



Contemporary Mathematics in Context

A Unified Approach
Course 1
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STANDARDS	PAGE REFERENCES
<p>Content Standard A: Mathematical facts, concepts, principles, and theories</p> <p>Numeration: Understand and use numeration</p> <p>Measurement: Select and use systems, units, and tools of measurement</p>	
<p>Understanding Numbers</p> <p>The student demonstrates understanding of real numbers by</p>	
<p>[9] N-1 converting between a rational number in scientific notation and standard form (M1.4.4 & M 3.4.4)</p>	<p>The following examples can be used to convert between scientific notation and standard form.</p> <p>Student Edition: 412 #1, 426 #7, 428 #5a, 477 #1d <i>On Your Own</i> 427 part e</p> <p>Teacher's Guide: A T427 #e; E T412, T426 #7, T428 #5a</p>
<p>[9] N-2 equating different equivalent representations of the same exponential expression (e.g., $2^3 \cdot 2^5 = 2^8$) (M1.4.4 & M3.4.4)</p>	<p>Student Edition: 425 #5, 429 #6e, 433 #1, 434 #3, 436 #5, 480 #5</p> <p>Teacher's Guide: E T425 #5; N T480; O T150 #4; R T151 #4</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>[9] N-3 using models, explanations, number lines, real-life situations, describing or illustrating the effects of arithmetic operations on real numbers (M1.4.3)</p>	<p>Student Edition: 117 #4, 119 Organizing #3-#4, 120 #3, 136 #2d, #3, 139 #1, 188 #b, 203 #3b, 221 #4 <i>On Your Own</i> 115 #a</p> <p>Teacher’s Guide: A T115; SS T115</p>
<p>[9] N-4 using models, explanations, number lines, real-life situations, describing or illustrating the use of inverse operations (squaring/square root) (M1.4.3 & 1.4.5)</p>	<p>Student Edition: 72, 364 #4</p> <p>Teacher’s Guide: E T72, T364 #4b; M T369 #2c, #3f, T370 #5c</p>
<p align="center">Number Theory</p>	
<p align="center">The student demonstrates conceptual understanding of number theory by</p>	
<p>[9] N-5 applying the rules for order of operations to real numbers and variables (M1.3.5)</p>	<p>Student Edition: 136 #2-#3, 148-149 #3, 153 #3, 193 #3, 425 #5c, 433 #1, 434 #4, 436 #5, 480 #5</p> <p>Teacher’s Guide: O T150 #4; R T151 #4</p>
<p>[9] N-6 [using distributive property with variables L] (M1.4.5)</p>	<p>Student Edition: 239 #1, 240 #2, #4, 241 Reflecting #3, Extending #1</p> <p>Teacher’s Guide: M T239 #1, T240-T241</p>
<p align="center">Measurable Attributes</p>	
<p align="center">The student demonstrates understanding of measurable attributes by</p>	
<p>[9] MEA-1 estimating or converting measurements between the English and metric systems in real-world applications, given a conversion factor (e.g., miles/kilometers) (M2.4.2)</p>	<p>This text uses a wide variety of units of measure in many problems, as well as the following examples that require an understanding of measurement conversions within the English and metric system.</p> <p>Student Edition: 160 #1, 180 #4, 243-244 #1</p> <p>Teacher’s Guide: S T244</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>[9] MEA-2 applying indirect methods, such as the Pythagorean theorem to find missing dimensions, in real-world applications (M2.4.4)</p>	<p>Student Edition: 158, 159-161, 172 #4, 177 #4, 357 #4 <i>On Your Own</i> 359</p> <p>Teacher’s Guide: A T161; E T160-T161; M T172, T177; SS T161</p>
<p>Estimation</p> <p>The student solves problems (including real-world situations) using estimation by</p>	
<p>[9] E&C-1 judging whether the strategy will result in an answer greater or less than the exact answer (M3.4.1)</p>	<p>Student Edition: 76 #2, 77 #3, 100 #4b, 195 #2, 197 #4-#5, 203 #3, 207 #1 <i>Checkpoint</i> 78</p> <p>Teacher’s Guide: E T197, T207</p>
<p>Computation</p> <p>The student accurately solves problems (including real-world situations) involving</p>	
<p>[9] E&C-2 adding or subtracting rational numbers including integers with whole number exponents (M3.4.2)</p>	<p>Student Edition: 134 #3b, 138 #2, 153 #3, 227, 234 #2, 238 Modeling</p> <p>Teacher’s Guide: E T234 #2; M T134 #3b, T139 #2b</p>
<p>[9] E&C-3 multiplying or dividing rational numbers including integers with whole number exponents (M3.4.3)</p>	<p>Student Edition: 204 #4c, 238 #2, 425 #3, 433 #1, 434 #4, 436 #5, 480 #5</p> <p>Teacher’s Guide: A T238 #2; E T429 #6d; M T204 #4c; S T480</p>
<p>[9] E&C-4 determining rate by using ratio and proportion (M3.4.5)</p>	<p>Student Edition: 117 #4, 119 Organizing #3-#4, 120 #3, 136 #2d, #3, 139 #1, 188 #b, 203 #3b, 221 #4 <i>On Your Own</i> 115 #a</p> <p>Teacher’s Guide: A T115; SS T115</p>

