



Math Connects

Concepts, Skills, and Problem Solving
Course 2
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STANDARDS	PAGE REFERENCES
<p>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.</p>	
<p>Building upon knowledge and skills gained in preceding grades, by the end of Grade 7, students will:</p>	
<p><u>Number Sense</u></p>	
<p>NUMBER SENSE</p>	
<ul style="list-style-type: none"> Extend understanding of the number system by constructing meanings for the following: <ol style="list-style-type: none"> Rational numbers Whole numbers with exponents 	<p>Student Edition: 30-33, 34-37, 71-72, 181-184, 192-195, 196-200, 202-205, 211-214, 215-220, 281, LA2-LA5 <i>Get Ready for the Lesson</i> 30, LA2 <i>Looking Ahead</i> LA2-LA5 <i>Mini Lab</i> 215</p>
<ul style="list-style-type: none"> Read and write numbers through trillions place in standard, written, expanded and exponential form 	<p>Student Edition: 30-33, 34-37, 128-133, 171, 173, 196-200, 201, 202-205, 206-210, 215-220, 281, LA2-LA5 <i>Get Ready for the Lesson</i> 196, 206, LA2 <i>Looking Ahead</i> LA2-LA5 <i>Reading Math</i> 34, 129 <i>Study Tip</i> 206, 207</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> • Round numbers to the nearest trillions; trillionths 	<p>Student Edition: 215-220, 230-235, 328-332, 341, 344-348, 350, 368, 735, LA2-LA5 <i>Get Ready for the Lesson</i> 350 <i>Looking Ahead</i> LA2-LA5</p>
<ul style="list-style-type: none"> • Use the number line to order and compare numbers 	<p>Student Edition: 52, 80-83, 88-92, 95-99, 100, 103-106, 107-111, 120-121, 167, 215-220, 230-231, 276 #4, 672, 741 <i>Mini Lab</i> 103, 215</p>
<ul style="list-style-type: none"> • Explore the use of scientific notation in place value 	<p>Student Edition: LA2-LA5 <i>Get Ready for the Lesson</i> LA2-LA5 <i>Looking Ahead</i> LA2-LA5 <i>Study Tip</i> LA3</p>
<ul style="list-style-type: none"> • Understand and apply ordinals, nominal and cardinal numbers 	<p>Student Edition: 44-47, 57-61, 128-133 <i>Mini Lab</i> 44</p>
<ul style="list-style-type: none"> • Understand the role of zero as the point of origin 	<p>Student Edition: 80-83, 83-84, 88-92, 120-121, 215-220, 230-231</p>
<ul style="list-style-type: none"> • Use positive and negative numbers to describe relative positions, locations, directions; elevation, temperature, yardage, profits and losses 	<p>Student Edition: 80-83, 84-87, 88-92, 95-99, 100, 103-106, 107-111, 124-125, 210 #61 <i>Get Ready for the Lesson</i> 80</p>
<ul style="list-style-type: none"> • Identify properties of real numbers of addition and multiplication 	<p>Student Edition: 53-56, 61, 73, 75, 77 #12, 93-94, 95-99, 108, 136-141, 142-146, 147, 258-263, 265-270, 681 <i>Algebra Lab</i> 93-94 <i>Get Ready for the Lesson</i> 136, 258 <i>Mini Lab</i> 142, 265 <i>Study Tip</i> 54, 97, 108</p>
<ul style="list-style-type: none"> • Perform all operations with real numbers using correct order of operations 	<p>Student Edition: 38-41, 44-47, 48, 52, 53-56, 61, 72-73, 75, 77 #10, 81, 124 #3, 133, 152, 226 #7, 338 #5, 669, 718 <i>Get Ready for the Lesson</i> 38 <i>Mini Lab</i> 44 <i>Study Tip</i> 39, 81, 152</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Perform operations using absolute value 	<p>Student Edition: 80-83, 86, 96, 100, 105 #42, 167 #31, 671 <i>Reading Math</i> 81 <i>Study Tip</i> 81, 96</p>
FRACTIONS	
<ul style="list-style-type: none"> Understand that all fractions can be represented as repeating or terminating decimals 	<p>Student Edition: 192-195, 196-200, 201, 202-205, 206-210, 215-220, 221, 223-224, 225, 230-235, 252-257, 281, 328-332, 336, 341, 677, 678, 679 <i>Get Ready for the Lesson</i> 196 <i>Mini Lab</i> 192, 215 <i>Study Tip</i> 193</p>
<ul style="list-style-type: none"> Use whole numbers, fractions, decimals, and percents to represent equivalent forms of the same number 	<p>Student Edition: 192-195, 196-200, 201, 202-205, 206-210, 214, 215-220, 221, 222-224, 225, 226, 231-235, 250-251, 252-257, 258-263, 266-270, 328-332 <i>Get Ready for the Lesson</i> 196, 206, 328 <i>Math Lab</i> 250-251 <i>Mini Lab</i> 215 <i>Study Tip</i> 193</p>
<ul style="list-style-type: none"> Determine whether fractions are terminating, non-terminating or repeating decimals 	<p>Student Edition: 192-195, 196-200, 201, 202-205, 206-210, 214, 215-220, 221, 223-224, 229, 230-235, 252-257, 258-263, 265-270, 281, 341 <i>Get Ready for the Lesson</i> 196 <i>Mini Lab</i> 215 <i>Study Tip</i> 193 <i>Vocabulary Link</i> 197</p>
<ul style="list-style-type: none"> Know from memory the equivalents of fractions, percents, decimals of the most commonly used numbers: $\frac{1}{4} = 25\% = .25\dots$ 	<p>Student Edition: 192-195, 196-200, 201, 202-205, 206-210, 214, 215-220, 221, 223-224, 225, 230-235, 236-241, 242-246, 276 #3, 328-332 <i>Math Lab</i> 250-251 <i>Mini Lab</i> 215 <i>Study Tip</i> 197, 203, 206, 207</p>

STANDARDS	PAGE REFERENCES
DECIMALS	
<ul style="list-style-type: none"> Read and write decimals using the place value system – through thousandths 	<p>Student Edition: 23, 155, 179, 195, 196-200, 201, 206-210, 214, 215-220, 221, 222-224, 225, 344-348, 355-359, 360-365, 369-374, 375-378, 379-382, 385-388, 389</p> <p><i>Study Tip 197</i> <i>Vocabulary Link 197</i></p>
<ul style="list-style-type: none"> Distinguish between terminating and repeating decimals 	<p>Student Edition: 196-200, 201, 205, 215-220, 221, 223-224, 225, 281, 341, 344-348, 355-359, 360-365, 368, 369-374, 375-378, 379-382, 385-388, 389</p> <p><i>Study Tip 197</i> <i>Vocabulary Link 197</i></p>
RATIO AND PROPORTION	
<ul style="list-style-type: none"> Understand and use ratios, proportions in a variety of real world problems 	<p>Student Edition: 202-205, 210, 282-286, 287-292, 293-297, 298-303, 310-315, 317, 320-326, 327, 328-332, 334-336, 350-354, 369-374, 375-378, 417</p> <p><i>Get Ready for the Lesson 282, 293</i> <i>Mini Lab 287, 320</i> <i>Spreadsheet Lab 327</i> <i>Study Tip 203, 417</i></p>
<ul style="list-style-type: none"> Relate ratio to percents 	<p>Student Edition: 202-205, 210, 328-332, 336, 342-343, 344-348, 349, 350-354, 355-360, 361-365, 369-374, 375-378, 379-382, 383, 385-388, 389</p> <p><i>Get Ready for the Lesson 328, 344</i> <i>Math Lab 342-343</i> <i>Reading Math 202</i> <i>Reading to Solve Problems 349</i> <i>Spreadsheet Lab 383</i> <i>Study Tip 203, 329, 345</i></p>

STANDARDS	PAGE REFERENCES
PERCENT	
<ul style="list-style-type: none"> Extend understanding of the number system by constructing meanings for percent (including percents greater than 100 and less than 1 in a variety of situations) 	<p>Student Edition: 202-205, 206-210, 214, 344-348, 349, 350-354, 355-360, 361-365, 366-367, 368, 369-374, 375-378, 379-382, 383, 385-388, 389</p> <p><i>Get Ready for the Lesson</i> 202, 344, 350, 355, 375</p> <p><i>Mini Lab</i> 369</p> <p><i>Problem-Solving Investigation</i> 366-367</p> <p><i>Reading Math</i> 202</p> <p><i>Reading to Solve Problems</i> 349</p> <p><i>Spreadsheet Lab</i> 383</p> <p><i>Study Tip</i> 203, 206, 207</p>
ROMAN NUMERALS	
<ul style="list-style-type: none"> Explore and memorize the basic roman numerals: ones, tens, hundreds, thousands, millions: 	This objective can be met through classroom discussion and activities.
