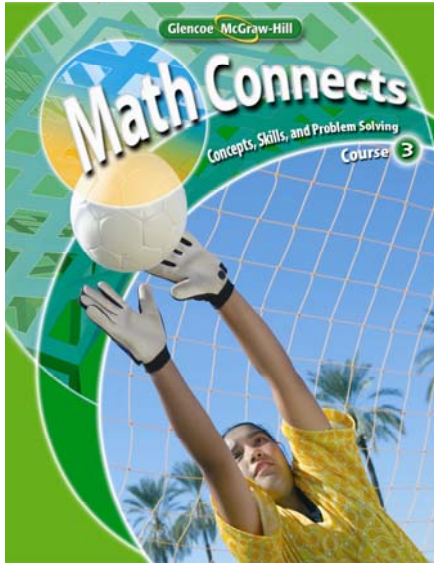




Glencoe

Mathematics Standards
Grades 6-8

Nevada



Math Connects

Concepts, Skills, and Problem Solving

Course 3

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STANDARDS	PAGE REFERENCES
<p>Process Standard A: Students will develop their ability to solve problems by engaging in developmentally appropriate opportunities where there is a need to use various approaches to investigate and understand mathematical concepts in order to:</p>	
<ul style="list-style-type: none"> • Formulate their own problems • Find solutions to problems from everyday situations • Develop and apply strategies to solve a variety of problems • Integrate mathematical reasoning, communication and connections 	
<ul style="list-style-type: none"> • Generalize solutions and apply previous knowledge to new problem solving situations 	<p>Student Edition: 37 Example 6, 39 #43-#46, 60 #23, 87 #39, 207 #3-#5, 263, 275 <i>Mini Lab</i> 65</p> <p>Teacher Wraparound Edition: A 289; EA 49; FM 103; PA 175</p>
<ul style="list-style-type: none"> • Determine an efficient strategy, verify, interpret, and evaluate the results with respect to the original problem 	<p>Student Edition: 24-28, 29, 31, 34 #48, 45 #42, 58 Example 2, 69 #26, 115 Example 4 <i>Algebra Lab</i> 40 <i>Get Ready</i> 119 <i>Problem-Solving Investigation</i> 62-63</p> <p>Teacher Wraparound Edition: FM 25</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Apply problem solving strategies until a solution is found or it is clear that no solution exists 	<p>Student Edition: 24, 205 Example 1, 401 <i>Get Ready</i> 108, 190 <i>Mini Lab</i> 148 <i>Problem-Solving Investigation</i> 438 <i>Study Guide and Review</i> 77 Example 11 <i>Test Practice</i> 81 #14</p> <p>Teacher Wraparound Edition: FM 42, 175</p>
<ul style="list-style-type: none"> Interpret and solve a variety of mathematical problems by paraphrasing 	<p>Student Edition: 73 #35, 122 #39, 129 #44, 145 #5, 166 #32, 192 #7, #22-#24, 546 Example 3 <i>Algebra Lab</i> 40 <i>Geometry Lab</i> 224</p> <p>Teacher Wraparound Edition: A 45; PA 71, 227</p>
<ul style="list-style-type: none"> Identify necessary and extraneous information 	<p>Student Edition: <i>Get Ready</i> 41, 91, 447 #28 <i>Problem-Solving Investigation</i> 125 #13</p> <p>Teacher Wraparound Edition: ML 46</p>
<ul style="list-style-type: none"> Check the reasonableness of a solution 	<p>Student Edition: 25 Example 1, 61 #27, 98 Example 65, 99 #26-#27, 104 Example 5, 106 #37-#38, 279 <i>Measurement Lab</i> 362 <i>Problem-Solving Investigation</i> 62, 152, 272 <i>Study Guide and Review</i> 75 Example 1</p> <p>Teacher Wraparound Edition: I 26</p>
<ul style="list-style-type: none"> Apply technology as a tool in problem solving situations 	<p>Student Edition: 177 #41 <i>Graphing Calculator Lab</i> 500-501, 516-517, 581, 611 <i>Spreadsheet Lab</i> 231, 294, 589-590, 597</p>

