



MathScape

Seeing and Thinking Mathematically

Course 2

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STANDARDS	PAGE REFERENCES
NUMBER AND OPERATIONS	
Understand derived quantities	
<p>N.ME.07.01 Understand derived quantities such as density, velocity, and weighted averages.</p>	<p>See Glencoe's <i>MathScape—Mathematics of Motion</i> © 2005.</p> <p>With explanation of the term <i>derived quantities</i>, the following could be used in a limited way to meet this standard.</p> <p>Student Edition: 72-75, 87, 88</p>
<p>N.FL.07.02 Solve problems involving derived quantities.</p>	<p>See Glencoe's <i>MathScape—Mathematics of Motion</i> © 2005</p> <p>Student Edition: With explanation of the term <i>derived quantities</i>, the following could be used in a limited way to meet this standard. 72-75, 87, 88</p>
Understand and solve problems involving rates, ratios, and proportions	
<p>N.FL.07.03 Calculate rates of change including speed.</p>	<p>See Glencoe's <i>MathScape—Mathematics of Motion</i> © 2005</p> <p>Student Edition: 72-75, 87, 88</p>

STANDARDS	PAGE REFERENCES
<p>N.MR.07.04 Convert ratio quantities between different systems of units such as feet per second to miles per hour.</p>	<p>Student Edition: 16-17, 18-19, 20-21, 38, 39, 40, 142-143, 144-145, 168, 169, 170</p> <p>Teacher’s Guide: 4, 5, 14, 15, 20A</p> <p>Quick Review Math Handbook Book 2: 292</p>
<p>N.FL.07.05 Solve simple 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: 6-7, 8-9, 10-11, 16-17, 18-19, 20-21, 38, 39, 140-141, 142-143, 144-145, 168-170</p> <p>Teacher’s Guide: 4, 5, 6A, 14, 15, 20A</p> <p>Quick Review Math Handbook Book 2: 102-104, 110, 112, 292-295, 409-410</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: 106-107, 110-111, 128, 130</p> <p>Teacher’s Guide: 93H, 107A, 110A, 111A</p> <p>Quick Review Math Handbook Book 2: 172-177</p>
Compute with rational numbers	
<p>N.FL.07.07 Solve problems involving operations with integers.</p>	<p>Student Edition: 96-97, 98-99, 100-101, 102-103, 124-127</p> <p>Teacher’s Guide: 93G, 94, 95, 96A, 98A, 100A, 101A, 103A</p> <p>Quick Review Math Handbook Book 2: 91, 92, 93, 95</p>
<p>N.FL.07.08 Add, subtract, multiply and divide negative rational numbers.</p>	<p>The following examples are limited to integers.</p> <p>Student Edition: 96-97, 98-99, 100-101, 102-103, 124-127, 196-197</p> <p>Teacher’s Guide: 96A, 98A, 99A, 101A, 103A</p> <p>Quick Review Math Handbook Book 2: 91, 92, 93, 95, 114, 115, 120-121, 122</p>

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<p>N.FL.07.09 Estimate results of computations with rational numbers.</p>	<p>Student Edition: 10-11, 12-13, 26-27, 146-147, 154-155, 160-161, 162-163, 171, 176, 177</p> <p>Teacher’s Guide: 10A, 26A, 27A, 146A, 154A, 161A, 162A</p> <p>Quick Review Math Handbook Book 2: 132, 134, 139-141, 149, 151</p>
<p>ALGEBRA</p>	
<p>Understand and apply directly proportional relationships and relate to linear relationships</p>	
<p>A.PA.07.01 Recognize when information given in a table, graph, or formula suggests a proportional or linear relationship.</p>	<p>Student Edition: 20-21, 22-23, 40, 41, 196-197, 198-199, 200-201, 218, 219</p> <p>Teacher’s Guide: 20A, 22A, 192, 193</p> <p>Quick Review Math Handbook Book 2: 289, 291</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: 20-21, 22-23, 40, 41, 196-197, 198-199, 200-201, 218, 219</p> <p>Teacher’s Guide: 20A, 22A, 192, 193</p> <p>Quick Review Math Handbook Book 2: 289, 291</p>
<p>A.PA.07.03 Given a directly proportional or linear situation, graph and interpret the slope and intercept(s) in terms of the original situation; evaluate $y = kx$ for specific x values, given k, e.g., weight vs. volume of water, base cost plus cost per unit.</p>	<p>Student Edition: 196-197</p> <p>Teacher’s Guide: 197A</p> <p>Quick Review Math Handbook Book 2: 308-313</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: 196, 197, 199, 217, 218</p> <p>Teacher’s Guide: 199A</p> <p>Also see Glencoe’s <i>MathScape Course 3</i> © 2005</p> <p>Student Edition: 58-67, 70-71, 82-85 (distance and time graphs)</p> <p>Teacher’s Guide: 49, 58</p> <p>Quick Review Math Handbook Book 2: 289</p>
<p>A.PA.07.05 Understand 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.</p>	<p>See Glencoe’s <i>MathScape—Family Portraits</i> © 2005</p> <p>Student Edition: 274-275, 276-277, 280-281, 282-283, 284-285, 303, 304, 305, 306, 307</p> <p>Teacher’s Guide: 157, 269G, 271, 279</p> <p>Quick Review Math Handbook Book 2: 314, 315</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>See Glencoe’s <i>MathScape—Roads and Ramps</i> © 2005</p> <p>Student Edition: 242, 245</p> <p>Teacher’s Guide: 224-225</p> <p>See Glencoe’s <i>MathScape—Family Portraits</i> © 2005</p> <p>Student Edition: 281</p> <p>Quick Review Math Handbook Book 2: 308-313, 317, 319</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>See Glencoe’s <i>MathScape—Family Portraits</i> © 2005</p> <p>Student Edition: 278-285, 305-307</p> <p>Teacher’s Guide: 282A</p> <p>Quick Review Math Handbook Book 2: 314-319, 321</p>

