

GLENCOE CORRELATION
MATHEMATICS: APPLICATIONS AND CONCEPTS
COURSES 1, 2, and 3
NEW YORK

Learning Standards for Mathematics, Science, and Technology
and Mathematics Core Curriculum – Intermediate Grades 5-8

Learning Standards for Mathematics, Science, and Technology

LEARNING STANDARDS	<i>MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1</i>	<i>MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2</i>	<i>MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3</i>
Standard 1 – Analysis, Inquiry, and Design (Intermediate)			
Mathematical Analysis			
Abstraction and symbolic representation are used to communicate mathematically. Students:			
<ul style="list-style-type: none"> extend mathematical notation and symbolism to include variables and algebraic expressions in order to describe and compare quantities and express mathematical relationships. 	SE: 28-31, 44 #38-#55, 45 #19-#24, 138 #34, #35, 143 #22-#24, #27, 243 #30-#33, 263 #29-#32, 278 #28-#33 362-365 <i>Standardized Test Practice</i> 46-47 #10, #11, #21, #22	SE: 18-21, 27 #50 <i>Mid-Chapter Practice Test</i> 28 #11-14 <i>The Game Zone</i> 29 TWE: I-CE 19 A 21	SE: 11-15, 19 ex 8, 20 #12-#14, 21 #52-#57, 26 #39-#42, 27 #55-#58, 29 ex 5-ex 6, 47 ex 3
Deductive and inductive reasoning are used to reach mathematical conclusions. Students:			
<ul style="list-style-type: none"> use inductive reasoning to construct, evaluate, and validate conjectures and arguments, recognizing that patterns and relationships can assist in explaining and extending mathematical phenomena. 	SE: 16 #47, 282-284 <i>Extra Practice Lesson</i> 7-6 609 <i>Mixed Problem Solving</i> 630 #12 <i>Problem-Solving Strategy</i> 280-281 #1-#6, #11, 359 #10 <i>Standardized Test Practice</i> 289 #16, 375 #12 <i>When am I ever going to use this?</i> 39 TWE: A 284	SE: 60 ex #1 <i>Hands-on Lab</i> 37 <i>Problem-Solving Strategy</i> 338-339, 444-445 TWE: B 160	SE: 9 #8-#9, 10 #18, 15 #51-#54, 276-277 <i>Hands-On Mini Lab</i> 6

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
Critical thinking skills are used in the solution of mathematical problems. Students:			
<ul style="list-style-type: none"> apply mathematical knowledge to solve real-world problems and problems that arise from the investigation of mathematical ideas, using representations such as pictures, charts, and tables. 	SE: 50-53, 86-89, 362-365 <i>Mixed Problem Solving</i> 624 #2, #8, #9, 625 #1, #2, #16, #17, 633 #3, 634 #4-#14 <i>Problem-Solving Strategy</i> 448-449 #1-#6, #13, 520-521 #1-#5 TWE: A 53	SE: 54-57, 60-63, 177-181 <i>Problem-Solving Strategy</i> 58-59, 201-202, 302-303 <i>Hands-on Lab</i> 176	SE: 7 ex 1, 176-177, 316 ex 4, 378-379, 418-419, 588-589 <i>Hands-On Lab</i> 278 TWE: DI 418
Standard 2 – Information Systems (Intermediate)			
Information Systems			
1. Information technology is used to retrieve, process, and communicate information and as a tool to enhance learning. Students:			
<ul style="list-style-type: none"> use a range of equipment and software to integrate several forms of information in order to create good quality audio, video, graphic, and text-based presentations. 	SE: <i>WebQuest</i> 90, 284, 369, 453, 578 TWE WQ 3, 173, 291, 377, 461	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: <i>WebQuest</i> 145, 244, 362, 457, 592
<ul style="list-style-type: none"> use spreadsheets and database software to collect, process, display, and analyze information. Students access needed information from electronic data bases and on-line telecommunication services. 	SE: <i>Spreadsheet Investigation</i> 60-61, 79, 165, 390, 469 <i>WebQuest</i> 164, 453 TWE: DI 68	SE: <i>Graphing Calculator</i> 84 <i>Spreadsheet Investigation</i> 90-91, 309, 361	SE: <i>Data Update</i> 27, 49, 107, 145, 164, 234, 387, 449 <i>Spreadsheet Investigation</i> 165, 245, 356-357, 439
<ul style="list-style-type: none"> systematically obtain accurate and relevant information pertaining to a particular topic from a range of sources, including local and national media, libraries, museums, governmental agencies, industries, and individuals. 	SE: 58 #10, 155 #40, 247 #28, 453 #27 TWE: DI 495 PS 129, 213, 287, 421, 501	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: from the Internet: <i>Data Update</i> 27, 49, 107, 145, 164, 234, 387, 449 TWE: DI 315

