



MINNESOTA
Mathematics Academic Standards – Grades 9, 10, 11
Contemporary Mathematics in Context: A Unified Approach
Courses 1, 2, 3, 4 © 2003

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
I. MATHEMATICAL REASONING				
<u>Standard:</u> Apply skills of mathematical representation, communication and reasoning throughout the remaining three content strands. The student will:				
1. Assess the reasonableness of a solution by comparing the solution to appropriate graphical or numerical estimates or by recognizing the feasibility of solutions in a given context and rejecting extraneous solutions.	SE: 111-112, 113-114, 347 #1, 356, 360, 370 #4e, 371 #4b, 397 #1, 446-447 #4 TG: M T347	SE: 213 #d, 299 #3, 410 #5	SE: <i>Investigation</i> 64-67, 68-71, 74-76 <i>Checkpoint</i> 72 <i>On Your Own</i> 73, 77 <i>Modeling</i> 80-81 <i>Extending</i> 84-85	SE: <i>Investigation</i> 218 #2, 223 #1, 525 #2 <i>Modeling</i> 232-233 #3, 251 #3 <i>Extending</i> 237 #3, #5 <i>On Your Own</i> 527 TG: E T271, T274-T275
2. Appropriately use examples and counterexamples to make and test conjectures, justify solutions, and explain results.	SE: 4-6, 56, 282-283, 360, 435, 493 TG: M T26, T136 TN T96H	SE: 22 #3, 56 #3, 71 #3, 72 #2, 98 #3, 108 #4, 121 #4, 126 #1c, 127 #3, 395 #1	This concept is used throughout the text. The following are specific examples: SE: 262-264, 268-269, 271, 443 #2c, 459 #4 <i>Extending</i> 207 #2, 440 TG: E T198 M T202 #2b and 2d	SE: 259 <i>Modeling</i> 251-252 #5 <i>Investigation</i> 259 #1, 263 #6 <i>Organizing</i> 266 #2 <i>Reflecting</i> 267 #4 <i>Looking Back</i> 272 #3 TG: E T308, T311 M T317

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	Course 1	Course 2	Course 3	Course 4
3. Translate a problem described verbally or by tables, diagrams or graphs, into suitable mathematical language, solve the problem mathematically and interpret the result in the original context.	SE: 100 #4, 160 #1, 487 #3, 499 #1, 500 #4, 506 #1d-#1e <i>Checkpoint</i> 501 <i>Think About This Situation</i> 159 TG: E T501 #4e	SE: 59-62, 63-65, 66 #1, 71 #2, 73 #3, 92 #6, 95 #4, 103 #4, 179 #1, 184 #1	SE: 203-204 #4 <i>Extending</i> 84-85 <i>Investigation</i> 68-71, 188-189, 565-567 <i>On Your Own</i> 31, 73-76, 191-192 <i>Modeling</i> 80-81, 201-202	SE: <i>Extending</i> 254 #1 <i>Think About This Situation</i> 258 <i>Checkpoint</i> 263 <i>Modeling</i> 264-265 #2, 265 #4 <i>Looking Back</i> 273-274 #6 <i>Investigation</i> 278-279 #2 TG: E T302 M T314, T315
4. Support mathematical results by explaining why the steps in a solution are valid and why a particular solution method is appropriate.	SE: 62 #4, 356 #1a, #2a, #2d, 368 #5, 369 #3, 488 #6f, 544 #1 <i>Checkpoint</i> 361, 365, 418 TG: EX T356 TN T418S #3	SE: 22 #3, 56 #3, 71 #3, 72 #2, 98 #3, 108 #4, 121 #4, 126 #1c, 127 #3, 395 #1	SE: 29, 37-38, 210 #5 <i>Extending</i> 206 <i>Investigation</i> 226, 241-242, 262-264 <i>On Your Own</i> 286 TG: E T226 M T44 #2	SE: <i>Extending</i> 255 #4, 267 #2 <i>Investigation</i> 260 #2, 261-262 #3-#5 <i>On Your Own</i> 264 <i>Modeling</i> 265 #5 <i>Organizing</i> 266 #5 <i>Reflecting</i> 266 #1 TG: M T316, T318
5. Determine whether or not relevant information is missing from a problem and if so, decide how to best express the results that can be obtained without that information.	SE: 60 #2c, 356 #3a, 410-411 #2, 416-417 #1, 497 #5b <i>Checkpoint</i> 51 #c TG: SS T418R #b	SE: 83 #6c, 349 #3, 356 #3, 391 #3, 409 #4 <i>Reflecting</i> 335 #1	TG: E T28	SE: <i>Think About This Situation</i> 22, 53 <i>Checkpoint</i> 35, 36, 40, 55, 59, 63 <i>Reflecting</i> 45 #1, #3 TG: L T22

