



Contemporary Mathematics in Context

A Unified Approach
Course 2
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STANDARDS	PAGE REFERENCES
<p>Content Standard A: Mathematical facts, concepts, principles, and theories Numeration: Understand and use numeration Measurement: Select and use systems, units, and tools of measurement</p>	
<p>Understanding Numbers The student demonstrates understanding of real numbers by</p>	
<p>[10] N-1 identifying their subsets (natural, whole, integers, rational, irrational) (M1.4.1)</p>	<p>Student Edition: 41-45, 50, 290-293, 301-302 Teacher's Guide: I T42</p>
<p>[10] N-2 simplifying expressions with positive and negative exponents (M1.4.4 & M3.4.4)</p>	<p>Student Edition: 13, 30, 35, 40 #11, 43 #4-#6, 47 #3a, 238, 239 #1, 300-302, 305 #1, 306 #2, 307 #5, 308 #1</p>
<p>[10] N-3 expressing square roots in simplest radical form (M1.4.4 & M3.4.4)</p>	<p>Student Edition: 290 #1, 291 #2e, 292 #3-#4, 296 #2, 305 #1, 306 #4, 308 #1 <i>Checkpoint</i> 293 <i>On Your Own</i> 293, 297 Teacher's Guide: CMT T293</p>

STANDARDS	PAGE REFERENCES
<p align="center">Understanding Meaning of Operations</p>	
<p align="center">The student demonstrates conceptual understanding of mathematical operations by</p>	
<p>[10] N-4 describing or illustrating the effects of arithmetic operations on real numbers (M1.4.3)</p>	<p>Student Edition: 291 #2e, 292 #3, 298 #1, 301 #6g, 305 #1, 308 #1 <i>Checkpoint 299</i> <i>On Your Own 293, 300</i></p> <p>Teacher’s Guide: CMT T293</p> <p>Teacher Classroom Resources: <i>Master 100, 103</i></p>
<p>[10] N-5 describing or illustrating the use of inverse operations (cubing/cube root) (M1.4.3 & 1.4.5)</p>	<p>Student Edition: 298, 299 #2 <i>Checkpoint 299</i></p> <p>Teacher’s Guide: CMT T299</p>
<p>[10] N-6 describing or illustrating [counting and adding in different bases L] (M1.4.2)</p>	<p>This standard can be met in Glencoe’s <i>Mathematics: Concepts and Applications Course 3</i> © 2006 on pages 102-103.</p>
<p align="center">Number Theory</p>	
<p align="center">The student demonstrates conceptual understanding of number theory by</p>	
<p>[10] N-7 identifying or applying commutative, identity, associative, inverse, or distributive properties to real numbers and variables (M1.4.5)</p>	<p>Student Edition: 42 #3, 43 #5, 44 #7, 45, 50 #5c, 61 #5b, 278-280</p>
<p>[10] N-8 identifying or writing the prime factorization of a variable expression using exponents (M1.4.4)</p>	<p>This standard can be met in Glencoe’s <i>Mathematics: Concepts and Applications Course 1</i> © 2006 on pages 14-17 and 19.</p>
<p align="center">Measurable Attributes</p>	
<p align="center">The student demonstrates understanding of measurable attributes by</p>	
<p>[10] MEA-1 converting square and cubic units within the same system, English or metric, in real-world applications (M2.4.2)</p>	<p>This standard can be met in <i>Contemporary Mathematics in Context: A Unified Approach Course 1</i> © 2003 on pages 67 #4, 241 #4.</p>

