AND DISCRETE MATHEMATICS, AND WILL USE THEM TO MODEL SITUATIONS, SOLVE PROBLEMS, AND ANALYZE AND DRAW APPROPRIATE INFERENCES FROM DATA.</b></p>	
<p>Building upon knowledge and skills gained in preceding grades, by the end of Building upon knowledge and skills gained in preceding grades, by the end of</p>	
<p><b>Data Analysis</b></p>	
<ul style="list-style-type: none"> <li>Collect, generate, organize, and display data. Data generated from surveys</li> </ul>	<p><b>Student Edition:</b> 279-281, 284-288, 289-292, 294-298, 299-303, 306-310, 312-317, 320-321</p> <p><b>Teacher Edition:</b> HP 287, 292, 299, 321; SP 320; T 285</p>
<ul style="list-style-type: none"> <li>Read, interpret, select, construct, analyze, generate questions about, and draw inferences from displays of data: Bar graph, line graph, circle graph, table <b>Range, median, and mean</b></li> </ul>	<p><b>Student Edition:</b> 279-281, 284-288, 289-292, 294-298, 299-303, 306-310, 312-317, 320-321</p> <p><b>Teacher Edition:</b> E 300; HP 303, 309; R 299; SP 299, 306; T 284-285, 289-290</p>
<ul style="list-style-type: none"> <li>Respond to questions about data and have students generate their own questions and hypotheses.</li> </ul>	<p><b>Student Edition:</b> 279-281, 284-288, 289-292, 294-298, 299-303, 306-310, 312-317, 320-321</p> <p><b>Teacher Edition:</b> A 281, 287, 292, 297, 303, 310, 316; T 279-280, 284-285, 289-290</p>
<p><b>Probability</b></p>	
<ul style="list-style-type: none"> <li>Determine probabilities of events.             <ol style="list-style-type: none"> <li>Event, probability of an event</li> <li>Probability of certain event is 1 and of impossible event is 0</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 658, 661-663, 668-672 <i>Are You Ready</i> 660</p> <p><b>Teacher Edition:</b> 5MC 674A; A 671; E 669; HP 663, 671; R 668; SP 662, 668; T 661-662, 668-669</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Determine probability using intuitive, experimental, and theoretical methods (e.g., using model of picking items of different colors from a bag).               <ol style="list-style-type: none"> <li>Given numbers of various types of items in a bag, what is the probability that an item of one type will be picked</li> <li>Given data obtained experimentally, what is the likely distribution of items in the bag</li> </ol> </li> </ul>	<p><b>Student Edition:</b> 658, 661-663, 668-672 <i>Explore</i> 666-667</p> <p><b>Teacher Edition:</b> A 671; E 669; HP 671; I 661; R 668; SP 668; T 661-662, 668-669</p>
<ul style="list-style-type: none"> <li>Model situations involving probability using simulations (with spinners, dice) and theoretical models.</li> </ul>	<p><b>Student Edition:</b> <i>Explore</i> 666-667 <i>Extend</i> 673</p> <p><b>Teacher Edition:</b> I 661, 668; IWO 661B; T 661</p>
<b>Discrete Mathematics—Systematic Listing and Counting</b>	
<b>Systematic Listing and Counting</b>	
<ul style="list-style-type: none"> <li>Solve counting problems and justify that all possibilities have been enumerated without duplication. Use organized lists, charts, tree diagrams, tables</li> </ul>	<p><b>Student Edition:</b> 677-680, 682-683</p> <p><b>Teacher Edition:</b> 5MC 682A; DI 677B; E 679; HP 680; I 677, 682; R 678; SP 678; T 677-678</p>
<ul style="list-style-type: none"> <li>Explore the multiplication principle of counting in simple situations by representing all possibilities in an organized way (e.g., you can make <math>3 \times 4 = 12</math> outfits using 3 shirts and 4 skirts).</li> </ul>	<p><b>Teacher Edition:</b> E 679</p>
<b>Vertex-Edge Graphs and Algorithms</b>	
<ul style="list-style-type: none"> <li>Devise strategies for winning simple games (e.g., start with two piles of objects, each of two players in turn removes any number of objects from a single pile, and the person to take the last group of objects wins) and express those strategies as sets of directions.</li> </ul>	<p>See <i>Math Connects 4</i> © 2009.</p> <p><b>Student Edition:</b> 35, 75, 115, 175, 217, 245, 299, 339, 379, 425, 463, 511, 552, 605, 621</p> <p><i>Game Time</i> 35, 75, 115, 175, 217, 245, 299, 339, 379, 425, 463, 511, 552, 605, 621</p>

