



Math Connects

Concepts, Skills, and Problem Solving

Course 3

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STANDARDS	PAGE REFERENCES
NUMBER AND OPERATIONS	
Understand derived quantities	
N.MR.07.02 Solve problems involving derived quantities such as density, velocity, and weighted averages.*	Student Edition: 26, 33 #38, 72 #31, 98 #5, 99 #27, 104 #5, 106 #35, #36, 260 #53, 553 #34, 700 #2, #3
Understand and solve problems involving rates, ratios, and proportions	
N.FL.07.03 Calculate rates of change including speed.	Student Edition: 198-203, 204-209, 596 #27, 703 #5 <i>Mid-Chapter Quiz</i> 215 #10, #11 <i>Practice Test</i> 247 #3, #14, #16 <i>Study Guide and Review</i> 243, 244 Teacher Wraparound Edition: A 203; FMC 199
N.MR.07.04 Convert ratio quantities between different systems of units, such as feet per second to miles per hour.	Student Edition: 191 #3, 192 #5, #6, #16-#23, 193 #25, #29, #30, 203 #31, 209 #29, 703 #8-#13 <i>Mid-Chapter Quiz</i> 215 <i>Practice Test</i> 247 #2, #3 Teacher Wraparound Edition: A 193; AE 191

STANDARDS	PAGE REFERENCES
<p>N.FL.07.05 Solve proportion problems using such methods as unit rate, scaling, finding equivalent fractions, and solving the proportion equation $a/b = c/d$; know how to see patterns about proportional situations in tables.*</p>	<p>Student Edition: 191 #4, 194-197, 204-209, 210-214, 219-223, 232-235, 236-241, 399-404, 703 <i>Mid-Chapter Quiz</i> 215 <i>Practice Test</i> 247, 409 <i>Study Guide and Review</i> 243-246, 408 <i>Test Practice</i> 248 #1, 249 #8</p> <p>Teacher Wraparound Edition: AE 195, 205, 211, 233, 237; ODI 194a, 210a; PAP 212</p>
Recognize irrational numbers	
<p>N.MR.07.06 Understand the concept of square root and cube root, and estimate using calculators.</p>	<p>Student Edition: 144-147, 148-151, 155-159, LA12-LA14, 702 <i>Mid-Chapter Quiz</i> 160 #1-#18 <i>Study Guide and Review</i> 180 (3-1), (3-2) <i>Study Tip</i> 157</p> <p>Teacher Wraparound Edition: AE 145, 149, 156; FMC 149, 156; ODI 148a</p>
Compute with rational numbers	
<p>N.FL.07.07 Solve problems involving operations with integers.</p>	<p>Student Edition: 43 #6, 44, 48, 49, 51, 54-55, 89 #61, 700 <i>Mid-Chapter Quiz</i> 50 #9-#18, #20 <i>Practice Test</i> 79 #19 <i>Problem-Solving Investigation</i> 62 <i>Start Smart</i> 4-5 <i>Study Guide and Review</i> 76-77 <i>Test Practice</i> 80 #1, #2, #6</p> <p>Teacher Wraparound Edition: AE 43, 54; PC 22E</p>
<p>N.FL.07.08 Add, subtract, multiply, and divide positive and negative rational numbers fluently.*</p>	<p>Student Edition: 44 #11-#28, 48 #13-#28, 54 #1-#12, 56 #68-#75, 61 #31-#34, 83, 96-101, 102-107, 108-112, 114-118, 701 <i>Mid-Chapter Quiz</i> 50 #9-#18, 131 <i>Practice Test</i> 139 <i>Study Guide and Review</i> 135-137 <i>Test Practice</i> 140 #6, 141 #9</p> <p>Teacher Wraparound Edition: AE 42, 97, 103, 115; FMC 109; ODI 62a, 102a</p>