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<ul style="list-style-type: none"> collect data from probes to measure events and phenomena. 	SE: <i>Hands-On Mini Labs</i> 62, 76 <i>Spreadsheet Investigation</i> 79 <i>Graphing Calculator Investigation</i> 84-85 <i>WebQuest</i> 3, 89, 97, 164, 173, 284, 291, 369	SE: 54-57 <i>Interdisciplinary Project</i> 103, 193 <i>Hands-on Lab</i> 397 TWE: A 78 DI 370, 394	SE: <i>Graphing Calculator Investigation</i> 404-405
<ul style="list-style-type: none"> use simple modeling programs to make predictions. 	SE: <i>Spreadsheet Investigation</i> 60-61, 79, 165, 390 <i>WebQuest</i> 97, 164, 291, 369, 377, 453, 461, 578	SE: 60-63, 393-396 TWE: B 60 DI 60, 394 A 63	SE: <i>Graphing Calculator Investigation</i> 404-405 <i>Spreadsheet Investigation</i> 245
2. Knowledge of the impacts and limitations of information systems is essential to its effective and ethical use. Students:			
<ul style="list-style-type: none"> understand the need to question the accuracy of information displayed on a computer because the results produced by a computer may be affected by incorrect data entry. 	SE: <i>WebQuest</i> 3, 89 TWE: A 89	SE: 92-95 <i>Spreadsheet Investigation</i> 91 #3	TWE: T 439
<ul style="list-style-type: none"> identify advantages and limitations of data-handling programs and graphic programs. 	SE: <i>Spreadsheet Investigation</i> 61 #3	SE: <i>Spreadsheet Investigation</i> 90-91, 309, 361, 455, 523	SE: <i>Study Tip</i> 12, 105, 404
<ul style="list-style-type: none"> understand why electronically stored personal information has greater potential for misuse than records kept in conventional form. 	SE: <i>WebQuest</i> 3, 89	SE: <i>WebQuest</i> 193	SE: <i>WebQuest</i> 457

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Students will access, generate, process, and transfer information using appropriate technologies.			
3. Information technology can have positive and negative impacts on society, depending on how it is used. Students:			
<ul style="list-style-type: none"> use graphical, statistical, and presentation software to present project to fellow classmates. 	SE: <i>WebQuest</i> 90, 284, 369, 453, 578 TWE: 3, 173, 291, 377, 461	SE: <i>Interdisciplinary Project</i> 3, 103, 193 <i>Graphing Calculator Investigation</i> 84 <i>Spreadsheet Investigation</i> 90-91, 309, 361	SE: <i>WebQuest</i> 145, 244, 362, 457, 592
<ul style="list-style-type: none"> describe applications of information technology in mathematics, science, and other technologies that address needs and solve problems in the community. 	SE: <i>WebQuest</i> 3, 291 TWE: MIC 3, 97, 291	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409 <i>Spreadsheet Investigation</i> 90-91, 309, 361	SE: <i>WebQuest</i> 3, 153, 253, 371, 465
<ul style="list-style-type: none"> explain the impact of the use and abuse of electronically generated information on individuals and families. 	SE: <i>WebQuest</i> 3, 97 TWE: MIC 3, 97, 291	SE: <i>WebQuest</i> 193	SE: <i>WebQuest</i> 457
Standard 3 – Mathematics (Intermediate)			
Mathematical Reasoning			
1. Students use mathematical reasoning to analyze mathematical situations, make conjectures, gather evidence, and construct an argument. Students:			
<ul style="list-style-type: none"> apply a variety of reasoning strategies. 	SE: 13 #44, 37 #38, #39, 110 #26, 180 #34, 197 #30, 205 #34, 238 #37, #38 <i>Problem-Solving Strategy</i> 414 #12, 489 #9, #12	SE: <i>Problem-Solving Strategy</i> 22-23, 164-165, 252-253, 338-339, 391-392, 444-445, 496-497	SE: 21 #59-#61, 276-277 TWE: A 277
<ul style="list-style-type: none"> make and evaluate conjectures and arguments using appropriate language. 	TWE: DI 153, 395, 523	SE: <i>Hands-on Lab</i> 37 <i>Problem-Solving Strategy</i> 338-339 TWE: B 60 A 339, 445	SE: 10 #18, 13 ex 5, 14 #12-#13, 15 #51-#54, 21 #59-#61, 276-277 <i>Hands-On Mini Lab</i> 6