STANDARDS	PAGE REFERENCES
<p><b>STANDARD 4.5 (MATHEMATICAL PROCESSES) ALL STUDENTS WILL USE MATHEMATICAL PROCESSES OF PROBLEM SOLVING, COMMUNICATION, CONNECTIONS, REASONING, REPRESENTATIONS, AND TECHNOLOGY TO SOLVE PROBLEMS AND COMMUNICATE MATHEMATICAL IDEAS</b></p>	
<p>At each grade level, with respect to content appropriate for that grade level, students will:</p>	
<p><b>PROBLEM SOLVING</b></p>	
<ul style="list-style-type: none"> <li>Learn mathematics through problem solving, inquiry, and discovery.</li> </ul>	<p><b>Student Edition:</b> 24-25, 48-49, 74-75, 136-137, 180-181, 206-207, 266-267, 282-283, 354-355, 360-361, 400-401, 456-457, 496-497, 542-543, 544-545, 576-577, 648-649</p>
<ul style="list-style-type: none"> <li>Solve problems that arise in mathematics and in other contexts (cf. workplace readiness standard 8.3).             <ul style="list-style-type: none"> <li>Open-ended problems</li> <li>Non-routine problems</li> <li>Problems with multiple solutions</li> <li>Problems that can be solved in several ways</li> </ul> </li> </ul>	<p><b>Student Edition:</b> 24-25, 74-75, 120-121, 130-131, 136-137, 178-179, 180-181, 196-197, 206-207, 248-249, 258-259, 360-361, 394-395, 496-497, 522-523, 562-563, 628-629, 648-649</p>
<ul style="list-style-type: none"> <li>Select and apply a variety of appropriate problem-solving strategies (e.g., “try a simpler problem” or “make a diagram”) to solve problems.</li> </ul>	<p><b>Student Edition:</b> 48-49, 68-69, 120-121, 166-167, 196-197, 248-249, 282-283, 320-321, 344-345, 394-395, 442-443, 456-457, 482-483, 522-523, 628-629, 674-675</p>
<ul style="list-style-type: none"> <li>Pose problems of various types and levels of difficulty.</li> </ul>	<p><b>Student Edition:</b> 24-25, 48-49, 74-75, 136-137, 180-181, 206-207, 266-267, 282-283, 354-355, 360-361, 400-401, 456-457, 496-497, 542-543, 544-545, 576-577, 648-649</p>
<ul style="list-style-type: none"> <li>Monitor their progress and reflect on the process of their problem solving activity.</li> </ul>	<p><b>Student Edition:</b> 48-49, 68-69, 120-121, 166-167, 196-197, 248-249, 282-283, 320-321, 344-345, 394-395, 442-443, 456-457, 482-483, 522-523, 628-629, 674-675</p>
<p><b>COMMUNICATION</b></p>	
<ul style="list-style-type: none"> <li>Use communication to organize and clarify their mathematical thinking, reading and writing, discussions, listening, and questioning.</li> </ul>	<p><b>Student Edition:</b> 27 #10, 29 #10, 86 #7, 90 #29, 109 #11, 119 #25, 195 #24, 245 #8, 295 #4, 375 #10, 387 #10, 435 #14, 440 #10, 489 #10, 495 #37, 526 #30, 569 #24</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Communicate their mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing.</li> </ul>	<p><b>Student Edition:</b> 37 #11, 66 #32, 71 #8, 86 #7, 89 #10, 105 #40, 114 #13, 150 #11, 255 #8, 375 #31, 441 #30, 453 #8, 460 #5, 565 #8, 614 #5</p>
<ul style="list-style-type: none"> <li>Analyze and evaluate the mathematical thinking and strategies of others.</li> </ul>	<p><b>Student Edition:</b> 30 #32, 90 #29, 110 #31, 115 #30, 164 #19, 212 #14, 239 #29, 262 #12, 303 #24, 317 #16, 384 #33, 399 #32, 436 #32, 450 #24, 461 #22, 490 #28, 562 #29, 647 #13</p>
<ul style="list-style-type: none"> <li>Use the language of mathematics to express mathematical ideas precisely.</li> </ul>	<p><b>Student Edition:</b> 31 #18, 62 #10, 133 #8, 194 #7, 251 #8, 293 #8, 380 #12, 383 #11, 392 #8, 399 #39, 441 #30, 575 #15, 633 #7, 639 #4, 640 #6</p>
<b>CONNECTIONS</b>	
<ul style="list-style-type: none"> <li>Recognize recurring themes across mathematical domains (e.g., patterns in number, algebra, and geometry).</li> </ul>	<p><b>Student Edition:</b> 103-105, 149-151, 210-213, 254-257, 260-262 <i>Extend</i> 264-265 <i>Start Smart</i> 7 <b>Teacher Edition:</b> T 103-104, 149-150</p>