STANDARDS	PAGE REFERENCES
<p>Process Standard B: Students will develop their ability to communicate mathematically by solving problems where there is a need to obtain information from the real world through reading, listening, and observing in order to:</p>	
<ul style="list-style-type: none"> • Translate information into mathematical language and symbols • Process information mathematically • Present results in written, oral, and visual formats • Discuss and exchange ideas about mathematics as a part of learning • Read a variety of fiction and nonfiction texts to learn about mathematics • Use mathematical notation to communicate and explain problems 	
<ul style="list-style-type: none"> • Use formulas, algorithms, inquiry, and other techniques to solve mathematical problems 	<p>Student Edition: 175 Example 6, 284-285, 387, 394, 425 #40, 437 #29 <i>Geometry Lab</i> 161 <i>Problem-Solving Investigation</i> 152 Teacher Wraparound Edition: FM 149, 257</p>
<ul style="list-style-type: none"> • Evaluate written and oral presentations in mathematics 	<p>Student Edition: 100 #49, 111 #41, 151 #31, 197 #17, 260 #61, 289 #29, 377 #33, 420 #65, 426 #43, 444 #34 <i>Problem-Solving Investigation</i> 152 Teacher Wraparound Edition: PA 265</p>
<ul style="list-style-type: none"> • Identify and translate key words and phrases that imply mathematical operations 	<p>Student Edition: 158 #30, 170 #17, 193 #28, 428, 435 Example 3, 442, 446 Example 3 <i>Get Ready</i> 194, 427 <i>Reading to Solve Problems</i> 64 Teacher Wraparound Edition: AE 442</p>
<ul style="list-style-type: none"> • Model and explain mathematical relationships using oral, written, graphic, and algebraic methods 	<p>Student Edition: 71 #3, 95 #40, 150 #29, 177 #42, 193 #25, 206, 223 #20, 267 #29 <i>Geometry Lab</i> 161, 172 <i>Get Ready</i> 204 <i>Mini Lab</i> 162 <i>Problem Solving In Music</i> 178 <i>Problem-Solving Investigation</i> 216 Teacher Wraparound Edition: FM 163</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Use everyday language, both orally and in writing, to communicate strategies and solutions to mathematical problems 	<p>Student Edition: 69 #26, 101 #52, 129 #41, 166 #30, 209 #25, 214 #27, 241 #23, 255 #32, 271 #35</p> <p>Teacher Wraparound Edition: A 271; PA 71</p>
<p>Process Standard C: Students will develop their ability to reason mathematically by solving problems where there is a need to investigate mathematical ideas and construct their own learning in all content areas in order to:</p>	
<ul style="list-style-type: none"> Reinforce and extend their logical reasoning abilities Reflect on, clarify, and justify their thinking Ask questions to extend their thinking Use patterns and relationships to analyze mathematical situations Determine relevant, irrelevant, and/or sufficient information to solve mathematical problems 	
<ul style="list-style-type: none"> Recognize and apply deductive and inductive reasoning 	<p>Student Edition: 88 #50, 170 #18, 219, 223 #16-#17, 464 <i>Get Ready</i> 256, 439 <i>Mini Lab</i> 263 <i>Problem-Solving Investigation</i> 314-315 <i>Reading to Solve Problems</i> 262 <i>Spreadsheet Lab</i> 294 #3</p>
<ul style="list-style-type: none"> Review and refine the assumptions and steps used to derive conclusions in mathematical arguments 	<p>Student Edition: 89 #51, 100 #49, 111 #41, 197 #17, 260 #61, 261 #64 <i>Geometry Lab</i> 312-313 <i>Mini Lab</i> 162</p> <p>Teacher Wraparound Edition: PA 265</p>
<ul style="list-style-type: none"> Justify answers and the steps taken to solve problems with and without manipulatives and physical models 	<p>Student Edition: 171 #23, 223 #20 <i>Geometry Lab</i> 161, 493 <i>Mini Lab</i> 416 <i>Problem-Solving Investigation</i> 216, 314</p>