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	Course 1	Course 2	Course 3	Course 4
6. Know and use the relationship that exists among a logical implication of the form “if A, then B,” its converse “if B, then A,” its inverse “if not A, then not B,” and its contrapositive “if not B, then not A.”	SE: 263 #3, 362-364, 365 #5, 368 #1, 397 #1 <i>Checkpoint</i> 146 TG: E T363 #3 M T263 #3 O T397 #1	See Glencoe’s <i>Contemporary Mathematics in Context Course 1 or Course 3</i> © 2003.	SE: 285, 323 #5 <i>Investigation</i> 266-269 <i>Extending</i> 276-278 TG: E T285	SE: <i>Investigation</i> 143 #2 TG: E T183
II. NUMBER SENSE, COMPUTATION, AND OPERATIONS				
A. Number Sense Standard: Use real numbers, represented in a variety of ways, to quantify information and to solve real-world and mathematical problems. The student will:	SE: 115, 119 #3, 142 #3, 148 #2c, 276 #4b <i>Checkpoint</i> 376 #b TG: M T133 #2b O T262 #2d, T289 #2c	SE: 43 #5-#6, 44 #7-#8, 45, 50 #5c, 52 #4b, 61 #5b, 300-302, 307 #1, 309 #3 TG: C T45	This concept is used throughout the text. The following are specific examples: SE: <i>Investigation</i> 3-5, 47-48, 52-55, 188-190, 215-216, 347-349 <i>Organizing</i> 150 <i>Modeling</i> 201-204, 234-236, 355-357	SE: <i>Organizing</i> 15 #1 <i>Reflecting</i> 17 #3 <i>PUMP</i> 21 #8, #10 <i>Investigation</i> 25 #6, 30 #3 <i>On Your Own</i> 28-29 <i>Rational Zeroes Theorem</i> 387 TG: E T5, T10 OYO T9
B. Computation and Operation Standard: Appropriately use calculators and other technologies to solve algebraic, geometric, probabilistic and statistical problems. The student will:				
1. Apply the correct order of operations and grouping symbols when using calculators and other technologies.	SE: 196 #3, 220, 224 #1, 232 #4, 236 #c, 238 #2, 241 #1 TG: EX T196 #3a, T220 M T204 #4c, T208 #2b	SE: 290-292, 298 #1 <i>Checkpoint</i> 293, 299	While order of operations is not directly addressed in this course, it is used throughout the text, particularly in Units 1, 3, 6, and 7.	SE: 145, 148 <i>Investigation</i> 149 #4 <i>Checkpoint</i> 149 <i>Reflecting</i> 176 #2 TG: E T185, T189 C T190 CMT T190 N T203

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
2. Know, use and translate calculator notational conventions to mathematical notation.	SE: 20, 114-115, 117 #4, 138 #1, 143 #5, 312 #2 <i>Checkpoint</i> 115 TG: EX T20 SS T115	SE: 29 #6, 53 #6, 84-86	SE: <i>Investigation</i> 442 TG: E T492 #3 R T222 #3a	SE: <i>Investigation</i> 123 #1, 124 #2, #3 TG: E T160 OYO T162 M T164, T167, T168, T170, T171
3. Recognize the impact of units such as degrees and radians on calculations.	SE: 391-392, 397-398 #1, 399 #4, 426 #7d, 428 #4, 450 #4, 470 #6 TG: EX T391 #4 O T397	SE: 318 #7a	This concept could be addressed in teacher/class discussion with the following: SE: 177 #4, 429 #1d, TG: E T449	SE: 121 <i>Investigation</i> 121-122 #4, 123 #1, 124 #3, 124-125 #4 <i>Checkpoint</i> 122 <i>On Your Own</i> 126 <i>Modeling</i> 128-129 #5 TG: OYO T157 TN T158
4. Recognize that applying an inverse function with a calculator may lead to extraneous or incomplete solutions.	Inverse functions can be discussed and graphed when covering the following examples. SE: 114-115, 140 #5, 144-146, 160-161, 169, 172, 425-426 #6 TG: A T169 M T172	TG: E T89 #5b	See Glencoe's <i>Contemporary Mathematics in Context Course 4</i> © 2003.	SE: 143, 145 <i>Investigation</i> 143 #2, 144 #3, #4, #5, 145 #8 <i>Checkpoint</i> 149 TG: E T183, T184 NOTE: Students may use calculators to investigate possible problems with functions that may not have an inverse.

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	Course 1	Course 2	Course 3	Course 4
5. Understand the limitations of calculators such as missing or additional features on graphs due to viewing parameters or misleading representations of zero or very large numbers.	This objective can be covered with the following examples. SE: 20 #1f, 31 #3, 114-115, 118#2, 138 #1 TG: R T138 #1	TG: E T89 #5b	SE: 60 #4, 459 #3 TG: E T491	SE: <i>Investigation</i> 29-30 #2, 161 #5, 383 #1 <i>Organizing</i> 155 #5, 175 #5 <i>Extending</i> 176-177 #1 TG: E T31, T204 M T164, T220, T226
6. Understand that use of a calculator requires appropriate mathematical reasoning and does not replace the need for mental computation.	This objective can be covered with the following examples. SE: 20, 31 #3, 118 #1-#2, 138 #1 TG: A T115 EX T20 O T118	SE: 53 #6 TG: S T389	SE: 60 #4, 459 #3 TG: E T231 #4	SE: <i>Investigation</i> 161 #6, 165 #3, 165-166 #4, 166 #5, 167 #8 <i>On Your Own</i> 163 TG: E T203, T209, T210, T212 N T203
III. PATTERNS, FUNCTIONS, AND ALGEBRA				
A. Patterns and Functions				
<u>Standard:</u> Represent and analyze real-world and mathematical problems using numeric, graphic and symbolic methods for a variety of functions. The student will:				
1. Know the numeric, graphic and symbolic properties of linear, step, absolute value and quadratic functions. Graphic properties may include rates of change, intercepts, maxima and minima.	SE: 49, 149 #4b, 193 #3, 206, 212, 213, 219-222, 224 TG: A T215 EX T145, Experiment 2	SE: 82 #1d, 89 #4, 91 #2, 97-101, 102-108, 246 #2	SE: 426 #5b, 483-484, 567 #4 <i>Investigation</i> 175-177, 431-433 <i>Checkpoint</i> 178, 427, 485 <i>Organizing</i> 183-184 MORE 436-440	SE: 22 <i>Investigation</i> 23 #1, 24 #4, 25 #9, 29 #2, 147 #1, 148 #2 <i>Checkpoint</i> 149 <i>Modeling</i> 150 #1 TG: E T23, T24