<ul style="list-style-type: none"> <li>Use connections among mathematical ideas to explain concepts (e.g., two linear equations have a unique solution because the lines they represent intersect at a single point).</li> </ul>	<p><b>Student Edition:</b> 28-29, 108-111, 210-213, 254-257, 260-262, 333-335, 338-342, 640-643 <i>Explore</i> 26-27, 638-639</p>
<ul style="list-style-type: none"> <li>Recognize that mathematics is used in a variety of contexts outside of mathematics.</li> </ul>	<p><b>Student Edition:</b> 82 #23-#25, 256 #21-#25, 398 #29-#30, 460 #19-#20, 569 #19-#20, 585 #16-#17, 647 #11-#12 <i>Problem Solving</i> 462-463, 498-499, 542-543, 594-595, 636-637 <i>Project 2</i> P4-P5</p>
<ul style="list-style-type: none"> <li>Apply mathematics in practical situations and in other disciplines.</li> </ul>	<p><b>Student Edition:</b> 63 #29-#32, 115 #36-#39, 172 #13-#15, 393 #26-#28, 521 #33-#35, 589 #19-#21 <i>Problem Solving</i> 40-41, 76-77, 130-131, 178-179, 216-217, 258-259, 304-305, 354-355, 408-409, 462-463</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Trace the development of mathematical concepts over time and across cultures (cf. world languages and social studies standards).</li> </ul>	<p><b>Student Edition:</b> 479 #25-#28 <i>Problem Solving</i> 258-259, 354-355, 408-409, 594-595 <i>Project 1</i> P2-P3</p>
<ul style="list-style-type: none"> <li>Understand how mathematical ideas interconnect and build on one another to produce a coherent whole.</li> </ul>	<p><b>Student Edition:</b> 38 #37, 123 #10, 161 #34, 209 #13, 340 #10, 353 #36, 358 #36, 377 #11, 406 #10, 551 #25</p>
<b>REASONING</b>	
<ul style="list-style-type: none"> <li>Recognize that mathematical facts, procedures, and claims must be justified.</li> </ul>	<p><b>Student Edition:</b> 28-30, 36-39, 80-82, 132-135, 237-239, 244-247, 640-643, 644-647 <i>Explore</i> 26-27, 106-107, 638-639</p>
<ul style="list-style-type: none"> <li>Use reasoning to support their mathematical conclusions and problem solutions.</li> </ul>	<p><b>Student Edition:</b> 24-25, 74-75, 133-135, 136-137, 175, 266-267, 456-457, 522-523, 648-649 <b>Teacher Edition:</b> T 24-25, 74, 136, 266-267, 456-457</p>
<ul style="list-style-type: none"> <li>Select and use various types of reasoning and methods of proof.</li> </ul>	<p>See <i>Math Connects 4</i> © 2009. <b>Student Edition:</b> 2-3, 4-5, 6-7, 8-9, 10-11, 12-13, 26-27, 102-103, 134, 280-281, 302, 320-321, 348, 366-367, 386, 404-405, 430, 446-447, 474, 502-503, 527, 544-545, 586-587, 626-627</p>
<ul style="list-style-type: none"> <li>Rely on reasoning, rather than answer keys, teachers, or peers, to check the correctness of their problem solutions.</li> </ul>	<p><b>Student Edition:</b> 24-25, 74-75, 133-135, 136-137, 175, 266-267, 456-457, 522-523, 648-649 <b>Teacher Edition:</b> T 24-25, 74, 136, 266-267, 456-457</p>
<ul style="list-style-type: none"> <li>Make and investigate mathematical conjectures.</li> </ul>	<p>See <i>Math Connects 4</i> © 2009. <b>Student Edition:</b> 25 #11, 31 #18, 57 #26-#27, 61 #29-#30, 67 #21, 82 #25-#26, 97 #14, 117 #5, 126 #10-#11, 149 #27, 153 #24, 162 #31-#34, 179 #37-#38, 200 #27, 206 #15, 210 #18-#19, 222 #15, 239 #29, 244 #30, 298 #23-#24, 376-378</p>
<ul style="list-style-type: none"> <li>Counterexamples as a means of disproving conjectures.</li> </ul>	<p>See <i>Math Connects 4</i> © 2009. <b>Student Edition:</b> 378 #23-#24</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Verifying conjectures using informal reasoning or proofs.</li> </ul>	<p>See <i>Math Connects 4</i> © 2009.</p> <p><b>Student Edition:</b> 20-21, 25 #41, 31 #18, 39 #26, 41 #11, 55-57, 67 #21, 82 #25-#26, 126 #10-#11, 153 #24-#25, 162 #32 &amp; #34, 206 #15, 222 #15, 239 #29, 244 #30, 275 #31, 279 #31, 298 #23-#24, 378, 403 #19-#21, 420 #16, 434 #21</p>