<ul style="list-style-type: none"> Convert whole numbers to roman numerals up to thousands 	This objective can be met through classroom discussion and activities.
<u>Numerical Operations</u>	
NUMERICAL OPERATIONS	
<ul style="list-style-type: none"> Students must be able to add, subtract, multiply and divide whole numbers with accuracy and speed. Maintenance matters with basic math operations. Always include basic math problems on any quiz or exam 	<p>Student Edition: 23, 38-41, 44-47, 48, 49-52, 61, 71-73, 99, 179, 180, 181-184, 185, 186-189, 192-195, 196-200, 734</p> <p><i>Get Ready for the Lesson</i> 38</p> <p><i>Math Lab</i> 180</p> <p><i>Mini Lab</i> 44, 181</p> <p><i>Reading to Solve Problems</i> 185</p> <p><i>Study Tip</i> 182</p>
<ul style="list-style-type: none"> Do lots of mental math as a warm up to the day's lessons 	<p>Student Edition: 38-41, 42-43, 49-52, 54, 61, 73, 99, 141, 155, 179, 181-184, 185, 186-189, 210, 240, 734</p> <p><i>Get Ready for the Lesson</i> 30, 38</p> <p><i>Mini Lab</i> 181</p> <p><i>Problem-Solving Investigation</i> 42-43</p> <p><i>Reading to Solve Problems</i> 185</p> <p><i>Study Tip</i> 54, 182, 311</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Use exponentiation to find whole number powers of numbers 	<p>Student Edition: 30-33, 37, 38-41, 44-47, 48, 52, 56 #48, 61 #44, 71, 75, 179, 181-184, 226 #3, 571, 635, 737, LA2-LA5</p> <p><i>Get Ready for the Lesson</i> 30 <i>Looking Ahead</i> LA2-LA5 <i>Study Tip</i> LA3</p>
<ul style="list-style-type: none"> Understand and apply the standard algebraic order of operations, including appropriate use of parenthesis 	<p>Student Edition: 38-41, 44-47, 48, 52, 53-56, 61, 72-73, 75, 77 #10, 81, 124 #3, 133, 152, 226 #7, 338 #5, 669, 718</p> <p><i>Get Ready for the Lesson</i> 38 <i>Mini Lab</i> 44 <i>Study Tip</i> 39, 81, 152</p>
<ul style="list-style-type: none"> Use and explain procedures for performing calculations with integers and all number types 	<p>Student Edition: 23, 34-37, 38-41, 44-47, 48, 52, 57-61, 72-74, 75, 79, 80-83, 84-87, 93-94, 95-99, 100, 101-102, 103-106, 107-111, 114-118, 120-122</p> <p><i>Algebra Lab</i> 93-94, 101-102 <i>Get Ready for the Lesson</i> 38 <i>Mini Lab</i> 34, 44, 103, 107, 114 <i>Study Tip</i> 39</p>
FRACTIONS	
<ul style="list-style-type: none"> Review and constantly maintain all fractions – and all operations - with the fractions: Proper, improper, mixed; add, subtract, multiply and divide Note: Students must have be able to do fractions with accuracy and speed in order to move further into math concepts 	<p>Student Edition: 192-195, 196-200, 201, 202-205, 206-210, 215-220, 221, 222-224, 225, 229, 230-235, 236-241, 242-246, 247, 250-251, 252-257, 265-270, 272-274, 275</p> <p><i>Math Lab</i> 250-251 <i>Mini Lab</i> 215 <i>Study Tip</i> 197, 203 <i>Vocabulary Link</i> 197</p>
DECIMALS	
<ul style="list-style-type: none"> Review and constantly maintain all decimals – and all operations with the decimals Note: Students must have be able to do decimals with accuracy and speed in order to move further into math concepts 	<p>Student Edition: 23, 141, 155, 179, 195, 196-200, 201, 205, 206-210, 214, 215-220, 221, 222-224, 225, 229, 735, 736, 737, 738</p> <p><i>Study Tip</i> 197, 206, 207 <i>Vocabulary Link</i> 197</p>

STANDARDS	PAGE REFERENCES
RATIO AND PROPORTION	
<ul style="list-style-type: none"> Apply ratios, direct proportions and percents in a variety of real world problem solving examples that connect to the students' lives 	<p>Student Edition: 202-205, 282-286, 293-297, 310-315, 316, 317, 320-326, 327, 328-332, 334-336, 337, 342-343, 344-348, 349, 350-354, 355-360, 361-365, 369-374, 375-378, 379-382, 383, 385-388</p>
<ul style="list-style-type: none"> Solve real-life situations for missing terms of a proportion 	<p>Student Edition: 310-315, 316, 317, 320-326, 327, 328-332, 334-336, 337, 350-354, 361-365, 385, 417, 540-545, 565, 683, 709</p> <p><i>Math Lab</i> 316 <i>Mini Lab</i> 320, 540 <i>Spreadsheet Lab</i> 327 <i>Study Tip</i> 321, 322, 417</p>
<ul style="list-style-type: none"> Calculate unit price using proportion 	<p>Student Edition: 287-292, 293-297, 303, 311-315, 316, 334, 337, 682, 709</p> <p><i>Get Ready for the Lesson</i> 293 <i>Math Lab</i> 316 <i>Mini Lab</i> 287</p>
PERCENT	
<ul style="list-style-type: none"> Find the number when percent is known 	<p>Student Edition: 202-205, 206-210, 214, 223-224, 225, 342-343, 344-348, 349, 350-354, 355-360, 361-365, 369-374, 375-378, 385-388, 389</p> <p><i>Math Lab</i> 342-343 <i>Reading to Solve Problems</i> 349 <i>Study Tip</i> 203</p>
<ul style="list-style-type: none"> Determine percent of increase or decrease 	<p>Student Edition: 369-374, 375-378, 387, 389, 391, 686, 710</p> <p><i>Get Ready for the Lesson</i> 375 <i>Mini Lab</i> 369 <i>Study Tip</i> 370</p>
<ul style="list-style-type: none"> Solve real world problems from the students' lives using base, rate, percentage, simple interest, discount and commission 	<p>Student Edition: 202-205, 206-210, 344-348, 350-354, 355-360, 361-365, 366-367, 368, 369-374, 375-378, 379-382, 383, 385-388, 389, 391, 401, 408, 443, 569, 726-727</p> <p><i>Problem-Solving Investigation</i> 366-367 <i>Spreadsheet Lab</i> 383</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Calculate sales tax 	<p>Student Edition: 220, 282-286, 287-292, 375-378, 382 #27, 401 #39, 538, 726-727</p> <p><i>Get Ready for the Lesson</i> 375</p> <p><i>Study Tip</i> 375, 376</p>
<ul style="list-style-type: none"> Find distance, rate and time 	<p>Student Edition: 8-9, 142-146, 195 #40, 261 #33, 287-292, 293-297, 320-326, 327, 336, 337, 338-339</p> <p><i>Mini Lab</i> 320</p> <p><i>Spreadsheet Lab</i> 327</p> <p><i>Start Smart</i> 8-9</p>