STANDARDS	PAGE REFERENCES
<p>[9] E&C-5 [multiplying or dividing numbers in scientific notation L] (M3.4.3)</p>	<p>The following examples introduce using scientific notation to represent numbers.</p> <p>Student Edition: 412 #1, 426 #7c, 428 #5a, 477 #1d <i>On Your Own</i> 427 part e</p> <p>Teacher’s Guide: E T412</p>
<p>Describing Patterns and Functions The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by</p>	
<p>[9] 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: 100 #4, 114 #2, 116-120, 119 #3, 132-134, 183 #2, 337 #4, 422 #4, 435 #5, 441 #2-#3 <i>Checkpoint</i> 112, 248 <i>Think About This Situation</i> 99, 181</p> <p>Teacher’s Guide: A T113; N T442</p>
<p>[9] F&R-2 generalizing relationships (linear, quadratic, absolute value) using a table of ordered pairs, a graph, or an equation (M4.4.4)</p>	<p>Student Edition: 127, 137, 175 #1, 178 #4, 188 #1, 206 #3, 213 #3</p> <p>Teacher’s Guide: A T188; E T127 #1; M T137 #3c</p>
<p>[9] F&R-3 describing in words how a change in one variable in a formula affects the remaining variables (e.g., how changing the radius affects the volume of a cylinder) (M4.3.2)</p>	<p>Student Edition: 100 #4, 114 #2, 116-120, 132-134, 183 #2, 422 #4, 435 #5, 441 #2-#3 <i>Checkpoint</i> 112 <i>Think About This Situation</i> 99, 181</p> <p>Teacher’s Guide: A T113; M T134-T135</p>
<p>[9] F&R-4 [using a calculator as a tool when describing, extending, representing, or graphing patterns or linear equations L] (M4.4.2)</p>	<p>Student Edition: 203 #3d, 207 #1, 221, 231 #1d <i>Checkpoint</i> 222 #b</p> <p>Teacher’s Guide: E T221 #3b; M T218 #1-#2, T231 #1d; SS T222 #b</p>

STANDARDS	PAGE REFERENCES
<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>[9] F&R-5 modeling (graphically or algebraically) or solving situations (including real-world applications) using systems of linear equations (M4.4.3)</p>	<p>Student Edition: 226-228 #1-#4, 230 #4, 231 #2-#3, 232 #1-#4 <i>Checkpoint 228</i> Teacher’s Guide: E T226-T227; M T229-T230; R T232; SS T228</p>
<p>[9] F&R-6 solving or identifying solutions to multi-step linear equations of the form $ax \pm b = cx \pm d$, where a, b, c and d are rational numbers and $a \neq 0$, $c \neq 0$ (M4.4.2)</p>	<p>The following examples can be arranged in the form $ax \pm b = cx \pm d$. Student Edition: 119 Organizing #3-#4, 120 #1d, 139 #1, 188 #b, 203 #3b, 221 #6, 224 Organizing, 225 #2 <i>On Your Own 115 #a</i> Teacher’s Guide: A T115; M T120 #1d; SS T115</p>
<p>[9] F&R-7 solving literal equations or formulas for a variable involving one step (e.g., solve for t when $d=rt$) (M4.4.2)</p>	<p>Student Edition: 100 #4, 114 #2, 116-120, 132-134, 183 #2, 422 #4, 435 #5, 441 #2-#3 <i>Checkpoint 112</i> <i>Think About This Situation 99, 181</i> Teacher’s Guide: A T113; M T134-T135</p>
<p>Geometric Relationships The student demonstrates an understanding of geometric relationships by</p>	
<p>[9] G-1 identifying, analyzing, comparing, or using properties of angles (including supplementary or complementary) or circles (degrees in a circle) (M5.4.1)</p>	<p>Student Edition: 359, 374 #3, 375 #5c, 379 #2, 385 #3, 386 #4, 387 #6a, 401 #5 <i>Checkpoint 385</i> Teacher’s Guide: A T386; E T374 #3, T385; M T379 #2, T401 #5</p>