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> make conclusions based on inductive reasoning. 	SE: 9 #7, #13, #15, 13 #44, 282-284, 312 #30, #31, <i>Problem-Solving Strategy</i> 126 #9, 193 #13, 414 #12, 569 #7 <i>When am I ever going to use this?</i> 534 TWE: DI 153, 523	SE: <i>Open Ended</i> 87 <i>Problem-Solving Strategy</i> 338-339, 444-445 TWE: A 269, 339 I-CE 338	SE: 10 #18, 13 ex 5, 14 #12-#13, 15 #51-#54, 21 #59-#61, 276-277 <i>Hands-On Mini Lab</i> 6
<ul style="list-style-type: none"> justify conclusions involving simple and compound (i.e., and/or) statements. 	SE: 205 #34, 238 #37, #38, 267 #31, 307 #34-#37, 536 #21, #22	SE: <i>Critical Thinking</i> 95 <i>Problem-Solving Strategy</i> 252 #3, 338-339 TWE: A 261, 269, 450	SE: 13 ex 5, 14 #12-#13, 15 #51-#54
Number and Numeration			
2. Students use number sense and numeration to develop an understanding of the multiple uses of numbers in the real world, the use of numbers to communicate mathematically, and the use of numbers in the development of mathematical ideas. Students:			
<ul style="list-style-type: none"> understand, represent, and use numbers in a variety of equivalent forms (integer, fraction, decimal, percent, exponential, expanded and scientific notation). 	SE: 18-21, 102-105, 136 ex 5, 138 #36-#41, 294-298, 395-397 <i>Hands-On Lab</i> 100-102, 181, 299 <i>Key Concept</i> 415	SE: 10-13, 43-45, 106-108, 207-209, 216-219, 220-223	SE: 17-21, 62-66, 67-70, 98-101, 104-107, 206-209, 210-214 TWE: A 214
<ul style="list-style-type: none"> understand and apply ratios, proportions, and percents through a wide variety of hands-on explorations. 	SE: <i>Hands-On Lab</i> 384, 394, 407-408 <i>Spreadsheet Investigation</i> 390 <i>The Game Zone</i> 399 <i>When am I ever going to use this?</i> 380 TWE: A 389, 397 DI 381, 391	SE: 288-291, 297-300, 316-318, 319-321, 323-325 <i>The Game Zone</i> 311 TWE: B 316 A 318 DI 320	SE: 156-159, 170-173, 206-209, 216-219, 232-235 TWE: A 159, 173, 219

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<ul style="list-style-type: none"> develop an understanding of number theory (primes, factors, and multiples). 	SE: 10-13, 14-17, 177-180, 194-197 <i>Extra Practice Lesson 1-3</i> 594, <i>Lesson 5-4</i> 604 <i>Problem-Solving Strategy</i> 33 #5 <i>The Game Zone</i> 23, 191 TWE: A 17	SE: 197-200, 203-206, 224-226	SE: 124 #9, 227 #7, 411 #27, 489 #4, 608, 609, 612
<ul style="list-style-type: none"> recognize order relations for decimals, integers, and rational numbers. 	SE: 109 ex 2, 110 #20-#23, 199 ex 3, 200-201 #22-#27, #32, 295 ex 5, 297 #37-#39, 298 #53, 406 #35-#37 <i>Prerequisite Skills</i> 588 #13-#15 TWE: DI 108	SE: 109-111, 227-231 <i>Study Guide and Review</i> 234 # 64-69 TWE: I-CE 110 A 111, 223 DI 228	SE: 67-70, 75 #37-#40, 80 #48, 86 #7-#10, 109 #24-#25, 111 #25 TWE: A 70 DI 68
Students will understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and trigonometry.			
Operations			
2. Students use mathematical operations and relationships among them to understand mathematics. Students:			
<ul style="list-style-type: none"> add, subtract, multiply, and divide fractions, decimals, and integers. 	SE: 121-124, 141-143, 152-155, 228-231, 235-238, 261-264, 272-275, 300-303, 304-307, 310-313	SE: 120-124, 128-131, 134-137, 138-141, 244-247, 248-251, 254-257, 264-266 <i>Hands-on Lab</i> 118-119, 126-127	SE: 23-27, 28-31, 34-38, 71-75, 76-80, 82-85, 88-91, 109 #26-#38