<p>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.</p>	
<p>Building upon knowledge and skills gained in preceding grades, by the end of Grade 7, students will:</p>	
<p><u>Geometric Properties</u></p>	
<p>PROPERTIES</p>	
<ul style="list-style-type: none"> Understand and apply properties of polygons: <ol style="list-style-type: none"> Regular polygons; Quadrilaterals, including squares, rectangles, parallelograms, trapezoids, rhombi; 	<p>Student Edition: 34, 524-529, 530-531, 532, 533-538, 539, 545, 546-551, 564-565, 567, 694, 743-744, 745-746</p> <p><i>Geometry Lab</i> 532</p> <p><i>Get Ready for the Lesson</i> 533, 546</p> <p><i>Mini Lab</i> 34, 524</p> <p><i>Problem-Solving Investigation</i> 530-531</p> <p><i>Reading Math</i> 547</p> <p><i>Study Tip</i> 525, 547</p> <p><i>Test-Taking Tip</i> 525</p>
<ul style="list-style-type: none"> Understand and apply the concept of similarity: <ul style="list-style-type: none"> Using proportions to find missing measures Doing scale drawings Creating models of 3D objects 	<p>Student Edition: 320-326, 327, 336, 337, 540-545, 551, 565, 567, 695, 654-655, 745-746</p> <p><i>Measuring Lab</i> 654-655</p> <p><i>Mini Lab</i> 320, 540</p> <p><i>Spreadsheet Lab</i> 327</p> <p><i>Study Tip</i> 321, 322, 655</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Use logic and reasoning to make and support conjectures about geometric objects 	<p>Student Edition: 33, 34, 44, 48 #6, 57, 110, 175 #7, 524-529, 530-531, 532, 533-538, 539, 545, 546-551, 564-565, 567, 694, 743-744, 745-746, LA9 #29, LA14-LA17, LA18-LA20 <i>Get Ready for the Lesson</i> LA14-LA18 <i>Looking Ahead</i> LA14-LA17, LA18-LA20 <i>Mini Lab</i> 34, 44, 57 <i>Study Tip</i> LA15, LA19</p>
<u>Transforming Shapes</u>	
<ul style="list-style-type: none"> Understand and apply transformations. <ol style="list-style-type: none"> Find the image, given the pre-image, and vice-versa Find the sequence of transformations needed to map one figure onto another Find reflections, rotations, and translations result in images congruent to the pre-image Find dilations (stretching/shrinking) result in images similar to the pre-image 	<p>Student Edition: 110, 552, 553-557, 558-562, 566, 567, 576, 582, 696, 743-744 <i>Geometry Lab</i> 552 <i>Mini Lab</i> 553, 558 <i>Study Tip</i> 554, 559</p>
<u>Coordinate Geometry</u>	
COORDINATES	
<ul style="list-style-type: none"> Use coordinates in four quadrants to represent geometric concepts 	<p>Student Edition: 92, 110, 125, 175 #7, 552, 553-557, 558-562, 566, 567, 576, 582, 696, 743-744 <i>Geometry Lab</i> 552 <i>Mini Lab</i> 553, 558 <i>Study Tip</i> 554, 559</p>
<ul style="list-style-type: none"> Use a coordinate grid to model and quantify transformations (e.g., translate right 4 units) 	<p>Student Edition: 110, 125, 552, 553-557, 558-562, 566, 567, 576, 582, 696, 743-744 <i>Geometry Lab</i> 552 <i>Mini Lab</i> 553, 558 <i>Study Tip</i> 554, 559</p>

STANDARDS	PAGE REFERENCES
<u>Units of Measurement</u>	
UNITS OF MEASUREMENT	
<ul style="list-style-type: none"> Solve problems requiring calculations that involve different units of measurement within a measurement system (e.g., 4'3" plus 7'10" equals 12'1") 	<p>Student Edition: 43 #5, 160, 298-303, 304-309, 315, 317, 334-336, 337, 320-326, 327, 354, 747 <i>Spreadsheet Lab 327</i></p>
<ul style="list-style-type: none"> Select and use appropriate units and tools to measure quantities to the degree of precision needed in a particular problem-solving situation 	<p>Student Edition: 43 #5, 157-161, 215-220, 298-303, 304-309, 315, 317, 320-326, 327, 334-336, 337, 355-360, 747 <i>Get Ready for the Lesson 355</i> <i>Spreadsheet Lab 327</i> <i>Study Tip 158, 306, 356, 585</i></p>
<ul style="list-style-type: none"> Recognize that all measurements of continuous quantities are approximations 	<p>Student Edition: 215-220, 298-303, 304-309, 320-326, 327, 328-332, 334-336, 337, 355-360, 584-588, 589-593, 697, 698 <i>Get Ready for the Lesson 355</i> <i>Spreadsheet Lab 327</i> <i>Study Tip 306, 356</i></p>
<u>Review, Extend, Use and Maintain all Measures In and Through Problem Solving</u>	
LENGTH	
<ul style="list-style-type: none"> Fractions of an inch, mile, decimeter, kilometer (1/8, 1/4, 1/2) 	<p>Student Edition: 192-195, 196-200, 254-257, 304-309, 230-235, 236-241, 242-246, 247, 248-249, 255-257, 298-303, 304-309, 737, 747 <i>Mini Lab 304</i> <i>Problem-Solving Investigation 248-249</i></p>
<ul style="list-style-type: none"> Measure and calculate: Area, length, width using ruler or yardstick, one inch squares, one centimeter squares 	<p>Student Edition: 32 #33-#34, 33 #44, 157, 160, 162, 194 #25, 250-251, 255-257 <i>Math Lab 250-251</i> <i>Measurement Lab 162</i> <i>Study Tip 157, 158</i></p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Explore problems using: inches, feet, yards and mile, millimeters, centimeters, meters, kilometers 	<p>Student Edition: 34, 36, 44, 57, 48 #6, 125, 157-161, 162, 304-309, 315, 317, 167 #26, 194 #25, 219, 227 #10, 240, 255-257, 298-303, 304-309, 747, 748-749</p> <p><i>Measurement Lab</i> 162 <i>Mini Lab</i> 34, 44, 57, 304 <i>Study Tip</i> 157, 305, 306</p>
<ul style="list-style-type: none"> Add and subtract customary units of length and width 	<p>Student Edition: 156-161, 162, 230-235, 236-241, 242-246, 247, 248-249</p> <p><i>Measurement Lab</i> 162 <i>Problem-Solving Investigation</i> 248-249</p>
CAPACITY	