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
2. Model exponential growth and decay, numerically, graphically and symbolically, using exponential functions with integer inputs.	SE: 455-456, 457-460, 461-464 <i>Checkpoint</i> 456, 464, 467 TG: EX T466 LO T455 TN T481D #5c SS T456	SE: 245 #5 TG: I T486	SE: 425, 480-481	SE: <i>Checkpoint</i> 163, 439, 443 <i>Investigation</i> 166 #5, 437 #1, 438 #3, 439 #6, 440 #1, 441 #3, 442 #6 TG: E T25
3. Analyze the effects of coefficient changes on linear and quadratic functions and their graphs.	SE: 214, 227-228, 232 <i>Think About This Situation</i> 420 TG: E T113 SS T228	SE: 69 #2, 104 #2c	SE: <i>Investigation</i> 446-448 <i>Organizing</i> 456-458, 472-473 <i>Extending</i> 460 TG: CMT T452	SE: 362, 366-367 <i>Investigation</i> 367 #2, #3 <i>Checkpoint</i> 368 <i>On Your Own</i> 368 TG: E T418 #1b, #1c, T423 #1, #2 SS T424
4. Apply basic concepts of linear, quadratic and exponential expressions or equations in real-world problems such as loans, investments and the path of a projectile.	SE: 204 #4c, 212, 215-217, 221 #4-#5, 223-224 #1-#4, 246 #3d, 247 #4b <i>Checkpoint</i> 214 <i>Think About This Situation</i> 211 TG: M T216	SE: 59-62, 63-65, 66 #1, 71 #2, 73 #3, 92 #6, 95 #4, 103 #4, 179 #1, 184 #1	SE: 238 #4, 239 #3 <i>Modeling</i> 16-17, 57-59, 234-236 <i>Investigation</i> 175-178, 229-230, 423-425	SE: <i>Investigation</i> 361 #1, 364 #4, 446 #5, 448-449 #2 <i>Modeling</i> 451 #1, #2, 452 #3, #5 TG: M T527 #1, T528 #2
5. Distinguish functions from other relations using graphic and symbolic methods.	This objective can be covered with the following examples. SE: 435, 453, 472 TG: T419C TN T481E	SE: 287 #3-#4	SE: 173, 186 #2c <i>Checkpoint</i> 174 <i>Organizing</i> 182-184	SE: <i>Investigation</i> 29 #1, 144 #4, 145 #8, 147 #1 <i>Checkpoint</i> 146, 149 <i>On Your Own</i> 146-147 <i>Organizing</i> 152 #1 TG: E T184 #4 C T185

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
B. Algebra (Algebraic Thinking) Standard: Solve simple equations and inequalities numerically, graphically, and symbolically. Use recursion to model and solve real-world and mathematical problems. The student will:				
1. Translate among equivalent forms of expressions, such as: simplify algebraic expressions involving nested pairs of parentheses and brackets, simplify rational expressions, factor a common term from an expression and apply associative, commutative and distributive laws.	SE: 220, 225 #2d, 238 #b-#d, 239-242 <i>Checkpoint 237</i> TG: EX T184 #3e M T224 #3d, T225 #4b	SE: 59-62, 63-65, 66 #1, 71 #2, 73 #3, 92 #6, 95 #4, 103 #4, 179 #1, 184 #1	SE: <i>Investigation 192-195, 197-200</i> <i>Checkpoint 196</i> <i>On Your Own 197, 201</i> <i>Modeling 201-204</i> <i>Organizing 204-205</i> <i>Reflecting 205</i> TG: CMT T200	SE: 361, 384 <i>Think About This Situation 382</i> <i>Investigation 383 #1, 385 #1, 387 #5, 388 #7</i> <i>Checkpoint 384, 389</i> TG: E T447 #6 C T448
2. Understand the relationship between absolute value and distance on the number line and graph simple expressions involving absolute value such as $ x - 3 = 6$ or $ x + 2 < 5$.	This objective can be met with the following examples: SE: 52 <i>Checkpoint 96</i>	SE: 61 #5 <i>Checkpoint 62</i>	SE: <i>Investigation 442-443</i>	SE: <i>PUMP 106 #2, 135 #6, 317 #6</i> <i>Investigation 144 #5, 414 #6</i> <i>Modeling 399 #4</i> TG: P T171 N T184 E T184 M T457 #4
3. Find equations of a line given two points on the line, a point and the slope of the line or the slope and the y-intercept of the line.	SE: 183 #2, 208 #2, 398-399 #3, TG: O T205 #4b	SE: 89 #6, 97-101, 102-108	SE: <i>Organizing 19 #2</i> <i>Investigation 558-560</i>	SE: <i>Investigation 4-5 #2</i> <i>PUMP 20 #3, 21 #8</i> TG: E T6, T8 #2, T9 #2, T12 #2, T13 #3 OYO T9, T11, T14 C T13