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<ul style="list-style-type: none"> explore and use the operations dealing with roots and powers. 	Examples involving powers are: SE: 18-21, 43 #28-#31, 45 #13, 138 #36-#41 <i>Extra Practice Lesson 1-4</i> 595 <i>Mixed Problem Solving</i> 624 #7 <i>Standardized Test Practice</i> 46-47 #7, #18, 171 #10 TWE: B 18 T 19	SE: 10-13, 470-473, 475-477	SE: 98-101, 116-119, 120-122, 125-129, 132-136, 148 #37-#41 <i>The Game Zone</i> 131 TWE: A 101
<ul style="list-style-type: none"> use grouping symbols (parentheses) to clarify the intended order of operations. 	SE: 24-27, 30 #40-#42, 31 #56, 318 #27-#28, 333-336 <i>Extra Practice Lesson 1-5</i> 595 #16, #19, #21, #25, <i>Lesson 9-1</i> 611 #10-#15, #17, #18 <i>Hands-On Lab</i> 332 <i>Standardized Test Practice</i> 542 #1 TWE: T 25	SE: 14-17	SE: 11, 15 #56, 21 #64-#66, 32 #1 TWE: DI 12 TNT 12
<ul style="list-style-type: none"> apply the associative, commutative, distributive, inverse, and identity properties. 	SE: 272, 334-336, 370 #7-#14, 373 #1, #4-#7 <i>Extra Practice Lesson 9-1</i> 611 <i>Hands-On Lab</i> 332 <i>Mixed Problem Solving</i> 632 #1, #2 <i>Standardized Test Practice</i> 374 #6 TWE: T 334	SE: 30-33, 121, 258-261 <i>Open Ended</i> 122 TWE: B 30 A 33	SE: 11-15, 31 #53, 32 #1, 58 #3 TWE: A 15

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<ul style="list-style-type: none"> demonstrate an understanding of operational algorithms (procedures for adding, subtracting, etc.). 	SE: 121-124, 135-138, 141-143, 144-147, 152-155, 228-231, 235-238 <i>Prerequisite Skills</i> 589, 590, 591	SE: <i>Hands-on Lab</i> 118-119, 126-127 <i>Hands-on Mini Lab</i> 134, 138, 244	SE: 26 #1, 74 #1, 84 #1 TWE: A 27, 31, 38, 75, 80
<ul style="list-style-type: none"> develop appropriate proficiency with facts and algorithms. 	SE: 10-13 <i>Key Concept</i> 111, 272 <i>Prerequisite Skills</i> 589, 590, 591 <i>Study Tip</i> 203, 272, 404, 405	SE: 120-124, 128-131, 134-137, 138-141, 244-247, 248-251, 254-257, 264-266 <i>The Game Zone</i> 263	SE: 26 #1, 74 #1, 84 #1 TWE: A 27, 31, 38, 75, 80
<ul style="list-style-type: none"> apply concepts of ratio and proportion to solve problems. 	SE: 380-383, 386-389, 391-393, 428-431, 438-441 <i>Hands-On Lab</i> 384-385, 394 <i>Mixed Problem Solving</i> 633 #1-#4, 634 #1-#3, #6-#10, #13-#16 <i>Spreadsheet Investigation</i> 390	SE: 288-291, 297-300, 304-308, 323-325 <i>The Game Zone</i> 311 <i>Hands-on Lab</i> 322	SE: 156-159, 170-173, 174 #15-#16, 182 #22, 188-191, 199 #20, 201 #15 TWE: A 173
Modeling/Multiple Representation			
4. Students use mathematical modeling/multiple representation to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships. Students:			
<ul style="list-style-type: none"> visualize, represent, and transform two- and three-dimensional shapes. 	SE: 522-525, 528-531, 564-566 <i>Hands-On Lab</i> 532-533, 567, 574 <i>Hands-On Mini-Lab</i> 570, 575 <i>Mixed Problem Solving</i> 636 #8-#12, 637 #5, #10	SE: 428-431, 434-437, 446-450, 451-454, 456-459, 514-517 <i>Hands-on Lab</i> 460-461, 512	SE: 262-265, 272-275, 290-294, 296-299, 300-303, 331-334 <i>Hands-On Lab</i> 330 TWE: A 275