<ul style="list-style-type: none"> Solve word problems for: ounce, cup, pint, quart gallon, milliliter 	<p>Student Edition: 219, 229 #15, 233, 240 #48, 246 #41, 247, 255-256, 262, 263, 276 #1, 277 #13, 298-303, 304-309, 315, 317, 335, 337, 354, 682, 730-731, 747</p> <p><i>Get Ready for the Lesson</i> 298</p>
<ul style="list-style-type: none"> Solve problems for milliliter, liter, kiloliter 	<p>Student Edition: 304-309, 315, 317, 335, 337, 683, 747</p>
MASS	
<ul style="list-style-type: none"> Measure and calculate: Volume using one inch cubes and one centimeter cubes 	<p>Student Edition: 33, 57, 211, 613-618, 619-623</p> <p><i>Mini Lab</i> 57, 211, 613, 619 <i>Study Tip</i> 615</p>
<ul style="list-style-type: none"> Solve problems using milligrams, grams, kilograms 	<p>Student Edition: 219, 304-309, 310, 315 #51, 317, 335, 337, 747</p> <p><i>Mini Lab</i> 304 <i>Study Tip</i> 305, 306</p>
WEIGHT	
<ul style="list-style-type: none"> Ounce, pounds, ton 	<p>Student Edition: 219, 239 #25, 242, 249, 264, 298-303, 304-309, 335, 337, 354, 747</p> <p><i>Get Ready for the Lesson</i> 242, 298 <i>Reading to Solve Problems</i> 264</p>

STANDARDS	PAGE REFERENCES
VOLUME	
<ul style="list-style-type: none"> Cubic inch, cubic centimeter 	<p>Student Edition: 33, 57, 211, 613-618, 619-623, 700, 701, 714, 748-749 <i>Mini Lab</i> 57, 211, 613, 619 <i>Study Tip</i> 615</p>
AREA	
<ul style="list-style-type: none"> Square inch, square centimeter 	<p>Student Edition: 34, 157-161, 162, 167 #26, 572-576, 577, 578-582, 583, 588, 589-593, 594-595, 596-599, 600-601, 602, 606, 612, 697-699, 714, 748-749 <i>Measurement Lab</i> 162, 577, 583, 600-601 <i>Mini Lab</i> 34, 572, 578, 589 <i>Problem-Solving Investigation</i> 594-595 <i>Study Tip</i> 157</p>
TIME	
<ul style="list-style-type: none"> Solve problems involving elapsed time within a twelve hour period 	<p>Student Edition: 43 #5, 194, 201 #13, 245 #34, 263 #66, 366-367, 421 #36 <i>Problem-Solving Investigation</i> 366-367</p>
<ul style="list-style-type: none"> Measure and calculate: Elapsed time to the nearest five minutes during the same twelve hour period 	<p>Student Edition: 194, 201 #13, 245 #34, 263 #66, 366-367 <i>Problem-Solving Investigation</i> 366-367</p>
TEMPERATURE	
<ul style="list-style-type: none"> Read and interpret thermometers by both positive and negative degrees 	<p>Student Edition: 80, 116, 137, 154, 163-164, 334, 399, 426</p>
<ul style="list-style-type: none"> 32 degrees Fahrenheit = 0 degree Celsius 	<p>Student Edition: 116, 426</p>

STANDARDS	PAGE REFERENCES
Measuring Geometric Objects	
MEASURING OBJECTS	
<ul style="list-style-type: none"> Develop and apply strategies for finding perimeter and area: <ol style="list-style-type: none"> Geometric figures made by combining triangles, rectangles and circles or parts of circles Estimation of area using grids of various sizes 	<p>Student Edition: 34, 36, 37 #37-#38, 44-45, 57, 146 #39, 156-161, 162, 167 #26, 169, 172-173, 572-576, 577, 578-582, 583, 584-588, 589-593, 594-595, 596-599, 600-601, 602</p> <p><i>Measurement Lab</i> 162, 577, 583, 600-601 <i>Mini Lab</i> 34, 44, 57, 572, 578, 589 <i>Problem-Solving Investigation</i> 594-595 <i>Study Tip</i> 157, 158</p>
<ul style="list-style-type: none"> Recognize that the volume of a pyramid or cone is one-third of the volume of the prism or cylinder with the same base and height (e.g. use rice to compare volumes of figures with the same base and height.) 	<p>See <i>Math Connects: Concepts, Skills and Problem Solving Course 3</i> © 2009.</p> <p>Student Edition: 380-384, 407 #21-#24, 409 #12</p>
<p>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.</p>	
<p>Building upon knowledge and skills gained in preceding grades, by the end of Grade 7, students will:</p>	
<p><u>Patterns</u></p>	
PATTERNS	
<ul style="list-style-type: none"> Recognize, describe, extend, and create patterns involving whole numbers, rational numbers, and integers by: <ol style="list-style-type: none"> Using tables, verbal and symbolic rules, graphs, simple equations or expressions Finite and infinite sequences Generating sequences by using calculators to repeatedly apply a formula 	<p>Student Edition: 25-29, 42-43, 44, 56 #49-#51, 57-61, 62, 63-67, 68-69, 74, 75, 112-113, 162, 180, 250</p> <p><i>Algebra Lab</i> 62 <i>Graphing Calculator Lab</i> 68-69 <i>Math Lab</i> 180, 250 <i>Measurement Lab</i> 162 <i>Mini Lab</i> 44, 57 <i>Problem-Solving Investigation</i> 42-43, 112-113 <i>Study Tip</i> 59</p>

STANDARDS	PAGE REFERENCES
<u>Functions and Relationships:</u>	
FUNCTIONS AND RELATIONSHIPS	
<ul style="list-style-type: none"> Graph functions, and understand and describe the general behavior of equations involving two variables 	<p>Student Edition: 62, 63-67, 68-69, 88-92, 162, 163-167, 168, 172, 173, 184 #50, 189, 277 #8, 293-297, 316, 728, 732 #2</p> <p><i>Algebra Lab</i> 62 <i>Graphing Calculator Lab</i> 68-69, 168 <i>Math Lab</i> 316 <i>Measurement Lab</i> 162 <i>Study Tip</i> 64</p>
<u>Modeling</u>	
MODELING	
<ul style="list-style-type: none"> Analyze functional relationships to explain how a change in one quantity can result in a change in another, using pictures, graphs, charts, and equations 	<p>Student Edition: 62, 63-67, 68-69, 112-113, 162, 163-167, 168, 277, 676</p> <p><i>Algebra Lab</i> 62 <i>Get Ready for the Lesson</i> 63 <i>Graphing Calculator Lab</i> 68-69, 168 <i>Measurement Lab</i> 162 <i>Problem-Solving Investigation</i> 112-113 <i>Study Tip</i> 64, 164</p>