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
4. Translate among equivalent forms of linear equations and inequalities.	SE: 220, 225 #2d, 238 #b-#d, 239-242 <i>Checkpoint 237</i> TG: EX T184 #3e M T224 #3d, T225 #4b	SE: 59-62, 63-65, 66 #1, 71 #2, 73 #3, 92 #6, 95 #4, 103 #4, 179 #1, 184 #1	SE: 21 #7 <i>Investigation 228</i> TG: CMT T16 E T900	SE: <i>PUMP 20 #4, 21 #6, #10, 50 #1, 51 #5, 72 #2, #4, #6</i> <i>Extending 47 #1</i> TG: P T87
5. Use a variety of models such as equations, inequalities, algebraic formulas, written statements, tables and graphs or spreadsheets to represent functions and patterns in real-world and mathematical problems.	SE: 213, 215, 246, 398, 399 #3 <i>Checkpoint 248</i> TG: M T216 #2 O T205 #4b	SE: 59-62, 63-65, 66 #1, 71 #2, 73 #3, 92 #6, 95 #4, 103 #4, 179 #1, 184 #1	SE: <i>Investigation 3-5, 6-9, 11-13, 47-48, 49-51, 561-564</i> <i>Modeling 16-18, 57-59</i> <i>On Your Own 49, 56</i>	SE: <i>Investigation 9 #1, 10 #2, 77 #5</i> <i>On Your Own 11</i> <i>Modeling 12-13 #1, 14 #3</i> <i>Organizing 15 #1</i> <i>Extending 19 #3</i> <i>Think About This Situation 22</i> TG: M T15 #3, T16 #2
6. Apply the laws of exponents to perform operations on expressions with integer exponents.	SE: 236 #5, 425 #5, 433 #1-#2, 452 TG: E T236 #5, T364 #4, T425 #5, T426 #7 M T452	SE: 40 #11, 238, 300-302, 306 #2, 307 #1	See Glencoe's <i>Contemporary Mathematics in Context Course 4</i> © 2003.	SE: <i>Investigation 437 #1, 438 #4, 439 #6, 440 #1, 441 #2, 442 #6</i> <i>Checkpoint 439</i> <i>On Your Own 440</i> TG: E T508-T509 #1, T510 #4 OYO T512
7. Solve linear equations and inequalities in one variable with numeric, graphic and symbolic methods.	SE: 226-228 #1-#4, 230 #4, 231 #2-#3, 232 #1-#4 <i>Checkpoint 228</i> TG: E T226-T227 M T229-T230 R T232 SS T228	SE: 59-62, 63-65, 66 #1, 71 #2, 73 #3, 92 #6, 95 #4, 103 #4, 179 #1, 184 #1	SE: <i>Investigation 226-228</i> <i>Checkpoint 228</i> <i>On Your Own 229</i> <i>Modeling 234-236</i> <i>Organizing 237</i> <i>Reflecting 238</i>	SE: <i>PUMP 20 #4, 50 #1, 73 #7, 107 #6, 135 #10</i> <i>Investigation 25 #9, 441 #2, #3</i> <i>Checkpoint 443</i> TG: E T509 #2, T513 #2

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
8. Find real solutions to quadratic equations in one variable with numeric, graphic and symbolic methods.	SE: 148-149 #3, 153 #3, 193 #3 <i>Experiment 2</i> 145 <i>On Your Own</i> 146-147 TG: M T149 #4b	SE: 278-279, 280-288 TG: I T278 JE T280	SE: 235-236 <i>Investigation</i> 229-233 <i>On Your Own</i> 234, <i>Organizing</i> 237 <i>Reflecting</i> 238 <i>Extending</i> 239 TG: E T229	SE: <i>Investigation</i> 24 #4, 134 #5 <i>PUMP</i> 51 #5, 73 #7, 404 #5, 456 #2 <i>Reflecting</i> 401 #3 <i>Organizing</i> 421 #4, #5 TG: P T535
9. Use appropriate terminology and mathematical notation to define and represent recursion.	Recursive function notation can be taught with Unit 2 and using the problems on page 127.	SE: 7-13, 78, 99-100, 103, 337-338, 340 TG: E T18 M T103, T337-T338 S T78	SE: <i>Investigation</i> 489-490, 491-493 <i>Modeling</i> 494-497 <i>Organizing</i> 498-500 <i>Extending</i> 501-504 TG: CMT T490, T493	SE: 259, 260-261 <i>Investigation</i> 261-262 #5, 263 #7 <i>Checkpoint</i> 263 <i>On Your Own</i> 264 <i>Reflecting</i> 266 #2 TG: E T756, T757 #2 C T762
10. Create and use recursive formulas to model and solve real-world and mathematical problems.	SE: 7-13, 78, 99-100, 103, 337-338, 340 TG: E T18 M T103, T337-T338 S T78	SE: 233-237, 245 #4, 246 #3, 247 #1, 248 #3d, 256, 257, 262 #2, 274 #1 <i>Checkpoint</i> 270	SE: <i>Investigation</i> 491-493, 506-509 <i>Modeling</i> 494-497, 519-521 <i>Organizing</i> 498-500 <i>Extending</i> 501-504, 526 <i>Think About This Situation</i> 505 TG: CMT T490, T493	SE: 649-650 <i>Investigation</i> 259 #1, 261 #4, 651 #1, 654 #2, 667 #1 <i>Organizing</i> 265 #1 <i>Think About This Situation</i> 648 TG: E T308, T309 #2, T764