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<ul style="list-style-type: none"> use maps and scale drawings to represent real objects or places. 	SE: 391-393, 419 #23-#26, 421 #9, 479 #28 <i>Extra Practice Lesson 10-3</i> 614 <i>Hands-On Lab 394</i> <i>Mixed Problem Solving 633</i> #4, #5 <i>Standardized Test Practice</i> 423 #21 TWE: DI 391 T 392	SE: 304-308, 453 #12 <i>Spreadsheet Investigation</i> 309	SE: 184-187, 191 #21-#24, 197 #29, 200 #24-#27, 201 #14 TWE: A 187 B 184 DI 185
<ul style="list-style-type: none"> use the coordinate plane to explore geometric ideas. 	SE: 320-323, 366-369, 372 #52-#54 <i>Extra Practice Lesson 8-6</i> 611, <i>Lesson 9-7</i> 613 <i>Mixed Problem Solving 631</i> #12, #13, 632 #15 TWE: A 369 DI 321 T 321	SE: 112-115, 177-181, 182-185, 451-454 <i>The Game Zone 116</i> <i>Hands-on Lab 176</i>	SE: 201 #13, 290-291, 297, 299 #16, 301 ex 1, 302 #5-#8, 308 #29-#34 TWE: DI 291
<ul style="list-style-type: none"> represent numerical relationships in one- and two-dimensional graphs. 	SE: 56-59, 297 #39, 320-323, 366-369 <i>Extra Practice Lesson 2-2</i> 597, <i>Lesson 9-7</i> 613 <i>Hands-On Lab 354</i> <i>Spreadsheet Investigation</i> 60-61 TWE: T 56-57, 295 #3	SE: 106-108, 109-111, 172-175, 177-181, 182-185 <i>Hands-on Lab 176</i>	SE: 17-21, 23-24, 492-495, 501 ex 2, 503 #12-#29, 506 #27-#28, 507 #14-#19
<ul style="list-style-type: none"> use variables to represent relationships. 	SE: 28-31, 34-37, 341 #32, #33, 346-347 #34, #35, #41, 352 #41, #42, 362-365, 368 #15-#18 <i>Problem-Solving Strategy</i> 358, 359 #3, #4, #11, #12 TWE: T 29	SE: 18-21, 24-27, 150-152, 177-181 <i>The Game Zone 29</i>	SE: 11-15, 39-42, 47 ex 3, 48 #32-#35, 51 ex 3, 52 #32-#35 TWE: B 39 TNT 40