<ul style="list-style-type: none"> Use patterns, relations, symbolic algebra, and linear functions to model situations. <ul style="list-style-type: none"> 1. Using manipulatives, tables, graphs, verbal rules, algebraic expressions/equations/inequalities 2. Consider growth situations, such as population growth and compound interest, using recursive (e.g., NOW-NEXT) formulas 	<p>Student Edition: 24, 44, 62, 63-67, 68-69, 74, 75, 76 #5, 93-94, 101-102, 112-113, 128-133, 134-135, 136-141, 163-167, 168, 316, 342, 379-382, 383, 428</p> <p><i>Algebra Lab</i> 62, 93-94, 101-102, 134-135 <i>Graphing Calculator Lab</i> 68-69, 168 <i>Math Lab</i> 316, 342 <i>Mini Lab</i> 44 <i>Spreadsheet Lab</i> 383</p>
<u>Procedures:</u>	
PROCEDURES	
<ul style="list-style-type: none"> Use graphing techniques on a number line 	<p>Student Edition: 52, 80-83, 88-92, 95-99, 100, 103-106, 107-111, 120-121, 167, 215-220, 230-231, 276 #4, 672, 741</p> <p><i>Mini Lab</i> 103, 215</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Find absolute value 	<p>Student Edition: 80-83, 86, 96, 100, 105 #42, 167 #31, 671 <i>Reading Math</i> 81 <i>Study Tip</i> 81, 96</p>
<ul style="list-style-type: none"> Perform arithmetic operations represented by vectors (arrows) (e.g., “-3 + 6” is “left 3, right 6”) 	<p>Student Edition: 80-83, 88-92, 93-94, 95-99, 100, 103-106, 107-111, 120-121, 672, 741 <i>Algebra Lab</i> 93-94, 101-102 <i>Mini Lab</i> 103</p>
<ul style="list-style-type: none"> Solve simple linear equations informally and graphically 	<p>Student Edition: 63-67, 68-69, 100 #20, 162, 163-167, 168, 676, 706 <i>Graphing Calculator Lab</i> 68-69, 168 <i>Measurement Lab</i> 162 <i>Study Tip</i> 164</p>
<ul style="list-style-type: none"> Solve problems with multi-step, integer coefficients only (although answers may not be integers) 	<p>Student Edition: 63-67, 151-155, 156-161, 167, 171, 173, 189 #46, LA6-LA9 <i>Looking Ahead</i> LA6-LA9 <i>Mini Lab</i> 151 <i>Study Tip</i> 152, 157, 158, LA7</p>
<ul style="list-style-type: none"> Solve problems honoring the order of operations, including appropriate use of parentheses 	<p>Student Edition: 38-41, 44-47, 48, 52, 53-56, 61, 72-73, 75, 77 #10, 81, 124 #3, 133, 152, 226 #7, 338 #5, 669, 718 <i>Get Ready for the Lesson</i> 38 <i>Mini Lab</i> 44 <i>Study Tip</i> 39, 81, 152</p>
<ul style="list-style-type: none"> Solve problems using substitution of a number for a variable 	<p>Student Edition: 44-47, 48, 52, 56, 61, 73-74, 75, 83, 162, 163-167, 227 #11, 635 <i>Get Ready for the Lesson</i> 163 <i>Measurement Lab</i> 162 <i>Mini Lab</i> 44</p>
<ul style="list-style-type: none"> Create, evaluate, and simplify algebraic expressions involving variables 	<p>Student Edition: 44-47, 48, 52, 56, 61, 62, 63-67, 68-69, 73-74, 75, 59, 83, 128-133, 674, 706, 742 <i>Algebra Lab</i> 62 <i>Graphing Calculator Lab</i> 68-69 <i>Mini Lab</i> 44</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Understand and apply the properties of operations, numbers, equations, and inequalities. <ul style="list-style-type: none"> Perform operations using additive inverse Perform operations using multiplicative inverse 	<p>Student Edition: 53-56, 61, 73, 75, 77 #12, 93-94, 136-141, 156-161, 167, 171, 173, 258-263, 315 #48, 681, LA6-LA9 <i>Algebra Lab</i> 93-94 <i>Get Ready for the Lesson</i> 258 <i>Looking Ahead</i> LA6-LA9 <i>Study Tip</i> 54, 97, 108</p>
<ul style="list-style-type: none"> Use paper-and-pencil, calculators, graphing calculators, spreadsheets, and other technology to solve problems 	<p>Student Edition: 25-29, 68-69, 146, 163-167, 168, 180, 181, 327, 383, 409, 422, 432-433, 585, 624-625, 637 <i>Graphing Calculator Lab</i> 68-69, 168, 409, 624-625 <i>Math Lab</i> 180 <i>Mini Lab</i> 181 <i>Spreadsheet Lab</i> 327, 383, 422, 432-433 <i>Study Tip</i> 585</p>
<p>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.</p>	
<p>Building upon knowledge and skills gained in preceding grades, by the end of Grade 7, students will:</p>	
<p><u>Data Analysis</u></p>	
<p>DATA ANALYSIS</p>	
<ul style="list-style-type: none"> Collect, organize and interpret data to solve non-routine problems involving real world situations 	<p>Student Edition: 327, 383, 432-433, 396-401, 402-408, 410-414, 415-421, 422, 423, 424-425, 426-431, 434-437, 451-454, 455, 518-523, 624-625 <i>Graphing Calculator Lab</i> 624-625 <i>Mini Lab</i> 426 <i>Problem-Solving Investigation</i> 424-425 <i>Spreadsheet Lab</i> 327, 383, 422</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Select and use appropriate representations for sets of data, and measures of central tendency (mean, median, and mode) 	<p>Student Edition: 402-408, 409, 410-414, 415-421, 422, 423, 424-425, 426-431, 432-433, 434-437, 451-454, 455, 457</p> <p><i>Get Ready for the Lesson</i> 410 <i>Graphing Calculator Lab</i> 409 <i>Mini Lab</i> 402, 426 <i>Problem-Solving Investigation</i> 424-425 <i>Spreadsheet Lab</i> 422, 432-433 <i>Study Tip</i> 405</p>
<ul style="list-style-type: none"> Create the type of display most appropriate for given data: <ul style="list-style-type: none"> □□ chart, graph, table, box-and-whisker plot, upper quartile, lower quartile, scatter plot 	<p>Student Edition: 396-401, 410-414, 415-421, 422, 423, 424-425, 426-431, 432-433, 434-437, 444-449, 451-454, 455, 457, 518-523</p> <p><i>Get Ready for the Lesson</i> 396, 410, 415 <i>Mini Lab</i> 426 <i>Problem-Solving Investigation</i> 424-425 <i>Spreadsheet Lab</i> 422, 432-433 <i>Study Tip</i> 416, 445</p>
<ul style="list-style-type: none"> Use calculators and computer software to record and process the information 	<p>Student Edition: 68-69, 168, 327, 383, 409, 422, 432-433, 585, 588, 589, 624-625, 637</p> <p><i>Graphing Calculator Lab</i> 68-69, 168, 409, 624-625 <i>Spreadsheet Lab</i> 327, 383, 422, 432-433 <i>Study Tip</i> 585</p>
<p>Probability:</p>	
<p>PROBABILITY</p>	