STANDARDS	PAGE REFERENCES
<p>Content Standard A: Mathematical facts, concepts, principles, and theories</p> <p>Measurement: Select and use systems, units, and tools of measurement</p> <p>Estimation and Computation: Perform basic arithmetic functions, make reasoned estimates, and select and use appropriate methods or tools</p> <p>Functions and Relationships: Represent, analyze, and use patterns, relations, and functions</p>	
<p>Measurement Techniques</p> <p>The student uses measurement techniques by</p>	
<p>[10] MEA-2 [Applying right triangle trigonometry (sine, cosine, and tangent) to find missing dimensions in real-world applications L] (M2.4.4)</p>	<p>Student Edition: 398, 400 #2, 402 #3-#4, 403 #5-#6, 408 #1 <i>Checkpoint</i> 399, 404</p>
<p>Estimation</p> <p>The student solves problems (including real-world situations) using estimation by</p>	
<p>[10] E&C-1 [explaining why one strategy is more appropriate than another and determining why the estimation result is greater or less than the exact answer L] (M3.4.1)</p>	<p>Student Edition: 213 #d, 278 #1, 401 #2f, 402 #4d, 403 #5, 404 #8, 407 #3c, 411 #4c <i>On Your Own</i> 191 Teacher’s Guide: I T278</p>
<p>Computation</p> <p>The student accurately solves problems (including real-world situations) involving</p>	
<p>[10] E&C-2 applying basic operations with real numbers using powers [and scientific notation L] (M3.4.2 & M3.4.3)</p>	<p>Student Edition: 13, 30, 35, 40 #11, 43 #4-#6, 47 #3a, 238, 239 #1, 300-302, 305 #1, 306 #2, 307 #5, 308 #1</p>
<p>[10] E&C-3 solving problems involving percent increase or decrease (M3.4.5)</p>	<p>This standard can be met in Glencoe’s <i>Mathematics: Concepts and Applications Course 3</i> © 2006 on pages 236-240.</p>
<p>Describing Patterns and Functions</p> <p>The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by</p>	
<p>[10] F&R-1 describing or extending patterns (families of functions: linear, quadratic, absolute value), up to the nth term, represented in tables, sequences, graphs, or in problem situations (M4.4.1)</p>	<p>Student Edition: 235-237, 245 #4, 246 #3, 247 #1, 248 #3d, 256, 257, 262 #2, 274 #1 <i>Checkpoint</i> 270</p>
<p>[10] F&R-2 generalizing equations and inequalities (linear, quadratic, absolute value) using a table of ordered pairs or a graph (M4.4.4)</p>	<p>Student Edition: 59-62, 63-65, 66 #1, 71 #2, 73 #3, 92 #6, 95 #4, 103 #4, 179 #1, 184 #1</p>
<p>[10] F&R-3 describing in words how a change in one variable or constant in an equation affects the outcome of the equation (M4.3.2)</p>	<p>Student Edition: 69 #2, 97-101, 104 #2c, 120 #2, 121 #4, 122 #2, 138 #4-#5</p>

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<p>[10] F&R-4 [using a calculator as a tool when describing, extending, representing, or graphing patterns, linear or quadratic equations L] (M4.4.2)</p>	<p>Student Edition: 122 #2, 148 #5, 239, 240, 244 #1, 251 #2, 257, 258 #3, 261 #4b, 274 #1, 275 #1, 276 #1, 286 #5 <i>On Your Own</i> 277</p>
<p>Content Standard A: Mathematical facts, concepts, principles, and theories Functions and Relationships: Represent, analyze, and use patterns, relations, and functions Geometry: Construct, transform, and analyze geometric figures</p>	
<p>Modeling and Solving Equations and Inequalities The student demonstrates algebraic thinking by</p>	
<p>[10] F&R-5 modeling (graphically or algebraically) or solving situations using systems of linear equations or inequalities (including real-world applications) (M4.4.3)</p>	<p>Student Edition: 59-62, 63-65, 66 #1, 67 #2-#3, 71 #2-#3, 73 #3, 77 #3, 99, 100 #9 <i>Checkpoint</i> 101</p>
<p>[10] F&R-6 selecting and using the quadratic formula to solve problems (M4.4.2)</p>	<p>Solving quadratic equations (without quadratic formula) is found on the following pages. Student Edition: 278 #1, 279 #5, 281 #1, 285 #1, 286 #3 <i>Checkpoint</i> 280, 281 <i>On Your Own</i> 280, 282</p>
<p>[10] F&R-7 solving or identifying solutions to literal equations or formulas for a variable involving multi-steps (e.g., solve for h when $A=1/2h(b_1 + b_2)$) (M4.4.2)</p>	<p>Student Edition: 290, 305 #5, 306 #5 Also see <i>Contemporary Mathematics in Context: A Unified Approach Course 1</i> © 2003 Student Edition: 136 #2e, 218 #3, 219 #3, 224 #2-#3, 225 #2, 226 #1, 364 #3e, 375 #7, 379 #2, 381-382 #4</p>
<p>Geometric Relationships The student demonstrates an understanding of geometric relationships by</p>	
<p>[10] G-1 identifying, analyzing, comparing, or using properties of plane figures:</p> <ul style="list-style-type: none"> • supplementary, complementary or vertical angles • angles created by parallel lines with a transversal • sum of interior or exterior angles of a polygon • central angles, chords, inscribed angles or arcs of a circle (M5.4.1) 	<p>Student Edition: 304 #4, 371 #3b, 375 #6, 378 #3, 419-423, 428 #3, 430 #4 <i>Checkpoint</i> 376</p>