STANDARDS	PAGE REFERENCES
<p>Process Standard D: Students will develop the ability to make mathematical connections by solving problems where there is a need to view mathematics as an integrated whole in order to:</p>	
<ul style="list-style-type: none"> • Link new concepts to prior knowledge • Identify relationships between content strands • Integrate mathematics with other disciplines • Allow the flexibility to approach problems in a variety of ways within and beyond the field of mathematics 	
<ul style="list-style-type: none"> • Use mathematical ideas from one area of mathematics to explain an idea from another area of mathematics 	<p>Student Edition: 68 #20, 94 #35, 491 #22, 506 #20, 530 #7, 532 #36, 541, 542 #19 <i>Geometry Lab</i> 493</p>
<ul style="list-style-type: none"> • Use manipulatives and physical models to explain the relationships between concepts and procedures 	<p>Student Edition: 84, 450, LA6-LA7, LA9-LA10 <i>Geometry Lab</i> 493 <i>Graphing Calculator Lab</i> 500-501 <i>Problem-Solving Investigation</i> 538 <i>Spreadsheet Lab</i> 597</p>
<ul style="list-style-type: none"> • Use the connections among mathematical topics to develop multiple approaches to problems 	<p>Student Edition: 275-277, 281 Example 4, 367 #19, 431 #28, 482, 617-621 <i>Problem-Solving Investigation</i> 272, 575 #6-#11 <i>Spreadsheet Lab</i> 589-590</p>
<ul style="list-style-type: none"> • Apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as rhythm in music and motion in science 	<p>Student Edition: 99 #10, 479 #16, 498 #28, 536 #20-#21, 548 #49, 553 #34 <i>Problem-Solving Investigation</i> 574 Teacher Wraparound Edition: A 546</p>
<ul style="list-style-type: none"> • Identify, explain, and apply mathematics in everyday life 	<p>Student Edition: 104, 451 Example 5, 472 #19-#20, #23-#24, 478 #6-#7, 497 #22-#27, 546 Example 3, 634 #12-#14, 644 Example 4 <i>Get Ready</i> 502 <i>Problem-Solving Investigation</i> 508</p>

STANDARDS	PAGE REFERENCES
Grade 8	
1.0 Numbers, Number Sense, and Computation	
<p>Content Standard 1.0 Students will accurately calculate and use estimation techniques, number relationships, operation rules, and algorithms; they will determine the reasonableness of answers and the accuracy of solutions to solve problems, communicate, reason, and make connections within and beyond the field of mathematics.</p> <p>At a minimum, students will maintain previous skills and attain the following:</p>	
<p>1.8.1 Represent numbers using scientific notation in mathematical and practical situations.</p>	<p>Student Edition: 130-133 <i>Practice Test</i> 139 #18-#20 <i>Study Guide and Review</i> 138 2-10</p> <p>Teacher Wraparound Edition: AE 131; FM 131; T 130</p>
<p>1.8.2 Translate among fractions, decimals, and percents, including percents greater than 100 and percents less than 1.</p>	<p>Student Edition: 85 Example 1, 87 #1-#6, #8-#25, #30-#38, 253 Example 3-Example 4, 254 #7-#9, #20-#28, 256-261, 267 #34</p> <p>Teacher Wraparound Edition: FM 85</p>
<p>Explain and use the relationship among equivalent representations of rational numbers in mathematical and practical situations.</p>	<p>Student Edition: 85 Example 1, 87 #1-#6, #8-#25, #30-#38, 253 Example 3-Example 4, 254 #7-#9, #20-#28, 256-261, 267 #34</p> <p><i>Problem-Solving Investigation</i> 272</p> <p>Teacher Wraparound Edition: FM 85; T 275</p>
<p>1.8.3 Compare and order real numbers, including powers of whole numbers in mathematical and practical situations.</p>	<p>Student Edition: 36 Example 1, 38 #13-#24, 91-95, 131 Example 5, 157 Example 5-Example 6, 258 Example 8, #11-#12</p> <p>Teacher Wraparound Edition: AE 36, 92, 93, 131, 157</p>
<p>1.8.5 Identify perfect squares to 225 and their corresponding square roots.</p>	<p>Student Edition: 144-147, 148-151</p> <p>Teacher Wraparound Edition: 144a, 148a; A 147; AE 145, 149; FM 145; T 144</p>