<ul style="list-style-type: none"> Interpret probabilities as ratios, percents, and decimals 	<p>Student Edition: 460-464, 465-470, 474, 478, 479, 484-485, 486-490, 491, 492-497, 499-502, 503, 504-505, 690-693</p> <p><i>Get Ready for the Lesson</i> 460, 492 <i>Mini Lab</i> 465, 486 <i>Problem-Solving Investigation</i> 484-485 <i>Study Tip</i> 467, 493 <i>Test-Taking Tip</i> 466</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Model situations involving probability with simulations (using spinners, dice, calculators and computers) and theoretical models 	<p>Student Edition: 460-464, 465-470, 474, 478, 479, 484-485, 486-490, 491, 492-497, 499-502, 503, 504-505, 690-693</p> <p><i>Get Ready for the Lesson</i> 460 <i>Mini Lab</i> 465, 486 <i>Probability Lab</i> 491 <i>Problem-Solving Investigation</i> 484-485 <i>Study Tip</i> 493, 494, 495</p>
<ul style="list-style-type: none"> Discover the frequency and relative frequency involving probability 	<p>Student Edition: 465-470, 484-485, 486-490, 491, 492-497, 499-502, 503, 504-505, 588 #47, 690-693</p> <p><i>Mini Lab</i> 465, 486 <i>Probability Lab</i> 491 <i>Problem-Solving Investigation</i> 484-485 <i>Study Tip</i> 494, 495</p>
<ul style="list-style-type: none"> Estimate probabilities and make predictions based on experimental and theoretical probabilities 	<p>Student Edition: 460-464, 465-470, 474, 484-485, 486-490, 491, 492-497, 499-502, 503, 504-505, 690-693</p> <p><i>Get Ready for the Lesson</i> 460 <i>Mini Lab</i> 465, 486 <i>Probability Lab</i> 491 <i>Problem-Solving Investigation</i> 484-485 <i>Study Tip</i> 493, 494, 495 <i>Test-Taking Tip</i> 466</p>
<ul style="list-style-type: none"> Play and analyze probability-based games, and discuss the concepts of fairness and expected value 	<p>Student Edition: 460-464, 465-470, 474, 484-485, 486-490, 491, 492-497, 499-502, 503, 504-505, 690-693</p> <p><i>Mini Lab</i> 465, 486 <i>Probability Lab</i> 491 <i>Problem-Solving Investigation</i> 484-485 <i>Study Tip</i> 463, 467, 493</p>

STANDARDS	PAGE REFERENCES
Discrete Mathematics—Systematic Listing and Counting:	
SYSTEMATIC LISTING AND COUNTING	
<ul style="list-style-type: none"> Apply the multiplication principle of counting 	<p>Student Edition: 471-474, 478, 479, 492-497, 499-502, 503, 504-505, 691, 692, 693 <i>Get Ready for the Lesson</i> 471 <i>Study Tip</i> 472, 493, 494, 495</p>
<ul style="list-style-type: none"> Explore the principle of permutations: ordered situations with replacement (e.g., number of possible license plates) vs. ordered situations without replacement (e.g., number of possible slates of 3 class officers from a 23 student class) 	<p>Student Edition: 475-478, 479, 480-485, 491, 499-502, 503, 504-505, 538 #53, 692 <i>Mini Lab</i> 475 <i>Probability Lab</i> 491</p>
<ul style="list-style-type: none"> Explore counting problems involving Venn diagrams with three attributes (e.g., there are 15, 20, and 25 students respectively in the chess club, the debating team, and the engineering society; how many different students belong to the three clubs if there are 6 students in chess and debating, 7 students in chess and engineering, 8 students in debating and engineering, and 2 students in all three?). 	<p>Student Edition: 186, 215, 332 #47, 532 <i>Geometry Lab</i> 532 <i>Get Ready for the Lesson</i> 186</p>
<ul style="list-style-type: none"> Apply techniques of systematic listing, counting, and reasoning in a variety of different contexts 	<p>Student Edition: 460-464, 465-470, 471-474, 475-478, 479, 480-485, 486-490, 491, 492-497, 499-502, 503, 504-505, 538 #53, 690-693 <i>Get Ready for the Lesson</i> 460, 471, 492 <i>Mini Lab</i> 465, 486 <i>Probability Lab</i> 491 <i>Study Tip</i> 493</p>
Discrete Mathematics—Vertex-Edge Graphs and Algorithms:	
VERTEX-EDGE GRAPHS AND ALGORITHMS	
<ul style="list-style-type: none"> Use vertex-edge graphs to represent and find solutions to practical problems. <ol style="list-style-type: none"> Finding the shortest network connecting specified sites Finding the shortest route on a map from one site to another Finding the shortest circuit on a map that makes a tour of specified sites 	<p>Student Edition: 481</p>

STANDARDS	PAGE REFERENCES
<p>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</p>	
<p>At each grade level, with respect to content appropriate for that grade level, students will:</p>	
<p>A. Problem Solving</p>	
<ul style="list-style-type: none"> Learn mathematics through problem solving, inquiry, and discovery 	<p>Student Edition: 21, 24, 25-29, 42-43, 112-113, 148-149, 180, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595 <i>Math Lab</i> 180 <i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595 <i>Reading to Solve Problems</i> 24</p>
<ul style="list-style-type: none"> Solve problems that arise in mathematics and in other contexts (cf. workplace readiness standard 8.3) 	<p>Student Edition: 21, 24, 25-29, 42-43, 112-113, 148-149, 180, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595 <i>Math Lab</i> 180 <i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595 <i>Reading to Solve Problems</i> 24</p>
<ul style="list-style-type: none"> Solve open-ended problems 	<p>Student Edition: 29, 37, 47, 56, 61, 67, 92, 106, 111, 118, 132, 160, 167, 184, 194, 200, 210, 214, 234, 240, 257, 292, 297, 302, 325, 348, 354, 359, 365, 373, 378, 382, 407, 430, 449, 516, 529, 550, 562, 576, 622, 639</p>