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<p>A.FO.07.08 Know that the solution to a linear equation corresponds to the point at which its graph crosses the x-axis.</p>	<p>Student Edition: 194-195, 196-202, 217, 219</p> <p>Teacher's Guide: 192, 193</p> <p><i>Quick Review Math Handbook Book 2:</i> 314-319, 321</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>MathScape—Family Portraits</i> © 2005</p> <p>Student Edition: 274-275, 276-277, 303, 304</p> <p>Teacher's Guide: 269G, 271</p> <p><i>Quick Review Math Handbook Book 3:</i> 260</p>
<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>MathScape—Family Portraits</i> © 2005</p> <p>Student Edition: 274-275, 276-277, 303, 304</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: 188-189, 203, 214</p> <p>Teacher's Guide: 183, 188A</p> <p><i>Quick Review Math Handbook Book 2:</i> 76-78, 280</p> <p><i>Math Skills Maintenance Workbook Course 2:</i> 72-74</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 $-2x(5x - 4)$, and justify using properties of real numbers.</p>	<p>Student Edition: 188-189</p> <p>Teacher's Guide: 188A, 189A</p> <p><i>Quick Review Math Handbook Book 2:</i> 268-274</p>

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<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>See Glencoe's <i>MathScape—Exploring the Unknown</i> © 2005</p> <p>Student Edition: 204-205, 219</p> <p>See Glencoe's <i>MathScape—Family Portraits</i> © 2005</p> <p>Student Edition: 280-281, 282-283, 284-285, 305-307</p>
GEOMETRY	
Draw and construct geometric objects	
<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: 152-153, 173, 290-291, 300-301, 309, 313</p> <p>Teacher's Guide: 290A, 300A</p> <p>Quick Review Math Handbook Book 2: 338, 431, 434, 435</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: 140-141, 152-153, 168, 169, 173, 274-275, 300-301, 302, 313</p> <p>Teacher's Guide: 152A</p> <p>Quick Review Math Handbook Book 2: 432, 435</p>
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: 140-141, 142-143, 144-145, 164-165, 168-170, 178, 280-281, 300-301, 305, 313</p> <p>Teacher's Guide: 137G, 138, 139, 140A, 141A, 143A, 280A, 283, 300A</p> <p>Quick Review Math Handbook Book 2: 330, 408-411</p>
<p>G.TR.07.04 Solve problems about similar figures and scale drawings.</p>	<p>Student Edition: 140-141, 142-143, 144-145, 164-165, 166-167, 168-170, 178, 179, 280-281, 300-301, 302, 313</p> <p>Teacher's Guide: 142A, 159, 164A</p> <p>Quick Review Math Handbook Book 2: 408-411</p>

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<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>See Glencoe's <i>Pre-Algebra</i> © 2005 Student Edition: 471-475, 500</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><i>Quick Review Math Handbook Book 2:</i> 410-411</p>
<p>Data and Probability</p>	
<p>Represent data and interpret</p>	
<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: 28-29, 32-33, 43, 244-245, 264 Teacher's Guide: 24, 25, 34, 242 <i>Quick Review Math Handbook Book 2:</i> 200, 203, 204, 205, 208</p>
<p>D.AN.07.02 Create and interpret scatter plots and find line of best fit and use an estimated line of best fit to answer questions about the data.</p>	<p>Student Edition: 244-245, 264 Teacher's Guide: 242 See Glencoe's <i>MathScape—Looking Behind the Numbers</i> © 2005 for line of best fit. Student Edition: 21, 22-23, 40, 41 Teacher's Guide: 3H <i>Quick Review Math Handbook Book 2:</i> 206-207, 218</p>

STANDARDS	PAGE REFERENCES
Compute statistics about datasets	
<p>D.AN.07.03 Calculate and interpret relative frequencies and cumulative frequencies for given data sets.</p>	<p>See Glencoe's <i>MathScape—Chance Encounters</i> © 2005 Student Edition: 52-53, 74-79, 81, 89-91</p>
<p>D.AN.07.04 Find and interpret the median, quartiles, and interquartile range of a given set of data.</p>	<p>See Glencoe's <i>MathScape—What Does the Data Say?</i> © 2005 Student Edition: 9, 11, 37, 38 See Glencoe's <i>MathScape—Looking Behind the Numbers</i> © 2005 Student Edition: 8-9, 35 <i>Quick Review Math Handbook Book 2:</i> 195</p>