STANDARDS	PAGE REFERENCES
<p>Transformation of Shapes The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by</p>	
<p>[9] G-2 using a coordinate plane to solve problems involving congruent or similar shapes (M5.4.3)</p>	<p>Student Edition: 390-394, 400 #5 <i>Checkpoint</i> 391, 398 #d Teacher’s Guide: A T391; E T390-T391; M T397; T400 #5; SS T391</p>
<p>[9] G-3 [drawing or describing the results of applying transformations (translations, rotations, reflections, or dilations) to figures on a coordinate plane L] (M5.4.4)</p>	<p>Student Edition: 334, 403-406, 408-410, 413-415, 443, 449 <i>Checkpoint</i> 289, 407 Teacher’s Guide: E T403-T406; M T408-T410; SS T389</p>
<p>Perimeter, Area, and Volume The student solves problems (including real-world situations) by</p>	
<p>[9] G-4 determining the volume or surface area of prisms, cylinders, cones or pyramids (M5.3.4)</p>	<p>Student Edition: 332 #5, 377 #2c-#2d, 378 #3b, 380 #4, 381-382 Teacher’s Guide: M T381-T382; SS T332</p>
<p>Content Standard A: Mathematical facts, concepts, principles, and theories Geometry: Construct, transform, and analyze geometric figures 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>[9] G-5 graphing or identifying (using equations or formulas to determine the slope of line segments on a coordinate plane) (M5.4.5)</p>	<p>Student Edition: 183 #2, 184 #3c, 185 #4c, 186 #6b, 190 #2a, 192 Reflecting #2, 195 #2b, 196 #3, 205 #1 <i>Checkpoint</i> 96, 187 <i>On Your Own</i> 201 Teacher’s Guide: E T183-T186; M T188-T191</p>

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<p>Construction The student demonstrates a conceptual understanding of geometric drawings or constructions by</p>	
<p>[9] G-6 [drawing, measuring, or constructing geometric models of plane figures (containing parallel and/or perpendicular lines) L] (M5.4.6)</p>	<p>Student Edition: 151 #5, 326-328, 329-334, 340-344, 346, 347-350, 393-394 <i>Checkpoint</i> 344, 346 Teacher’s Guide: E T340-T344; M T347-T349; N T329, T331; T344</p>
<p>Data Display The student demonstrates an ability to classify and organize data by</p>	
<p>[9] 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 sets of data [or with technology L] (M6.4.1)</p>	<p>Student Edition: 16 #25, 19, 36 #65, 61-62 #1, #4, 72-73 <i>Checkpoint</i> 51 Teacher’s Guide: E T16 #2b, T19, T36 #6b; M T62 #1, #4, T72-T73; SS T51</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>[9] S&P-2 using information from a variety of displays or analyzing the validity of statistical conclusions found in the media (M6.4.1)</p>	<p>Student Edition: 486 #1d-#1e, 487 #4, 488 #6e-#6f, 490 #f, 491 #1c, 492 #2d, #3e, 508 #5, 525 #3 Teacher’s Guide: A T490 #f; E T488 #6e-#6f; M T508 #5; T 525 #3</p>
<p>[9] S&P-3 using 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: 16 #25, 19, 36 #65, 61-62 #1, #4, 72-73, 106 #2 <i>Checkpoint</i> 51 Teacher’s Guide: E T16 #2b, T19, T36 #6b; M T62 #1, #4, T72-T73; SS T51</p>
<p>[9] S&P-4 identifying and/or showing the meaning of a best fit line (M6.4.2)</p>	<p>Student Edition: 19-21, 23-28, 77 #3, 92 Extending #1, 195 #2, 196 #3, 197 #4-#5, 204 #4, 207 #1, 208 #3, 209 #4 <i>Checkpoint</i> 78 Teacher’s Guide: A T79 #a; E T20-T23; M T24-T29; SS T23</p>