<ul style="list-style-type: none"> <li>Evaluate examples of mathematical reasoning and determine whether they are valid.</li> </ul>	<p>See <i>Math Connects 4</i> © 2009.</p> <p><b>Student Edition:</b> 39 #26, 57 #24-#25, 82 #25, 101 #17, 153 #25, 162 #34, 174 #35, 200 #27, 255 #34, 261 #29, 290 #25, 298 #23-#24, 315 #32, 329 #30, 365 #28, 403 #19-#21, 420 #16, 471 #29, 523 #15, 543 #23, 551 #30, 563 #30, 585 #34, 604 #26</p>
<b>REPRESENTATIONS</b>	
<ul style="list-style-type: none"> <li>Create and use representations to organize, record, and communicate mathematical ideas.</li> </ul>	<p><b>Student Edition:</b> 120-121, 210-213, 218-222, 248-249, 254-257, 260-262, 320-321, 482-483</p> <p><b>Teacher Edition:</b> HP 213, 257; R 210, 254; SP 210, 254; T 210-211, 254-255</p>
<ul style="list-style-type: none"> <li>Concrete representations (e.g., base-ten blocks or algebra tiles)</li> </ul>	<p><b>Student Edition:</b> 28-30, 237, 378-380 <i>Explore</i> 26-27, 78-79, 106-107, 156-157, 168-169, 235-236, 242-243, 336-337, 376-377, 421-422, 426-427, 432-433, 437-438</p> <p><b>Teacher Edition:</b> DI 237B</p>
<ul style="list-style-type: none"> <li>Pictorial representations (e.g., diagrams, charts, or tables)</li> </ul>	<p><b>Student Edition:</b> 120-121, 248-249, 320-321, 482-483</p> <p><b>Teacher Edition:</b> HP 121, 249, 321, 483; R 482; SP 120, 248, 320, 482; T 120, 248</p>
<ul style="list-style-type: none"> <li>Symbolic representations (e.g., a formula)</li> </ul>	<p><b>Student Edition:</b> 609-611, 616-619, 631-635, 640-643, 644-647</p> <p><b>Teacher Edition:</b> A 611, 619, 634; R 616, 631; T 608-609, 616-617, 631-632</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> <li>Graphical representations (e.g., a line graph)</li> </ul>	<p><b>Student Edition:</b> 254-257, 306-310, 312-317 <i>Extend</i> 264-265, 318-319</p> <p><b>Teacher Edition:</b> DI 306B; E 307; HP 257, 309, 314; R 254, 306; SP 254, 306; T 254-255, 306-307, 312-314</p>
<ul style="list-style-type: none"> <li>Select, apply, and translate among mathematical representations to solve problems.</li> </ul>	<p><b>Student Edition:</b> 120-121, 210-211, 248-249, 254-257, 260-262, 306-310, 312-317, 320-321, 482-483, 609-611, 631-635, 640-643, 644-647 <i>Explore</i> 638-639</p>
<ul style="list-style-type: none"> <li>Use representations to model and interpret physical, social, and mathematical phenomena.</li> </ul>	<p><b>Student Edition:</b> 28-30, 36-39, 180-181, 206-207, 248-249, 306-310, 312-317, 482-483, 628-629 <i>Explore</i> 106-107, 168-169, 208-209</p> <p><b>Teacher Edition:</b> HP 249, 309, 314; SP 248, 306</p>
<b>TECHNOLOGY</b>	
<ul style="list-style-type: none"> <li>Use technology to gather, analyze, and communicate mathematical information.</li> </ul>	<p><b>Student Edition:</b> <i>Extend</i> 214-215, 264-265, 318-319, 402-403, 536, 673</p>
<ul style="list-style-type: none"> <li>Use computer spreadsheets, software, and graphing utilities to organize and display quantitative information (cf. workplace readiness standard 8.4-D).</li> </ul>	<p><b>Student Edition:</b> <i>Extend</i> 214-215, 264-265, 318-319, 402-403, 536, 673</p>
<ul style="list-style-type: none"> <li>Use graphing calculators and computer software to investigate properties of functions and their graphs.</li> </ul>	<p><b>Student Edition:</b> <i>Extend</i> 214-215, 264-265</p>
<ul style="list-style-type: none"> <li>Use calculators as problem-solving tools (e.g., to explore patterns, to validate solutions).</li> </ul>	<p><b>Student Edition:</b> 133-135, 175, 206-207</p> <p><b>Teacher Edition:</b> A 135; T 133</p>
<ul style="list-style-type: none"> <li>Use computer software to make and verify conjectures about geometric objects.</li> </ul>	<p>See <i>Math Connects 4</i> © 2009.</p> <p><b>Student Edition:</b> 68, 131, 335, 421 <i>Technology Activity</i> 68, 131, 335, 421</p>
<ul style="list-style-type: none"> <li>Use computer-based laboratory technology for mathematical applications in the sciences (cf. science standards)</li> </ul>	<p>This objective can be met through classroom activities.</p>