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<p>[10] G-2 [using isometric drawings to create two-dimensional drawings of three-dimensional objects (shapes that are composites of rectangular right prisms) L] (M5.4.2)</p>	<p>Student Edition: 247-249 #3, 260 #3e, 298-299, 303-304 #2</p> <p>Teacher’s Guide: E T298-T299; M T248-T249</p>
<p>Transformation of Shapes The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by</p>	
<p>[10] G-3 identifying congruent and similar figures using Euclidean geometry (e.g., [constructions L], coordinate geometry) (M5.4.3)</p>	<p>Student Edition: 127 #2, 128 #4, 129, 373-376, 380 #3, 382 #4, 383 #5, 395 #1</p> <p><i>On Your Own</i> 130</p> <p>Teacher’s Guide: CMT T376</p> <p>Teacher Classroom Resources: <i>Master</i> 135</p>
<p>[10] G-4 using transformations to show congruence or similarity of figures on a coordinate plane (M5.4.4)</p>	<p>Student Edition: 148 #4, 151 #3, 155 #1, 157 #1, 158 #3, 159 #5, 160 #4, 166 #3, 167 #5</p> <p><i>On Your Own</i> 154</p> <p>Teacher Classroom Resources: <i>Master</i> 49a, 50, 53, 54</p>
<p>Perimeter, Area, and Volume The student solves problems (including real-world situations) by</p>	
<p>[10] G-5 determining the volume or surface area of spheres or compound solids (M5.3.4)</p>	<p>Student Edition: 243 #4</p> <p><i>On Your Own</i> 238</p>
<p>Content Standard A: Mathematical facts, concepts, principles, and theories</p> <p>Geometry: Construct, transform, and analyze geometric figures</p> <p>Statistics and Probability: Formulate questions, gather and interpret data, and make predictions</p> <p>Position and Direction The student demonstrates understanding of position and direction when solving problems (including real-world situations) by</p>	
<p>[10] G-6 graphing a line segment on a coordinate grid and/or identifying its length or midpoint by using formulas (M5.4.5)</p>	<p>Student Edition: 81-84, 89 #6, 91 #2-#3, 92 #5, 94 #4-#5, 96 #3, 97-101, 102-108</p> <p><i>Checkpoint</i> 90</p>

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<p>[10] G-7 graphing a system of equations on a coordinate grid, identifying a solution, or determining their relationship (intersecting, parallel, perpendicular) (M5.4.5)</p>	<p>Student Edition: 59-62, 63-65, 66 #1, 67 #2-#3, 71 #2-#3, 73 #3, 77 #3, 99, 100 #9 <i>Checkpoint</i> 101</p>
<p>Construction The student demonstrates a conceptual understanding of geometric drawings or constructions by</p>	
<p>[10] G-8 [drawing, measuring, or constructing geometric models of plane figures (containing parallel and/or perpendicular lines, angles, perpendicular bisectors, congruent angles, regular polygons) L] (M5.4.6)</p>	<p>Student Edition: 81 #1, 83 #4, 87 #3, 88 #3, 89 #5b, 91 #3 <i>On Your Own</i> 87 <i>Think About This Situation</i> 80 Teacher Classroom Resources: <i>Master</i> 29, 34a</p>
<p>Data Display The student demonstrates an ability to classify and organize data by</p>	
<p>[10] S&P-1 [designing, collecting L], organizing, displaying, or explaining the classification of data in real-world problems (e.g., science or humanities, peers, community, or careers), using information from tables or graphs that display two or more sets of data [or with technology L] (M6.4.1)</p>	<p>Student Edition: 172 #2, 174 #4, 457-459, 460-461, 462-464, 466 #2, 468 #1, 469 #3, 511 #2c, 516 #1d, 519 #2 Teacher Classroom Resources: <i>Master</i> 68</p>
<p>Analysis and Central Tendency The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating, making predictions, or, describing trends; or drawing, formulating, or justifying conclusions) by</p>	
<p>[10] S&P-2 using information from a display to solve a problem or analyzing the validity of statistical conclusions (M6.4.1 & M6.4.4)</p>	<p>Student Edition: 205 #2, 206 #2, 207 #4, 211-215, 216-219, 220-226, 227-231, 256, 261 #3, 286 #5, 379 #1 Teacher’s Guide: I T212, T216; JE T231 Teacher Classroom Resources: <i>Master</i> 71, 74, 77, 79</p>
<p>[10] S&P-3 using and justifying range and measures of central tendency to determine the best representation of the data for a practical situation (M6.4.3)</p>	<p>Student Edition: 91 #4, 109, 462 #1a Teacher Classroom Resources: <i>Master</i> 130b</p>