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
11. Solve systems of two linear equations and inequalities with two variables using numeric, graphic and symbolic methods.	SE: 182-187, 189 #3-#4, 192-193 #2, 194-196 #1-#3, 226-228 #1-#4, 230 #4, 231 #2-#3, 232 #1-#4, 246 #3d <i>Think About This Situation</i> 211 TG: E T182 M T189	SE: 59-62, 63-65, 66 #1, 67 #2-#3, 71 #2-#3, 73 #3, 77 #3, 99, 100 #9 <i>Checkpoint</i> 10	SE: 79 #3-#5 <i>Investigation</i> 47-48, 64-67, 68-71, 74-76 <i>On Your Own</i> 73, 77 <i>Modeling</i> 80-81 <i>Organizing</i> 82-83 <i>Extending</i> 84-85	SE: <i>PUMP</i> 50 #3, 106 #3, 380 #3, 426 #3, 544 #3, 626 #3, 678 #3 TG: P T650, T733, T796
12. Understand how slopes can be used to determine whether lines are parallel or perpendicular. Given a line and a point not on the line, find the equations for the lines passing through that point and parallel or perpendicular to the given line.	SE: 183 #2, 208 #2, 398-399 #3 TG: O T205 #4b	SE: 89 #6, 97-101, 102-108	SE: <i>Investigation</i> 558-560	SE: <i>PUMP</i> 316 #3, 404 #3 <i>Investigation</i> 554 #8 TG: P T374 E T659

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
IV. DATA ANALYSIS, STATISTICS, AND PROBABILITY				
A. Data and Statistics				
<u>Standard:</u> Represent data and use various measures associated with data to draw conclusions and identify trends. Understand the effects of display distortion and measurement error on the interpretation of data.				
The student will:				
1. Construct and analyze circle graphs, bar graphs, histograms, box-and-whisker plots, scatter plots and tables, and demonstrate the strengths and weaknesses of each format by choosing appropriately among them for a given situation.	SE: 20-21, 53-54, 73, 84, 87, 173, 456, 470-471	SE: 492-493, 494 #4, 496 #2, 497 #3b, 502 #8, 503 #1, 507 #3, 508 #5, 509 #3 Checkpoint 500	SE: 349 #9b, 377, 382-383 <i>On Your Own</i> 350, 354 <i>Investigation</i> 351-352, 363-367 <i>Modeling</i> 355-357 <i>Think About This Situation</i> 363 TG: EX T381 #3a	SE: 300 <i>Investigation</i> 277-278 #1, 279 #3, 303-304 #3 <i>Modeling</i> 290-291 #2 <i>Extending</i> 295 #1 <i>Think About This Situation</i> 301 TG: E T338, T340, T343, T347
2. Use measures of central tendency and variability, such as mean, median, maximum, minimum, range, standard deviation, quartile and percentile, to describe, compare and draw conclusions about sets of data.	SE: 31-36, 48-50, 52-54, 58-59 #4, 106 #2, 178 #2 <i>Checkpoint</i> 36, 51, 67 TG: M T106 #2	SE: 109, 462 #1a	SE: <i>Investigation</i> 347-349, 351-353 <i>On Your Own</i> 350, 354, 367-368 <i>Modeling</i> 355-357, 375-377 <i>Extending</i> 360-361 <i>Investigation</i> 363-367 <i>Checkpoint</i> 367	SE: 307 <i>Investigation</i> 308 #2, 309 #3, 310 #5 <i>Checkpoint</i> 310 <i>On Your Own</i> 310 <i>Modeling</i> 311 #1 <i>Extending</i> 314 #1 TG: E T366, T367 C T367