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<ul style="list-style-type: none"> use concrete materials and diagrams to describe the operation of real-world processes and systems. 	Venn diagrams: SE: 177 <i>Study Skill</i> 176 Function machines: SE: <i>Hands-On Lab</i> 360-361 Tree diagrams: SE: 433-436	SE: 304-308 <i>Spreadsheet Investigation</i> 455 <i>Hands-on Lab</i> 512-513, 530, 536-537 <i>Problem-Solving Strategy</i> 518-519	SE: <i>Hands-On Lab</i> 330, 482-483, 569 <i>Hands-On Mini Lab</i> 342, 574
<ul style="list-style-type: none"> develop and explore models that do and do not rely on chance. 	SE: 284 #19 <i>Hands-On Lab</i> 100-101 <i>Hands-On Mini-Lab</i> 14, 18, 34, 62, 76, 102, 304, 310	SE: 393-396, 398-401 <i>Problem-Solving Strategy</i> 391-392	SE: <i>Graphing Calculator Investigation</i> 404-405 TWE: A 377, 399, 403 B 374, 396 DI 375, 400
<ul style="list-style-type: none"> investigate both two- and three-dimensional transformations. 	Two-dimensional transformations: SE: <i>Hands-On Lab</i> 532-533	SE: 446-450, 451-454, 456-459, 514-517 <i>Hands-on Lab</i> 460-461, 512-513	SE: 290-294, 296-299, 300-303, 308 #29-#34, 309 #17-#19 TWE: A 294, 299 DI 300
<ul style="list-style-type: none"> use appropriate tools to construct and verify geometric relationships. 	SE: 507-508, 510-512, 515-517 <i>Hands-On Lab</i> 513-514, 526-527, 532 activity 2, 538-539 #8-#21 <i>Mixed Problem Solving</i> 636 #5 TWE: A 509 T 516	SE: <i>Hands-on Lab</i> 412, 416-417, 426-427, 432-433, 512-513 <i>Hands-on Mini Lab</i> 451	SE: <i>Hands-On Lab</i> 261, 266, 271, 283
<ul style="list-style-type: none"> develop procedures for basic geometric construction. 	SE: 515 ex 1, 516 ex 2, 517 #18, 539 #17-#21, 541 #8 <i>Extra Practice Lesson</i> 13-3 620 <i>Hands-On Lab</i> 513-514 TWE: A 517 DI 515	SE: <i>Hands-on Lab</i> 416-417, 426-427, 432-433, 488	SE: <i>Hands-On Lab</i> 261, 266, 271, 283

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Measurement			
5. Students use measurement in both metric and English measure to provide a major link between the abstractions of mathematics and the real world in order to describe and compare objects and data. Students:			
<ul style="list-style-type: none"> estimate, make, and use measurements in real-world situations. 	SE: 257 ex 4, 258 #28, 470-473, 476-479, 494-497 <i>Hands-On Lab</i> 480-481 <i>Mixed Problem Solving</i> 626 #11, 627 #10, #11, #13, 629 #4, 630 #1, #2, #7, #8, #10	SE: 38-41, 267-269, 270-273, 520-522, 532-535	SE: 358-362, 366 #38-#45 TWE: B 358 DI 359
<ul style="list-style-type: none"> select appropriate standard and nonstandard measurement units and tools to measure to a desired degree of accuracy. 	SE: 465-468, 476-479, 484-487, 507 ex 1, 2 <i>Extra Practice Lesson 12-1</i> 618 #22-#25, <i>Lesson 12-3</i> 618 #9-#16 <i>Hands-On Lab</i> 480-481 <i>The Game Zone</i> 483 TWE: T 466 #4, 507	SE: 441 ex #2, 443 #13-14 <i>Measurement</i> 442	SE: 358-362, 366 #38-#45, 367 #13-#15, 383 #31 TWE: A 362 B 358 DI 359
<ul style="list-style-type: none"> develop measurement skills and informally derive and apply formulas in direct measurement activities. 	SE: <i>Hands-On Lab</i> 464, 550 <i>When am I ever going to use this?</i> 39	SE: 270-273, 275-277, 489-492, 493-495, 498-500, 520-522, 524-527, 532-535, 538-541 <i>Hands-on Lab</i> 274	SE: 317 #1 <i>Hands-On Mini Lab</i> 314, 319, 335, 342, 347
<ul style="list-style-type: none"> use statistical methods and measures of central tendencies to display, describe, and compare data. 	SE: 50-53, 56-59, 62-65, 66-69, 72-75, 76-78, 80-83, 86-89 <i>Spreadsheet Investigation</i> 60-61, 79	SE: 69-72 <i>Hands-on Lab</i> 73 <i>The Game Zone</i> 75	SE: 435-438, 440 #7-#8, 445 #28-#29, 449 #24 <i>The Game Zone</i> 441 <i>Spreadsheet Investigation</i> 439 TWE: B 435 DI 436
<ul style="list-style-type: none"> explore and produce graphic representations of data using calculators/computers. 	SE: <i>Graphing Calculator Investigation</i> 84-85 <i>Spreadsheet Investigation</i> 60-61, 79 <i>WebQuest</i> 89 (see TWE 3)	SE: <i>Graphing Calculator Investigation</i> 84 <i>Spreadsheet Investigation</i> 90-91	SE: <i>Graphing Calculator Investigation</i> 425, 543 <i>Spreadsheet Investigation</i> 165