<ul style="list-style-type: none"> Solve non-routine problems 	<p>Student Edition: 21, 24, 25-29, 42-43, 112-113, 148-149, 180, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595 <i>Math Lab</i> 180 <i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595 <i>Reading to Solve Problems</i> 24</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Solve problems with multiple solutions 	<p>Student Edition: 21, 25-29, 50, 167, 177, 270, 279, 382-383, 497, 507, 659</p> <p><i>Real-World Unit Project</i> 21, 167, 177, 270, 279, 382, 393, 497, 507, 659</p> <p><i>Test-Taking Tip</i> 50</p>
<ul style="list-style-type: none"> Solve problems that can be solved in several ways 	<p>Student Edition: 21, 24, 25-29, 42-43, 112-113, 148-149, 180, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595</p> <p><i>Math Lab</i> 180</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595</p> <p><i>Reading to Solve Problems</i> 24</p>
<ul style="list-style-type: none"> Select and apply a variety of appropriate problem-solving strategies (e.g., “try a simpler problem” or “make a diagram”) to solve problems 	<p>Student Edition: 21, 24, 25-29, 42-43, 112-113, 148-149, 180, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595</p> <p><i>Math Lab</i> 180</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595</p> <p><i>Reading to Solve Problems</i> 24</p>
<ul style="list-style-type: none"> Pose problems of various types and levels of difficulty 	<p>Student Edition: 21, 24, 25-29, 42-43, 112-113, 148-149, 180, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595</p> <p><i>Math Lab</i> 180</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 424-425, 530-531, 594-595</p> <p><i>Reading to Solve Problems</i> 24</p>
<ul style="list-style-type: none"> Monitor their progress and reflect on the process of their problem solving activity 	<p>Student Edition: 4-5, 6-7, 8-9, 10-11, 12-13, 14-15, 21, 24-29, 42-43, 112-113, 148-149, 167, 177, 190-191, 248-249, 270, 279, 318-319, 366-367, 382, 393, 424-425, 484-485, 497, 507, 530-531, 594-595, 646-647, 659</p> <p><i>Start Smart</i> 4-5, 6-7, 8-9, 10-11, 12-13, 14-15</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p>

STANDARDS	PAGE REFERENCES
B. Communication	
<ul style="list-style-type: none"> • Use communication to organize and clarify their mathematical thinking 	<p>Student Edition: 4-5, 6-7, 8-9, 10-11, 12-13, 14-15, 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Start Smart</i> 4-5, 6-7, 8-9, 10-11, 12-13, 14-15</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p>
<ul style="list-style-type: none"> • Read and write often in math class 	<p>Student Edition: 29 #18, 37 #39, 42-43, 112-113, 148-149, 190-191, 248-249, 292 #44, 302 #43, 309 #43318-319, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p>
<ul style="list-style-type: none"> • Use Discussion, listening, and questioning techniques to: <ul style="list-style-type: none"> o Communicate mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing. o Analyze and evaluate the mathematical thinking and strategies of others. o Use the language of mathematics to express mathematical ideas precisely. 	<p>Student Edition: 4-5, 6-7, 8-9, 10-11, 12-13, 14-15, 21, 24, 25-29, 167, 177, 180, 181, 270, 279, 382, 383, 393, 497, 507, 659</p> <p><i>Start Smart</i> 4-5, 6-7, 8-9, 10-11, 12-13, 14-15</p> <p><i>Math Lab</i> 180</p> <p><i>Mini Lab</i> 181</p>
C. Connections	
<ul style="list-style-type: none"> • Recognize recurring themes across mathematical domains (e.g., patterns in number, algebra, and geometry). 	<p>Student Edition: 24, 44, 62, 63-67, 68-69, 74, 75, 76 #5, 93-94, 101-102, 112-113, 128-133, 134-135, 136-141, 163-167, 168, 180, 181, 249 #9, 316, 342, 379-382, 383, 428</p> <p><i>Algebra Lab</i> 62, 93-94, 101-102, 134-135</p> <p><i>Graphing Calculator Lab</i> 68-69, 168</p> <p><i>Math Lab</i> 180, 316, 342</p> <p><i>Mini Lab</i> 44, 181</p> <p><i>Spreadsheet Lab</i> 383</p>
<ul style="list-style-type: none"> • 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). 	<p>Student Edition: 28, 34, 43, 57, 180, 181, 236, 250, 265, 304, 316, 342, 572, 577, 578, 589, 613, 619</p> <p><i>Math Lab</i> 180, 250, 316, 342</p> <p><i>Mini Lab</i> 34, 57, 181, 236, 265, 304, 572, 577, 578, 589, 613, 619</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Recognize that mathematics is used in a variety of contexts outside of mathematics. 	<p>Student Edition: 24, 25-29, 42-43, 112-113, 148-149, 150, 180, 181, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Math Lab</i> 180 <i>Mini Lab</i> 181</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Reading to Solve Problems</i> 24, 150</p>
<ul style="list-style-type: none"> Apply mathematics in practical situations and in other disciplines. 	<p>Student Edition: 24, 25-29, 42-43, 112-113, 148-149, 150, 180, 181, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Math Lab</i> 180 <i>Mini Lab</i> 181</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Reading to Solve Problems</i> 24, 150</p>
<ul style="list-style-type: none"> Trace the development of mathematical concepts over time and across cultures (cf. world languages and social studies standards). 	<p>Student Edition: 167</p> <p><i>Real World Unit Project</i> 167</p>
<ul style="list-style-type: none"> Understand how mathematical ideas interconnect and build on one another to produce a coherent whole. 	<p>Student Edition: 24, 25-29, 42-43, 112-113, 148-149, 150, 180, 181, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Math Lab</i> 180 <i>Mini Lab</i> 181</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Reading to Solve Problems</i> 24, 150</p>
D. Reasoning	