STANDARDS	PAGE REFERENCES
<p>N.FL.07.09 Estimate results of computations with rational numbers.</p>	<p>Student Edition: 26 #38, #41, 88 #48, 275-278, 283 #32, 289 #34-#37, 704 <i>Practice Test</i> 299 <i>Problem-Solving Investigation</i> 272-273, 438-439 <i>Study Guide and Review</i> 297 <i>Study Tip</i> 115</p> <p>Teacher Wraparound Edition: AE 276</p>
ALGEBRA	
Understand and apply directly proportional relationships and relate to linear relationships	
<p>A.PA.07.01 Recognize when information given in a table, graph, or formula suggests a directly proportional or linear relationship.*</p>	<p>Student Edition: 194-197, 204-209, 214 #36 <i>Mid-Chapter Quiz</i> 215 #12, #13 <i>Study Guide and Review</i> 243 <i>Test Practice</i> 249 #14</p> <p>Teacher Wraparound Edition: ODI 194a</p>
<p>A.RP.07.02 Represent directly proportional and linear relationships using verbal descriptions, tables, graphs, and formulas, and translate among these representations.</p>	<p>Student Edition: 194-197, 204-209, 214 #36, 487-492 <i>Mid-Chapter Quiz</i> 215 #12, #13 <i>Practice Test</i> 523 #5 <i>Study Guide and Review</i> 243 <i>Test Practice</i> 249 #14</p> <p>Teacher Wraparound Edition: AE 195, 206</p>
<p>A.PA.07.03 Given a directly proportional or other linear situation, graph and interpret the slope and intercept(s) in terms of the original situation; evaluate $y = mx + b$ for specific x values, e.g., weight vs. volume of water, base cost plus cost per unit.*</p>	<p>Student Edition: 481-486, 495-499, LA19-LA21, 708 <i>Mid-Chapter Quiz</i> 494 <i>Practice Test</i> 523 #12-#14 <i>Study Guide and Review</i> 520, 521 <i>Test Practice</i> 524 #4</p> <p>Teacher Wraparound Edition: AE 482, 496; ODI 481a, 495a</p>

STANDARDS	PAGE REFERENCES
<p>A.PA.07.04 For directly proportional or linear situations, solve applied problems using graphs and equations, e.g., the heights and volume of a container with uniform cross-section; height of water in a tank being filled at a constant rate; degrees Celsius and degrees Fahrenheit; distance and time under constant speed.</p>	<p>Student Edition: 204-209, 487-492, 496-499, LA19-LA21, 708 <i>Mid-Chapter Quiz</i> 494 #17 <i>Practice Test</i> 523 #5</p> <p>Teacher Wraparound Edition: A 492; AE 205, 496; FMC 488</p>
<p>A.PA.07.05 <i>Recognize and use directly proportional relationships of the form $y = mx$, and distinguish from linear relationships of the form $y = mx + b$, b non-zero; understand that in a directly proportional relationship between two quantities one quantity is a constant multiple of the other quantity.*</i></p>	<p>Student Edition: 487-492, 495-499, 708</p> <p>Teacher Wraparound Edition: AE 496; ODI 495a</p>
<p>Understand and represent linear functions</p>	
<p>A.PA.07.06 Calculate the slope from the graph of a linear function as the ratio of “rise/run” for a pair of points on the graph, and express the answer as a fraction and a decimal; understand that linear functions have slope that is a constant rate of change.</p>	<p>Student Edition: 475-480, 481-485, 708</p> <p><i>Study Guide and Review</i> 519, 520</p> <p>Teacher Wraparound Edition: AE 482; ODI 481a</p>
<p>A.PA.07.07 Represent linear functions in the form $y = x + b$, $y = mx$, and $y = mx + b$, and graph, interpreting slope and y-intercept.</p>	<p>Student Edition: 475-479, 495-499, 528-533</p> <p><i>Study Guide and Review</i> 519 (9-3), 564 (10-1)</p> <p>Teacher Wraparound Edition: AE 476, 477; ODI 475a</p>
<p>A.FO.07.08 <i>Find and interpret the x and/or y intercepts of a linear equation or function. Know that the solution to a linear equation of the form $ax+b=0$ corresponds to the point at which the graph of $y=ax+b$ crosses the x axis.*</i></p>	<p>Student Edition: 475-479, 495-499, LA19-LA21</p> <p><i>Graphing Calculator Lab</i> 500-501 <i>Mid-Chapter Quiz</i> 494 <i>Study Guide and Review</i> 519 (9-3) <i>Study Tip</i> 489</p> <p>Teacher Wraparound Edition: A LA21; AE 476, 477; ODI 487a, 495a</p>
<p>Understand and solve problems about inversely proportional relationships</p>	
<p>A.PA.07.09 Recognize inversely proportional relationships in contextual situations; know that quantities are inversely proportional if their product is constant, e.g., the length and width of a rectangle with fixed area, and that an inversely proportional relationship is of the form $y = k/x$ where k is some non-zero number.</p>	<p>See Glencoe’s <i>Math Connects: Concepts, Skills, and Problem Solving Course 2</i> © 2009</p> <p>Student Edition: <i>Extend 6-6 Math Lab</i> 316</p>