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<ul style="list-style-type: none"> develop critical judgment for the reasonableness of measurement. 	SE: 472 #28-#32, 478 #9-#16, #21-#24, 487 #13-#24 <i>Hands-On Lab</i> 475 #1 <i>Problem-Solving Strategy</i> 156-157	SE: 69-72 <i>Hands-on Lab</i> 73	SE: 358-362, 377 #33-#36
Uncertainty			
6. Students use ideas of uncertainty to illustrate that mathematics involves more than exactness when dealing with everyday situations. Students:			
<ul style="list-style-type: none"> use estimation to check the reasonableness of results obtained by computation, algorithms, or the use of technology. 	SE: 396 #3 <i>Problem-Solving Strategy</i> 156, 157 #4, #5, #12, 227 #5	SE: 240-243, 334-337, 558 <i>Problem-Solving Strategy</i> 338-339 TWE: DI 241 I-CE 335	SE: 8 ex 2, 90 #3, 121 #4, 172 #2, 226-227, 230 #3, 488-489, 600-601
<ul style="list-style-type: none"> use estimation to solve problems for which exact answers are inappropriate. 	SE: 119 #34-#36, 468 #33-#35, 472 #31, #32	SE: 240-243, 334-337 <i>Problem-Solving Strategy</i> 338-339 <i>Critical Thinking</i> 500	SE: 120-122, 136 #42, 149 #6-#8, 228-231, 235 #33, 600-601 <i>Study Tip</i> 321, 336
<ul style="list-style-type: none"> estimate the probability of events. 	SE: <i>Hands-On Lab</i> 426-427, 432	SE: 393-396, 501-503 <i>Hands-on Lab</i> 397	SE: 406-409
<ul style="list-style-type: none"> use simulation techniques to estimate probabilities. 	SE: <i>Hands-On Lab</i> 426-427, 432	SE: <i>Hands-on Mini Lab</i> 374, 381, 393 <i>The Game Zone</i> 385 <i>Problem-Solving Strategy</i> 391-392 <i>Hands-on Lab</i> 397	SE: <i>Graphing Calculator Investigation</i> 404-405 <i>Hands-On Mini Lab</i> 400
<ul style="list-style-type: none"> determine probabilities of independent and mutually exclusive events. 	SE: 428-431, 450-453, 454 #8-#15, 456 #30-#35 <i>Extra Practice Lesson</i> 11-1 616, <i>Lesson</i> 11-5 617 <i>Hands-On Lab</i> 432 <i>Mixed Problem Solving</i> 634 #1-#3, #13-#16 <i>Problem-Solving Strategy</i> 488, 489 #4, #11	SE: 398-401 <i>Study Guide and Review</i> 404 #40-43	SE: 396, 398 #9-#16, 399 #25-#26, 409 #25-#26, 412 #35-#40 TWE: A 399 B 396

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<p>Students will understand mathematics and become mathematically confident by communicating and reasoning mathematically, by applying mathematics in real-world settings, and by solving problems through the integrated study of number systems, geometry, algebra, data analysis, probability, and trigonometry.</p>			
<p>Patterns/Functions</p>			
<p>7. Students use patterns and functions to develop mathematical power, appreciate the true beauty of mathematics, and construct generalizations that describe patterns simply and efficiently. Students:</p>			
<ul style="list-style-type: none"> recognize, describe, and generalize a wide variety of patterns and functions. 	SE: 9 #7, 27 #47, 179 #29, 303 #49, 312 #30-#31, 362-365 <i>Problem-Solving Strategy</i> 126 #9, 193 #13, 414 #12 <i>When am I ever going to use this?</i> 534	SE: 177-181 <i>Problem-Solving Strategy</i> 132-133 <i>Hands-on Lab</i> 176	SE: 512-515, 517-520, 530 #4-#5, 552 #9-#13, 555 #3-#5 <i>Hands-On Lab</i> 516 TWE: A 515 B 512
<ul style="list-style-type: none"> describe and represent patterns and functional relationships using tables, charts, and graphs, algebraic expressions, rules, and verbal descriptions. 	SE: 322 ex 4, ex 5, 323 #38, #39, 362-365, 366-369 <i>Extra Practice Lesson</i> 9-6 613, <i>Lesson</i> 9-7 613 <i>Hands-On Lab</i> 360-361 <i>Problem-Solving Strategy</i> 521 #12 TWE: A 365, 369	SE: 177-181, 182-185 <i>Hands-on Lab</i> 176	SE: 517-520, 522-525, 529 #32-#35, 530 #8-#10 <i>Hands-On Lab</i> 521 TWE: A 519, 525 DI 518
<ul style="list-style-type: none"> develop methods to solve basic linear and quadratic equations. 	Examples of methods for solving linear equations: SE: 34-37, 339-342, 344-347, 350-353, 355-357 <i>Hands-On Lab</i> 337-338, 343, 354 <i>Problem-Solving Strategy</i> 358-359 <i>The Game Zone</i> 349	SE: 24-27, 156-159, 160-163, 166-169 <i>Hands-on Lab</i> 154-155 <i>The Game Zone</i> 171	SE: 45-49, 50-53, 56 #46-#58, 57 #23-#28 TWE: A 49, 53 B 45, 50