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
3. Determine an approximate best-fit line from a given scatter plot and use the line to draw conclusions.	SE: 158-159, 160 #4, 161 #c, 167, 169 #b-#d, 171 #b, 172 #4d, 176 #2 <i>Checkpoint</i> 169 TG: A T164	SE: 256, 261 #3, 286 #5, 379 #1	SE: 291-293, 522 #3b, 559 #1c <i>Investigation 3</i> 52, <i>Investigation 4</i> 561-564	SE: 60-61 <i>Modeling</i> 12 #1, 191-192 #1 <i>Investigation</i> 29 #2, 37-38 #1, 62 #2, 110 #3 <i>Think About This Situation</i> 301 TG: M T14 E T31 OYO T67
4. Know the influence of outliers on various measures and representations of data about real-world and mathematical problems.	SE: 36 #6, 52, 58-59 #4, 61-62, 74-77 <i>Checkpoint</i> 54, 78 TG: EX T36 #6b M T24 #1c	SE: 464 #3h-#3i, 465 #h, 467 #3f	SE: 347 #2c, 353 #6-#7, 357 #4, 564 #2g	SE: <i>Investigation</i> 301 #1, 302-303 #2, 304 #3, 305 #4, #6 <i>Checkpoint</i> 305 <i>Modeling</i> 311 #1, 312 #4 TG: E T361, T362 C T363
5. Understand the relationship between correlation and causation.	This objective could be introduced with the following examples. SE: 441 #1, 446, 451 #6c, 461-464 <i>Checkpoint</i> 444, 464 TG: E T474 M T471 #6, T473 #3	SE: 197-199, 200-210 TG: I T197	See Glencoe's <i>Contemporary Mathematics in Context Course 4</i> © 2003.	SE: <i>Investigation</i> 333 #1, 334 #3, 335 #4, 336-337 #7, 338-339 #1, 343 #5 <i>Checkpoint</i> 337 <i>Modeling</i> 345 #2 TG: E T391, T392, T393

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	Course 1	Course 2	Course 3	Course 4
6. Interpret data credibility in the context of measurement error and display distortion.	SE: 3-6, 66-67, 300-301, 355 TG: E T67 M T303	SE: 213 #d	SE: 156, 566 #2	SE: <i>Modeling</i> 344-345 #1, 345 #2 <i>Reflecting</i> 347 #2, 348 #4 <i>Extending</i> 348-349 #1, 349-350 #2, 351 #4 TG: M T400, T401 R T403
7. Compare outcomes of voting methods such as majority, plurality, ranked by preference, run-off and pair-wise comparison.	Voting methods are not covered in Course 1. See <i>Contemporary Mathematics in Context Course 3</i> © 2003.	SE: 207 #4	SE: 99-101, 102-104 <i>Investigation</i> 93-95, 96-98, 565-567 <i>Checkpoint</i> 95, 101 <i>On Your Own</i> 98, 101-102, 105	SE: 225 <i>Investigation</i> 225 #4, 226 #5, #6, #7, 226-227 #8, 227 #9, 227-228 #10 <i>Checkpoint</i> 228 <i>On Your Own</i> 229 TG: C T279
B. Probability Standard: Use appropriate counting procedures, calculate probabilities in various ways and apply theoretical probability concepts to solve real-world and mathematical problems. The student will:				
1. Select and apply appropriate counting procedures to solve real-world and mathematical problems, including probability problems.	SE: 509-510 #4 TG: M T509-T510 #4	SE: 471-476, 477-484, 485-488, 489-492	SE: 110, 415	SE: 216 <i>Think About This Situation</i> 216 <i>Investigation</i> 217 #1, 218 #2, 219 #3, 221 #6, 223 #1, 226 #5, 283 #2, 283-284 #3 <i>Checkpoint</i> 222 TG: E T270

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
2. Use area, trees, unions and intersections to calculate probabilities and relate the results to mutual exclusiveness, independence and conditional probabilities, in real-world and mathematical problems.	SE: 500 #4b, 504 #4, 506 #2, 509-510 #4, 513-517 <i>Think About This Situation</i> 498 TG: M T510 #4c	SE: 463, 472-476, 485-488	SE: 414 #5 <i>Checkpoint</i> 410 <i>On Your Own</i> 411 TG: E T405, T410 #8b, T419F	SE: <i>Investigation</i> 242 #3, #4, 243 #5, 246 #3 <i>Checkpoint</i> 244 <i>Organizing</i> 252 #1 <i>Reflecting</i> 253 #1 <i>Extending</i> 297 #4 TG: O T300 R T301
3. Use probability models, including area and binomial models, in real-world and mathematical problems.	SE: 494-495 #5 TG: M T495 #5	SE: 492 #2	SE: 411 #2 TG: M T411	SE: 300 <i>Think About This Situation</i> 301 <i>Investigation</i> 301-302 #1, 302-303 #3, 303-304 #3, 305 #6 <i>Checkpoint</i> 305, 307, 310 <i>On Your Own</i> 306 TG: OYO T363
4. For simple probability models, determine the expected values of random variables.	SE: 487 #3, 499-501, 502-504, 513-514 <i>Checkpoint</i> 489 TG: E T487 M T495 #5d	SE: 486, 487 #3, 488 #5, 489 #3b, 490 #5b, 510-512, 513-515, 516-520, 521-523 TG: SS T488		SE: 276 <i>Think About This Situation</i> 276 <i>Investigation</i> 277-278 #1, 278 #2, 282 #1, 284 #5 <i>On Your Own</i> 281-282 TG: L T335-T336 E T337, T338