STANDARDS	PAGE REFERENCES
<p>A.RP.07.10 Know that the graph of $y = k/x$ is not a line, know its shape, and know that it crosses neither the x nor the y-axis.</p>	<p>See Glencoe's <i>Math Connects: Concepts, Skills, and Problem Solving Course 2</i> © 2009</p> <p>Student Edition: <i>Extend 6-6 Math Lab</i> 316</p>
<p>Apply basic properties of real numbers in algebraic contexts</p>	
<p>A.PA.07.11 Understand and use basic properties of real numbers: additive and multiplicative identities, additive and multiplicative inverses, commutativity, associativity, and the distributive property of multiplication over addition.</p>	<p>Student Edition: 31, 43, 51, 52, 70, 71, 102, 156 <i>Algebra Lab</i> 40</p> <p>Teacher Wraparound Edition: FMC 71, 103; TNT 107</p>
<p>Combine algebraic expressions and solve equations</p>	
<p>A.FO.07.12 Add, subtract, and multiply simple algebraic expressions of the first degree, e.g., $(92x + 8y) - 5x + y$, or $x(x+2)$ and justify using properties of real numbers.*</p>	<p>Student Edition: 416-421, 426 #48-#51, 431 #36-#39 <i>Mid-Chapter Quiz</i> 440 #5-#9 <i>Practice Test</i> 459 #3-#4 <i>Study Guide and Review</i> 455</p> <p>Teacher Wraparound Edition: AE 418</p>
<p>A.FO.07.13 From applied situations, generate and solve linear equations of the form $ax + b = c$ and $ax + b = cx + d$, and interpret solutions.</p>	<p>Student Edition: 496, LA19-LA21</p> <p>Teacher Wraparound Edition: AE LA20</p>
<p>GEOMETRY</p>	
<p>Draw and construct geometric objects</p>	
<p>G.SR.07.01 Use a ruler and other tools to draw squares, rectangles, triangles, and parallelograms with specified dimensions.</p>	<p>Student Edition: <i>Problem-Solving Investigation</i> 314</p> <p>Teacher Wraparound Edition: ODI 216a, 218a; TNT 219</p>
<p>G.SR.07.02 Use compass and straightedge to perform basic geometric constructions: the perpendicular bisector of a segment, an equilateral triangle, and the bisector of an angle; understand informal justifications.</p>	<p>Student Edition: 732, 733, 734, 737</p> <p>Teacher Wraparound Edition: TNT 325</p>