STANDARDS	PAGE REFERENCES
<p>Probability The student demonstrates a conceptual understanding of probability and counting techniques by</p>	
<p>[9] S&P-5 determining or comparing the experimental and/or theoretical probability of independent or dependent events (M6.4.5)</p>	<p>Student Edition: 122-124, 134 #3e, 139 #2 <i>Checkpoint 125</i> <i>Think About This Situation 121</i></p> <p>Teacher’s Guide: A T132; E T131, T139 #2; M T139 #2</p>
<p>[9] S&P-6 making predictions about the probability of independent or dependent events and using the information to solve problems (M6.4.5)</p>	<p>Student Edition: 492 #3c, 497 #6a-#6b, 505 #1a, 506 #2, 507 #3c, 511 #4, 512 #5a <i>Think About This Situation 484</i></p> <p>Teacher’s Guide: M T492 #3e</p>
<p>[9] S&P 7 [designing, conducting, analyzing, and communicating the results of a probability experiment L] (M6.4.6)</p>	<p>Student Edition: 492 #3d-#3e, 495 #2, #4, 496 #2, 497 #6c, 505 #1b, 506 #2, 507 #3, 511 #4, 512 #5 <i>Think About This Situation 484</i></p> <p>Teacher’s Guide: M T492 #3</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 The student demonstrates an ability to problem solve by</p>	
<p>[9] PS-1 selecting, modifying, and applying a variety of problem-solving strategies (e.g., charts, graphing, inductive and deductive reasoning, Venn diagrams) and verifying the results (M7.4.2)</p>	<p>Student Edition: 120 #3, 122 #3, 123 #5b, 132 #1d-#1e, 134 #5, 142 #2-#3, 154 #1b <i>Checkpoint 125 #d</i></p> <p>Teacher’s Guide: E T142 #2-#3; M T134 #5</p>
<p>[9] PS-2 evaluating, interpreting, and justifying solutions to problems by using an alternative strategy (M7.4.3)</p>	<p>Student Edition: 425 #5e, 429 #5d, 434 #3, 437 #2d, 438 #4e <i>Checkpoint 430</i></p> <p>Teacher’s Guide: E T429 #5d; M T434 #3</p>

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<p>Communication: Form and use appropriate methods to define and explain mathematical relationships The student communicates his or her mathematical thinking by</p>	
<p>[9] PS-3 representing mathematical problems numerically, graphically, and/or symbolically, translating among these alternative representations; 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: 100 #4, 105 #5, 106-107 #3, 109 #2, 114 #2, 116-120, 122 #1, 123 #6, 124 #7, 128 #4, 131 #8, 134 #3e, 139 #2, 142-143, 144-146 <i>Checkpoint 112</i> <i>Think About This Situation 99, 181</i> Teacher’s Guide: A T113, T144; C T101; E T144; SS T146</p>
<p>Reasoning: Use logic and reason to solve mathematical problems The student demonstrates an ability to use logic and reason by</p>	
<p>[9] PS-4 following and evaluating an argument, judging its validity using inductive or deductive reasoning and logic; or making and testing conjectures (M9.4.1 & M9.4.2)</p>	<p>Student Edition: 100 #4, 150 #5e, 263 #3, Extending #1, 371 #4, 425 #5 <i>Checkpoint 23</i> <i>Think About This Situation 32, 47</i> Teacher’s Guide: M T150, T371 #4</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>[9] PS-5 using real-world contexts such as science, humanities, peers, community, careers, and national issues (M10.4.1 & M10.4.2)</p>	<p>Student Edition: 116-117, 119 #4, 129 #6, 131 #8, 139, 213, 215, 220, 225 #2d, 238 #b-#d, 239-242, 246 <i>Checkpoint 115, 237, 248</i> <i>Think About This Situation 121</i> Teacher’s Guide: M T216 #2; O T205 #4b; SS T115</p>