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
5. Know the effect of sample size on experimental and simulation probabilities.	SE: 487 #3, 495 #5, 499-501, 502-504, 513-514 <i>Checkpoint</i> 489, 501 TG: E T487 M T495 #5b	SE: 5-6, 12-13, 32, 47, 87, 177-178, 180-182, 466 TG: E T49, T178 L T32	The effect of sample size and 90% box plots is covered on the following pages: SE: 146, 150, 156	SE: <i>Sample-Size Guideline</i> 280 <i>Investigation</i> 280 #6, 319 #1, 321 #3 <i>Checkpoint</i> 310 <i>On Your Own</i> 310 <i>Modeling</i> 311-312 #2 <i>Organizing</i> 312-313 #1 <i>Extending</i> 315 #2 TG: M T368
6. Use a variety of experimental, simulation and theoretical methods to calculate probabilities.	SE: 487 #3, 495 #5b, 499-501, 502-504, 513-514 <i>Checkpoint</i> 489, 501 TG: E T487 M T495 #5b	SE: 471-476, 477-484, 485-488, 489-492	SE: 401 #3g, 403 #2, 404, 410 #8 <i>Investigation</i> 405-410 <i>Checkpoint</i> 404, 410 <i>Modeling</i> 411-412 <i>On Your Own</i> 405, 411	SE: <i>On Your Own</i> 281-282, 286-287, 289 <i>Investigation</i> 284 #4, 288 #9 <i>Checkpoint</i> 286, 289 <i>Modeling</i> 311 #1 <i>Organizing</i> 313 #4 TG: M T368, T369
V. SPATIAL SENSE, GEOMETRY AND MEASUREMENT				
A. Spatial Sense				
Standard: Use models to represent and understand two- and three-dimensional shapes and how various motions affect them. Recognize the relationship between different representations of the same shape.				
The student will:				
1. Use models and visualization to understand and represent three-dimensional objects and their cross sections from different perspectives.	SE: 327, 329-334, 336-338, 340-344, 347-350, 352-354 <i>Checkpoint</i> 328 TG: C T328, T333 SS T344	SE: 81-84, 99-100, 122 #2, 123 #5, 124 #1-#2, 129 #6, 152-153, 164 #5 <i>Think About This Situation</i> 149 TG: I T81	SE: 426, 435, 557 <i>Investigation</i> 553-554 TG: E T426	SE: <i>Investigation</i> 515 #1, 516 #4, 517 #5, 525 #2, 526 #4, 528 #1 <i>Checkpoint</i> 517 <i>On Your Own</i> 517, 527 TG: E T623, T631

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
B. Geometry Standard: Apply basic theorems of plane geometry, right triangle trigonometry, coordinate geometry and a variety of visualization tools to solve real-world and mathematical problems. The student will:				
1. Know and use theorems about triangles and parallel lines in elementary geometry to justify facts about various geometrical figures and solve real-world and mathematical problems. These theorems include criteria for two triangles to be congruent or similar and facts about parallel lines cut by a transversal.	SE: 353, 359, 362-364, 365 #5, 368 #1, 369, 372, 385 TG: E T363 #3 O T397 #1	SE: 371 #3b, 375 #6, 378 #3 Checkpoint 376	SE: 285-286, 287 Investigation 282-283, 298-303, 304-307, 316-318 Modeling 288-289 Organizing 290-293, 312-313 Think About This Situation 297	SE: Investigation 89 #6, 90 #7, 91-92 #1, 92-93 #4, 93 #5, #7, 470 #6 Checkpoint 90 On Your Own 91 Extending 475 TG: E T538, T551
2. Know and use theorems about circles to justify geometrical facts and solve real-world and mathematical problems. These theorems include the relationships involving tangent lines and radii, the relationship between inscribed and central angles and the relationship between the measure of a central angle and arc length.	SE: 135-136, 359, 360 #7, 366, 371 #2-#3, 372 #4 TG: E T359 M T136 #2	SE: 304 #4, 419-423, 428 #3, 430 #4	SE: 296 #5, 322 #5, 324 #5	SE: 467, 469 Investigation 467 #1, 468 #2, #3, 469 #4, 469-470 #5 On Your Own 471 TG: E T548, T549, T550