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<p>[10] S&P-4 using a best fit line to describe trends and make predictions about data (M6.4.2)</p>	<p>Student Edition: 205 #2, 206 #2, 211-215, 216-219, 220-226, 227-231</p> <p>Teacher’s Guide: I T212, T216; JE T231</p> <p>Teacher Classroom Resources: <i>Master 71, 74, 77, 79</i></p>
<p>Probability The student demonstrates a conceptual understanding of probability and counting techniques by</p>	
<p>[10] S&P-5 explaining in words or identifying the difference between experimental and theoretical probability of independent or dependent events (M6.4.5)</p>	<p>Student Edition: 460 #2, 462 #1, 466 #1, 470 #4, 471-476, 477-484, 485-488, 489-494, 495-502, 503-509</p> <p>Teacher’s Guide: CMT T488; I T472; LO T471; N T485</p> <p>Teacher Classroom Resources: <i>Master 159, 160</i></p>
<p>[10] S&P-6 analyzing data to make predictions about the probability of independent or dependent events as a basis for solving real-world problems (M6.4.5)</p>	<p>Student Edition: 205 #2, 206 #2, 211-215, 216-219, 220-226, 227-231</p> <p>Teacher’s Guide: I T212, T216; JE T231</p> <p>Teacher Classroom Resources: <i>Master 71, 74, 77, 79</i></p>
<p>[10] S&P-7 [designing, conducting, analyzing, and communicating the results of a multi-stage probability experiment L] (M6.4.6)</p>	<p>Student Edition: 486 #1, 491 #3</p> <p><i>Think About This Situation 485</i></p>
<p>Content Standards B, C, D, and E: Process skills and abilities Applying conceptual knowledge and skills designated in all strands of Content Standard A by problem solving, communicating, reasoning, and making connections</p> <p>Problem solving: Understand and be able to select and use a variety of problem-solving strategies</p> <p>The student demonstrates an ability to problem solve by</p>	
<p>[10] PS-1 applying multi-step, integrated, mathematical problem-solving strategies (M7.4.2)</p>	<p>Student Edition: 331 #4, 335-337 #1, 341 #1, 350 #4, 403 #7, 404 #8, 406 #2, 410 #5</p> <p><i>On Your Own 405</i></p> <p><i>Think About This Situation 3</i></p>

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<p>[10] PS-2 verifying the answer by using an alternative strategy (M7.4.3)</p>	<p>Student Edition: 331 #4, 335-337 #1, 341 #1, 350 #4, 403 #7, 404 #8, 406 #2, 410 #5 <i>On Your Own</i> 405 <i>Think About This Situation</i> 3</p>
<p>Communication: Form and use appropriate methods to define and explain mathematical relationships The student communicates his or her mathematical thinking by</p>	
<p>[10] PS-3 representing mathematical problems numerically, graphically, and/or symbolically communicating math ideas in writing; or using appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions (M8.4.1, M8.4.2, & M8.4.3)</p>	<p>Student Edition: 71 #3, 161-162 #4 <i>Checkpoint</i> 78, 84, 86, 133, 141, 154, 156, 218</p>
<p>Reasoning: Use logic and reason to solve mathematical problems The student demonstrates an ability to use logic and reason by</p>	
<p>[10] PS-4 using methods of proof including direct, indirect, and counter examples to validate conjectures (M9.4.3)</p>	<p>Student Edition: 22 #3, 43 #5, 56 #3, 71 #3, 72 #2, 98 #3, 108 #4, 121 #4, 126 #1c, 127 #3, 171-173, 395 #1</p>
<p>Connections: Apply mathematical concepts and processes to situations within and outside of school The student understands and applies mathematical skills and processes across the content strands by</p>	
<p>[10] PS-5 using real-world contexts such as global issues and careers (M10.4.1 & M10.4.2)</p>	<p>Student Edition: 24-25 #4, 28 #2, 56 #3, 75-76 #1, 91 #4, 133 #1, 173, 307 #5, 308 #2, 315-316 #5, 335 #3, 359 #2, 361 #5, 485</p>