STANDARDS	PAGE REFERENCES
<p>1.8.6 Use estimation strategies to determine the reasonableness of an answer in mathematical and practical situations.</p>	<p>Student Edition: 149 Example 3, 150 #17, #28, 275-277, 310 #36, 354 Example 5 <i>Problem-Solving Investigation</i> 272 <i>Study Tip</i> 374 Teacher Wraparound Edition: AE 149, 272, 276; T 275</p>
<p>1.8.7 Calculate with real numbers to solve mathematical and practical situations.</p>	<p>Student Edition: 163, 167-171, 175, 191, 198 Example 1, 232-233, 364 Example 2 <i>Spreadsheet Lab</i> 231 Teacher Wraparound Edition: AE 233, 286, 365</p>
<p>Use order of operations to solve equations in the real number system.</p>	<p>Student Edition: 65-69, 70-73, 119-123, 145 Example 4, 422-426, 428, 434-437 <i>Algebra Lab</i> 432-433 <i>Study Guide and Review</i> 76-77 Teacher Wraparound Edition: 65a, 70a; A123; AE 66-67, 71, 120, 423, 435; PA 69</p>
<p>1.8.8 Identify and apply the identity property, inverse property, and the absolute value of real numbers to solve problems.</p>	<p>Student Edition: 31, 32 #28, 36-37 Example 2-Example 5, 43, 70 Example 1, 102, 156 Teacher Wraparound Edition: AE 31, 37, 103</p>
<p>2.0 Patterns, Functions, and Algebra</p>	
<p>Content Standard 2.0 Students will use various algebraic methods to analyze, illustrate, extend, and create numerous representations (words, numbers, tables, and graphs) of patterns, functions, and algebraic relations as modeled in practical situations to solve problems, communicate, reason, and make connections within and beyond the field of mathematics. At a minimum, students will maintain previous skills and attain the following:</p>	
<p>2.8.1 Find the missing term in a numerical sequence or a pictorial representation of a sequence.</p>	<p>Student Edition: 26, 27 #1, #4-#5, 28 #10-#11, 464-468 <i>Mini Lab</i> 24, 29, 316 <i>Problem-Solving Investigation</i> 124-125 Teacher Wraparound Edition: AE 465</p>

STANDARDS	PAGE REFERENCES
<p>2.8.2 Evaluate formulas and algebraic expressions using rational numbers (with and without technology).</p>	<p>Student Edition: 29-34, 127-128, 162-167, 191-193, 206-208, 373-377, 380-384, 416-419, 427-431 <i>Algebra Lab</i> 432-433 Teacher Wraparound Edition: AE 127, 163, 191, 417; FM 30</p>
<p>Solve and graphically represent equations and inequalities in one variable, including absolute value.</p>	<p>Student Edition: 37 Example 5, 65, 70, 119-120, 145, 422-426, 441-444, 445-448 Teacher Wraparound Edition: AE 120, 423, 443, 446</p>
<p>2.8.3 Add and subtract binomials.</p>	<p>Student Edition: LA2-LA5, LA6-LA8, LA9-LA11 Teacher Wraparound Edition: FM LA3, LA7, LA10</p>
<p>2.8.4 Identify, model, describe, and evaluate functions (with and without technology).</p>	<p>Student Edition: 469-472, 475-479, 495-499, 528-529, 534-536 <i>Algebra Lab</i> 474 Teacher Wraparound Edition: AE 470, 476-477, 496, 529</p>
<p>Translate among verbal descriptions, graphic, tabular, and algebraic representations of mathematical situations (with and without technology).</p>	<p>Student Edition: 441-442, 476, 478 #5, 534-535 <i>Get Ready</i> 475 <i>Graphing Calculator Lab</i> 500-501 <i>Mini Lab</i> 534 Teacher Wraparound Edition: AE 470, 477, 496</p>
<p>2.8.5 Solve linear equations and represent the solution graphically.</p>	<p>Student Edition: 496 Example 4-Example 6, 497 #7, #22, #25, 498 #37, 502-506 <i>Graphing Calculator Lab</i> 500-501 Teacher Wraparound Edition: AE 496, 503-504</p>
<p>Solve inequalities and represent the solution on a number line.</p>	<p>Student Edition: 441-443, 445-448, 449-453 Teacher Wraparound Edition: A 444; AE 442, 443, 446, 451; PA 453</p>