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
3. Know and use properties of two- and three-dimensional figures to solve real-world and mathematical problems such as: finding area, perimeter, volume and surface area; applying direct or indirect methods of measurement; the Pythagorean theorem and its converse; and properties of 45° - 45° - 90° and 30° - 60° - 90° triangles.	SE: 135-136 #1, 359, 360 #7, 366, 371 #2-#3, 372 #4, 373-376, 377-382 TG: E T359, T381 M T377-T378 O T379 R T380 SS T370	SE: 83 #6c, 94 #4, 240, 306-307 #5, 400-404, 405, 409 #3, 411 #5, 429 34 On Your Own 399	SE: 244-245 #2, 287 #8, 426, 435 Investigation 26-27, 553-554, 555-557 On Your Own 554-555 Organizing 290 #1 TG: E T426	SE: 546 Investigation 470 #6, 549-550 #3, 556 #3 Think About This Situation 547 On Your Own 551 Checkpoint 558, 561 Modeling 562 TG: E T551
4. Apply the basic concepts of right triangle trigonometry including sine, cosine and tangent to solve real-world and mathematical problems.	See <i>Contemporary Mathematics in Context Course 2</i> © 2003.	SE: 398, 400 #2, 402 #3-#4, 403 #5, #6, 409 #1 Checkpoint 399, 404	SE: 315 #3, 342 Investigation 26-27 Checkpoint 27 On Your Own 27 Organizing 290 #1b, 312 TG: CMT T27	SE: Investigation 89 #6, 90 #7, 91-92 #1, 92-93 #4, 93 #5, #7, 470 #6 Checkpoint 90 On Your Own 91 Extending 475 TG: E T538, T551
5. Use coordinate geometry to represent and examine geometric concepts such as the distance between two points, the midpoint of a line segment, the slope of a line and the slopes of parallel and perpendicular lines.	SE: 182 #1, 183 #2, 186 #6b, 190 #2a, 207 #4b, 216 #2	SE: 81-84, 89 #4, 91 #2-#3, 92 #5, 94 #4-#5, 96 #3, 97-101, 102 #2, 108 #3 Checkpoint 90	SE: 19, 324 #3 Investigation 326-328	SE: Extending 104 #2 Investigation 548-549 #2, 550 #4, #5 Checkpoint 551 On Your Own 551 Modeling 562 #1, 563 #2, 563-564 #3 TG: E T654, T655

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
6. Use numeric, graphic and symbolic representations of transformations such as reflections, translations and change of scale in one, two and three dimensions to solve real-world and mathematical problems.	SE: 334, 403-406, 408-410, 413-415, 443, 449 TG: E T403-T406 M T408-T410	SE: 109-110, 111-116, 120-125, 126-129, 133-137, 138-141, 144-148, 149, 150-154, 157-164	SE: 314 #5, 458-459, 483-485 <i>Extending</i> 440, 460 <i>Investigation</i> 442-444, 446-448, 449-451, 463-465, 466-468	SE: <i>Reflecting</i> 103 #2, 154 #2 <i>Investigation</i> 533 #6 <i>Organizing</i> 541 #5d <i>Extending</i> 543 #3 TG: E T134, T195-T196, T638-T639, T647, T649
7. Perform basic constructions with a straightedge and compass.	SE: 390 #2, 454 <i>Checkpoint</i> 391, 394 TG: E T454	SE: 81-84, 99-100, 122 #2, 123 #5, 124 #1-#2, 129 #6, 152-153 #6, 164 #5 <i>Think About This Situation</i> 149 TG: I T81	SE: <i>Modeling</i> 319-320 <i>Organizing</i> 321	SE: <i>Investigation</i> 528 #1, 529 #2, 530 #4, 533 #6, 552 #2, 554 #4 <i>Reflecting</i> 542 #4 TG: M T648 E T634, T636 NOTE: Students may use a straightedge and/or compass to create sketches or graphs as noted in these references.
8. Draw accurate representations of planar figures using a variety of tools.	SE: 327 #2, 349 #2, 383-385, 390 #2, 454 <i>Checkpoint</i> 391, 394 TG: E T454	SE: 81-84, 99-100, 122 #2, 123 #5, 124 #1-#2, 129 #6, 152-153 #6, 164 #5 <i>Think About This Situation</i> 149 TG: I T81	SE: 296 <i>Think About This Situation</i> 325 <i>Investigation</i> 326 <i>On Your Own</i> 329	SE: <i>Checkpoint</i> 527 <i>On Your Own</i> 527, 534 <i>Organizing</i> 540 #4 <i>Reflecting</i> 542 #5 <i>Investigation</i> 548 #1, 554 #8 TG: C T632, T640 OYO T632

OBJECTIVES	PAGE REFERENCES			
	Course 1	Course 2	Course 3	Course 4
C. Measurement Standard: Use the interconnectedness of geometry, algebra and measurement to explore real-world and mathematical problems.	SE: 66 #2, 67 #4, 209-210 #4, 370 #5, 379 #1-#3, 380 #2, 381 #1a, 425 #3, 448 #1, 476, 513-517 TG: E T485	SE: 429 #4 <i>On Your Own</i> 238	SE: 559-560 <i>Investigation</i> 26-27, 28-30, 32-35, 555-557	SE: 532 <i>Investigation</i> 523-524 #1, 531-532 #5 <i>Checkpoint</i> 527 <i>On Your Own</i> 527 <i>Modeling</i> 535 #1, 536 #2 <i>Organizing</i> 540 #3 <i>Reflecting</i> 541 #1 TG: C T632 E T636-T638

Codes Used for TG Pages

Course 1		Course 2		Course 3		Course 4	
A	Apply	C	Checkpoint	CMT	Constructing a Math Toolkit	C	Checkpoint
C	Checkpoint	E	Explore	E	Explore	CMT	Constructing a Math Toolkit
E	Extending	I	Investigation	EX	Extending	E	Explore
EX	Explore	JE	Journal Entry	M	More	L	Launch
LO	Lesson Overview	M	More	R	Reflecting	M	More
M	More	S	Synthesize			N	Note
O	Organizing	SS	Share and Summarize			O	Organizing
R	Reflecting					OYO	On Your Own
SS	Share and Summarize					P	PUMP
TN	Teaching Notes					R	Reflecting
						SS	Share and Summarize
						TN	Technology Note