STANDARDS	PAGE REFERENCES
Understand the concept of similar polygons, and solve related problems	
<p>G.TR.07.03 Understand that in similar polygons, corresponding angles are congruent and the ratios of corresponding sides are equal; understand the concepts of similar figures and scale factor.</p>	<p>Student Edition: 218-223, 227-230, 236-241, 261 #72, 320-323, 331 #20, #26 <i>Geometry Lab</i> 324-325 <i>Mid-Chapter Quiz</i> 326 #16-#20 <i>Practice Test</i> 247 #9, #10 <i>Real-World Unit Project</i> 187 <i>Study Guide and Review</i> 245 (4-7), (4-8), (4-10) <i>Study Tip</i> 219 <i>Test Practice</i> 248 #2 <i>Test-Taking Tip</i> 221</p> <p>Teacher Wraparound Edition: A 223; AE 219, 227, 321; FMC 237; TNT 219, 325</p>
<p>G.TR.07.04 Solve problems about similar figures and scale drawings.</p>	<p>Student Edition: 223, 226-227, 229, 236-241 <i>Practice Test</i> 247 #9, #10 <i>Spreadsheet Lab</i> 231 <i>Study Guide and Review</i> 245 (4-7), 246 (4-8), (4-10) <i>Test Practice</i> 248 #4</p> <p>Teacher Wraparound Edition: AE 221, 226, 238; FMC 237</p>
<p>G.TR.07.05 Show that two triangles are similar using the criteria: corresponding angles are congruent (AAA similarity); the ratios of two pairs of corresponding sides are equal and the included angles are congruent (SAS similarity); ratios of all pairs of corresponding sides are equal (SSS similarity); use these criteria to solve problems and to justify arguments.</p>	<p>Student Edition: 218-223 (with an explanation of postulates) Also see Glencoe's <i>Pre-Algebra</i> © 2008</p> <p>Teacher Wraparound Edition: PA 523</p>
<p>G.TR.07.06 Understand and use the fact that when two triangles are similar with scale factor of r, their areas are related by a factor of r^2.</p>	<p>Student Edition: 223 #15</p> <p>Teacher Wraparound Edition: FMC 219</p>

STANDARDS	PAGE REFERENCES
DATA AND PROBABILITY	
Represent and interpret data	
<p>D.RE.07.01 Represent and interpret data using circle graphs, stem and leaf plots, histograms, and box-and-whisker plots, and select appropriate representation to address specific questions.</p>	<p>Student Edition: 45 #49, 157 #7, 253 #5, 254 #29, 270 #29, #30, 576-580, 582-588, 596 #25, #26, 605-610, 612-616, 617-621, 710, 749, 753 <i>Graphing Calculator Lab</i> 581, 611 <i>Mid-Chapter Quiz</i> 274 #11, 598 <i>Practice Test</i> 627 #10, #14-#16 <i>Real-World Unit Project</i> 571 <i>Spreadsheet Lab</i> 589-590 <i>Study Guide and Review</i> 623, 624, 625, 626 <i>Test Practice</i> 568 #2, 628 #1, 629 #10 Teacher Wraparound Edition: AE 253, 577, 583, 584, 606, 607, 613, 618; FMC 614, 618; ODI 284a, 582a, 612a, 617a</p>
<p>D.AN.07.02 Create and interpret scatter plots and find line of best fit; use an estimated line of best fit to answer questions about the data.</p>	<p>Student Edition: 510-515, 533 #44-#46 <i>Graphing Calculator Lab</i> 516-517 <i>Practice Test</i> 523 #19-#21 <i>Study Guide and Review</i> 522 <i>Study Tip</i> 511 <i>Test Practice</i> 525 #9 Teacher Wraparound Edition: AE 512; FMC 511</p>
Compute statistics about data sets	
<p>D.AN.07.03 Calculate and interpret relative frequencies and cumulative frequencies for given data sets.</p>	<p>Student Edition: 643-647 <i>Mid-Chapter Quiz</i> 652 #12-#14 <i>Study Guide and Review</i> 661 <i>Test Practice</i> 665 #12 Teacher Wraparound Edition: AE 644</p>

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<p>D.AN.07.04 Find and interpret the median, quartiles, and interquartile range of a given set of data.</p>	<p>Student Edition: 591-596, 599-604 <i>Mid-Chapter Quiz</i> 598 #7-#9 <i>Practice Test</i> 627 #6-#11 <i>Real-World Unit Project</i> 571 <i>Spreadsheet Lab</i> 597 <i>Study Guide and Review</i> 624, 625</p> <p>Teacher Wraparound Edition: A 604; AE 592, 593, 600, 601; ODI 599a</p>

* revised expectations in italics