STANDARDS	PAGE REFERENCES
<p>2.8.6 Describe how changes in the value of one variable affect the values of the remaining variables in a relation.</p>	<p>Student Edition: 469-472, 475-479, 495-499, 528-529, 534-536 <i>Algebra Lab</i> 474 Teacher Wraparound Edition: AE 470, 476-477, 496, 529</p>
<p>3.0 Measurement</p>	
<p>Content Standard 3.0 Students will use appropriate tools and techniques of measurement to determine, estimate, record, and verify direct and indirect measurements to solve problems, communicate, reason, and make connections within and beyond the field of mathematics. At a minimum, students will maintain previous skills and attain the following:</p>	
<p>3.8.1 Estimate and convert unites of measure for mass and capacity within the same measurement system (customary and metric).</p>	<p>Student Edition: 72 #22-#26, 377 #23-#25, 479 #19 <i>Concepts and Skills Bank</i> 742-745</p>
<p>3.8.2 Demonstrate an understanding of precision, error, and tolerance when using appropriate measurement tools.</p>	<p>Student Edition: 448 #31, 479 #19 <i>Concepts and Skills Bank</i> 736 <i>Measurement Lab</i> 362</p>
<p>3.8.3 Identify how changes in a dimension of a figure effect changes in its perimeter, area, and volume.</p>	<p>Student Edition: 356 #31, #34, 357 #38, 377 #28-#31, 384 #26, 391 #19 <i>Measurement Lab</i> 385 <i>Mini Lab</i> 373 <i>Problem-Solving Investigation</i> 360 <i>Spreadsheet Lab</i> 397-398 Teacher Wraparound Edition: 352a; AE 354</p>
<p>3.8.4 Calculate percents in monetary problems.</p>	<p>Student Edition: 269 Example 5g, 270 #29-#30, 28 #34, 281, 283 #30-#31, 286-287, 290-293 <i>Problem-Solving Investigation</i> 272 <i>Spreadsheet Lab</i> 294 Teacher Wraparound Edition: AE 284, 286, 291</p>
<p>3.8.5 Apply ratios and proportions to calculate rates and solve mathematical and practical problems using indirect measure.</p>	<p>Student Edition: 48 Example 4, 190-193, 194-197, 198-203, 232-235, 252-253, 487 Example 1 <i>Real-World Link</i> 414 Teacher Wraparound Edition: A 193; AE 191, 195, 233</p>

STANDARDS	PAGE REFERENCES
4.0 Spatial Relationships, Geometry, and Logic	
Content Standard 4.0 Students will identify, represent, verify, and apply spatial relationships and geometric properties to solve problems, communicate, and make connections within and beyond the field of mathematics.	
At a minimum, students will maintain previous skills and attain the following:	
<p>4.8.1 Find and use the sum of the measures of interior angles of polygons.</p>	<p>Student Edition: 307, 311 #38, 316-319, 323 #20-#23, 331 #21-#24 <i>Mini Lab</i> 316 <i>Problem-Solving Investigation</i> 314 Teacher Wraparound Edition: A 319; AE 317; PA 317</p>
<p>4.8.2 Apply the properties of equality and proportionality to congruent or similar shapes.</p>	<p>Student Edition: 218-223, 313 Activity 2, 320-323, 399-401 <i>Geometry Lab</i> 224, 324-325 Teacher Wraparound Edition: AE 219, 220, 221</p>
<p>4.8.3 Demonstrate dilation using coordinate geometry and models.</p>	<p>Student Edition: 225-230, 235 #16 <i>Spreadsheet Lab</i> 231 <i>Study Guide and Review</i> 245 4-7 Teacher Wraparound Edition: AE 226, 227; T 225</p>
<p>Describe the relationship between an original figure and its transformation or dilation.</p>	<p>Student Edition: 332-335, 337-341, 499 #42 <i>Study Guide and Review</i> 345-346 Teacher Wraparound Edition: AE 333-334, 338</p>
<p>4.8.5 Calculate slope, midpoint, and distance using equations and formulas (with and without technology).</p>	<p>Student Edition: 173-177, 481-485, 495-498 <i>Geometry Lab</i> 493 <i>Study Guide and Review</i> 182 3-7 Teacher Wraparound Edition: AE 174-175, 482; PA 175; T 481</p>
<p>Determine the x- and y-intercepts of a line.</p>	<p>Student Edition: 495-498 Teacher Wraparound Edition: A 499; AE 496; FM 496; T 495</p>