<ul style="list-style-type: none"> Recognize that mathematical facts, procedures, and claims must be justified. 	<p>Student Edition: 24, 25-29, 150, 180, 181, 310-311, 315 #48, 572, 577, 578, 589, 613, 619</p> <p><i>Math Lab</i> 180</p> <p><i>Mini Lab</i> 181, 572, 577, 578, 589, 613, 619</p> <p><i>Reading to Solve Problems</i> 24, 150</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Use reasoning to support their mathematical conclusions and problem solutions. 	<p>Student Edition: 24, 25-29, 42-43, 112-113, 148-149, 150, 180, 181, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Math Lab</i> 180 <i>Mini Lab</i> 181</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Reading to Solve Problems</i> 24, 150</p>
<ul style="list-style-type: none"> Select and use various types of reasoning and methods of proof. 	<p>Student Edition: 24, 25-29, 42-43, 112-113, 148-149, 150, 180, 181, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Math Lab</i> 180 <i>Mini Lab</i> 181</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Reading to Solve Problems</i> 24, 150</p>
<ul style="list-style-type: none"> Rely on reasoning, rather than answer keys, teachers, or peers, to check the correctness of their problem solutions. 	<p>Student Edition: 24, 25-29, 42-43, 112-113, 148-149, 150, 180, 181, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Math Lab</i> 180 <i>Mini Lab</i> 181</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Reading to Solve Problems</i> 24, 150</p>
<ul style="list-style-type: none"> Make and investigate mathematical conjectures. 	<p>Student Edition: 24, 25-29, 42-43, 112-113, 148-149, 150, 180, 181, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Math Lab</i> 180 <i>Mini Lab</i> 181</p> <p><i>Problem-Solving Investigation</i> 42-43, 112-113, 148-149, 190-191, 248-249, 318-319, 366-367, 424-425, 484-485, 530-531, 594-595, 646-647</p> <p><i>Reading to Solve Problems</i> 24, 150</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Counterexamples as a means of disproving conjectures 	<p>Student Edition: 24, 56 #41, 76 #2, 240 #46 <i>Reading to Solve Problems</i> 24</p>
<ul style="list-style-type: none"> Verifying conjectures using informal reasoning or proofs. <ol style="list-style-type: none"> Evaluate examples of mathematical reasoning and determine whether they are valid. 	<p>Student Edition: 4-5, 6-7, 8-9, 10-11, 12-13, 14-15, 24, 25-29, 42-43, 150, 180, 181, 572, 577, 578, 589, 613, 619 <i>Math Lab</i> 180 <i>Mini Lab</i> 181, 572, 577, 578, 589, 613, 619 <i>Problem-Solving Investigation</i> 42-43 <i>Reading to Solve Problems</i> 24, 150 <i>Start Smart</i> 4-5, 6-7, 8-9, 10-11, 12-13, 14-15</p>
E. Representations	
<ul style="list-style-type: none"> Create and use representations to organize, record, and communicate mathematical ideas. <ul style="list-style-type: none"> <input type="checkbox"/> Concrete representations (e.g., base-ten blocks or algebra tiles) <input type="checkbox"/> Pictorial representations (e.g., diagrams, charts, or tables) <input type="checkbox"/> Symbolic representations (e.g., a formula) <input type="checkbox"/> Graphical representations (e.g., a line graph) 	<p>Student Edition: 25-29, 62, 93-94, 101-102, 103, 107, 114, 134-135, 142-146, 396-401, 410-414, 415-421, 422, 423, 424-425, 432-433, 518-523, LA21-LA25 <i>Algebra Lab</i> 62, 93-94, 101-102, 134-135 <i>Looking Ahead</i> LA 21-LA25 <i>Mini Lab</i> 103, 107, 114, 142 <i>Problem-Solving Investigation</i> 424-425 <i>Spreadsheet Lab</i> 422, 432-433</p>
<ul style="list-style-type: none"> Select, apply, and translate among mathematical representations to solve problems. 	<p>Student Edition: 25-29, 150, 422, 432-433, 748-749 <i>Reading to Solve Problems</i> 150 <i>Spreadsheet Lab</i> 422, 432-433</p>
<ul style="list-style-type: none"> Use representations to model and interpret physical, social, and mathematical phenomena. 	<p>Student Edition: 25-29, 150, 68-69, 168, 327, 383, 409, 422, 432-433, 624-625, 747, 748-749 <i>Graphing Calculator Lab</i> 68-69, 168, 409, 624-625 <i>Reading to Solve Problems</i> 150 <i>Spreadsheet Lab</i> 327, 383, 422, 432-433</p>
F. Technology	
<ul style="list-style-type: none"> Use technology to gather, analyze, and communicate mathematical information. 	<p>Student Edition: 68-69, 168, 327, 383, 409, 422, 432-433, 585, 589, 624-625, 637 <i>Graphing Calculator Lab</i> 68-69, 168, 409, 624-625 <i>Spreadsheet Lab</i> 327, 383, 422, 432-433 <i>Study Tip</i> 585</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Use computer spreadsheets, software, and graphing utilities to organize and display quantitative information (cf. workplace readiness standard 8.4-D). 	<p>Student Edition: 68-69, 168, 327, 383, 409, 422, 432-433, 624-625 <i>Graphing Calculator Lab</i> 68-69, 168, 409, 624-625 <i>Spreadsheet Lab</i> 327, 383, 422, 432-433</p>
<ul style="list-style-type: none"> Use graphing calculators and computer software to investigate properties of functions and their graphs. 	<p>Student Edition: 68-69, 168, 327, 383, 624-625 <i>Graphing Calculator Lab</i> 68-69, 168, 624-625 <i>Spreadsheet Lab</i> 327, 383</p>
<ul style="list-style-type: none"> Use calculators as problem-solving tools (e.g., to explore patterns, to validate solutions). 	<p>Student Edition: 34-35, 68-69, 168, 409, 585, 589, 624-625, 637 <i>Graphing Calculator Lab</i> 68-69, 168, 409, 624-625 <i>Study Tip</i> 585</p>
<ul style="list-style-type: none"> Use computer software to make and verify conjectures about geometric objects. 	<p>Student Edition: 327, 422 <i>Spreadsheet Lab</i> 327, 422</p>
<ul style="list-style-type: none"> Use computer-based laboratory technology for mathematical applications in the sciences (cf. science standards). 	<p>Student Edition: 141 #51, 497 <i>Real-World Unit Project</i> 497</p>