STANDARDS	PAGE REFERENCES
<p>4.8.6 Form generalizations and validate conclusions about geometric figures and their properties.</p>	<p>Student Edition: 317, 352, 368-369 <i>Concepts and Skills Bank</i> 737 <i>Geometry Lab</i> 312-313, 385, 392 <i>Mini Lab</i> 316, 352 Teacher Wraparound Edition: A 357; FM 369</p>
<p>4.8.7 Verify and explain the Pythagorean Theorem using a variety of methods.</p>	<p>Student Edition: 162-166, 167-171, 175, 177 <i>Geometry Lab</i> 161 <i>Study Guide and Review</i> 181 3-5, 182 Teacher Wraparound Edition: 162a; A 171; AE 163, 168, TT 164</p>
<p>Determine the measure of the missing side of a right triangle.</p>	<p>Student Edition: 162-166, 167-171, 175, 177 <i>Geometry Lab</i> 161 <i>Study Guide and Review</i> 181 3-5, 182 Teacher Wraparound Edition: 162a; A 171; AE 163, 168, TT 164</p>
<p>4.8.8 Construct geometric figures using a variety of tools.</p>	<p>Student Edition: 225-227, 228 #1-#4, #7-#14, 238 Example 4, 310 #36 <i>Geometry Lab</i> 172, 312-313 <i>Mini Lab</i> 225, 306 <i>Problem-Solving Investigation</i> 314 Teacher Wraparound Edition: AE 226</p>
<p>4.8.9 Represent logical relationships using conditional statements.</p>	<p>Student Edition: 88 #50, 170 #18, 219, 223 #16-#17, 464 <i>Problem-Solving Investigation</i> 314-315 <i>Study Guide and Review</i> 343 Teacher Wraparound Edition: A 315; AE 315</p>

STANDARDS	PAGE REFERENCES
5.0 Data Analysis	
<p>Content Standard 5.0 Students will collect, organize, display, interpret, and analyze data to determine statistical relationships and probability projections to solve problems, communicate, reason, and make connections within and beyond the field of mathematics.</p> <p>At a minimum, students will maintain previous skills and attain the following:</p>	
<p>5.8.1 Formulate questions and design a study that guides the collection of data.</p>	<p>Student Edition: 579 #19, 587 #14, 620 #16, 657 #20-#23 <i>Graphing Calculator Lab</i> 500-501, 516-517, 581, 589-590</p> <p>Teacher Wraparound Edition: TT 620</p>
<p>Organize, display, and read data including box and whisker plots (with and without technology).</p>	<p>Student Edition: 576-580, 605-610, 617-621 <i>Concepts and Skills Bank</i> 749-750 <i>Extra Practice</i> 697-698 <i>Graphing Calculator Lab</i> 581, 611</p> <p>Teacher Wraparound Edition: AE 577, 607, 618; FM 618</p>
<p>5.8.2 Select and apply appropriate measures of data distribution, using interquartile range and central tendency.</p>	<p>Student Edition: 591-596, 599-604 <i>Spreadsheet Lab</i> 597</p> <p>Teacher Wraparound Edition: A 596; AE 592, 593, 600, 601; T 591, 599</p>
<p>5.8.3 Evaluate statistical arguments that are based on data analysis for accuracy and validity.</p>	<p>Student Edition: 577 Example 2-Example 3, 578-579, 584 Example 3, 653-657, 587-588 <i>Spreadsheet Lab</i> 590 #1-#2</p> <p>Teacher Wraparound Edition: AE 584, 654, 655</p>
<p>5.8.4 Find the number of combinations possible in mathematical and practical situations.</p>	<p>Student Edition: 632-636, 642 #37</p> <p>Teacher Wraparound Edition: AE 633; DI 635; PA 633</p>

STANDARDS	PAGE REFERENCES
Distinguish between permutations and combinations.	<p>The following examples use concepts that can be used to meet this standard.</p> <p>Student Edition: 632-636, 642 #37</p> <p>Teacher Wraparound Edition: AE 633; DI 635; PA 633</p>
<p>5.8.5</p> <p>Differentiate between the probability of an event and the odds of an event.</p>	<p>Student Edition: 637-642, 643-647</p> <p><i>Probability Lab</i> 648-649</p> <p><i>Problem-Solving Investigation</i> 650</p> <p>Teacher Wraparound Edition: A 647; AE 644</p>
<p>5.8.6</p> <p>Formulate reasonable inferences and predictions through interpolation and extrapolation of data to solve practical problems.</p>	<p>Student Edition: 637-642, 643-647</p> <p><i>Probability Lab</i> 648-649</p> <p><i>Problem-Solving Investigation</i> 650</p> <p>Teacher Wraparound Edition: A 647; AE 644</p>