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> develop an understanding of functions and functional relationships: that a change in one quantity (variable) results in change in another. 	SE: 323 #36-#39, 362-365, 366-369, 573 #24 <i>Extra Practice Lesson 9-6</i> 613, <i>Lesson 9-7</i> 613 <i>Hands-On Lab</i> 360-361, 460, 469 TWE: A 369	SE: 177-181, 182-185 <i>Hands-on Lab</i> 176	SE: 318 #27-#28, 322 #2, 339 #33-#36, 344 #1, 345 #24, 349 #2, 351 #23 <i>Spreadsheet Investigation</i> 356-357
<ul style="list-style-type: none"> verify results of substituting variables. 	SE: 29-31, 34-37, 41 #27, 123 #23-#26, 138 #34, #35, 143 #22-#25, 237 #30, #31, 243 #30-#33, 247 #32-#35, 263 #29-#32	SE: 18-21 <i>The Game Zone</i> 29	SE: 12 ex 2-ex 3, 14 #28-#39, 19 ex 8, 21 #52-#57, 37 #12-#14, 55 #17-#18, 517 ex 1-ex 2, 519 #3
<ul style="list-style-type: none"> apply the concept of similarity in relevant situations. 	SE: 534-536, 540 #32-#34, 541 #14, #15 <i>Extra Practice Lesson 13-6</i> 621 <i>Mixed Problem Solving</i> 636 #13, #14 <i>Standardized Test Practice</i> 542-543 #8, #19c TWE: A 536 B 534 T 535	SE: 304-308, 440-443 <i>Spreadsheet Investigation</i> 309	SE: 178-182, 187 #25, 191 #25, 199 #21-#23, 201 #11-#12 <i>Hands-On Lab</i> 183 TWE: A 182 B 178
<ul style="list-style-type: none"> use properties of polygons to classify them. 	SE: 522-525, 539 #22, 541 #10-#12 <i>Extra Practice Lesson 13-4</i> 621 <i>Hands-On Lab</i> 526-527 <i>Mixed Problem Solving</i> 636 #10 TWE: A 525 B 522 DI 523 T 523	SE: 428-431, 434-437, 446-450 <i>The Game Zone</i> 439	SE: 272-275, 282 #27-#29, 284 #2, 303 #24, 307 #20 <i>The Game Zone</i> 285 <i>Hands-On Lab</i> 278 TWE: A 275

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> explore relationships involving points, lines, angles, and planes. 	SE: 506-509, 515-517, 549 #22-#26, 566 #14, #15 <i>Extra Practice Lessons 13-1 and 13-2</i> 620 <i>Hands-on Lab</i> 513-514, 526-527 <i>The Game Zone</i> 519 <i>Standardized Test Practice</i> 543 #14	SE: 413-415, 422-425 <i>Hands-on Lab</i> 412, 416-417, 426-427	SE: 256-260, 265 #36-#39, 270 #24-#27, 284 #3-#4, 306 #8-#11 <i>Hands-On Lab</i> 261 TWE: A 259 DI 257
<ul style="list-style-type: none"> develop and apply the Pythagorean principle in the solution of problems. 	SE: 551 could be used to introduce the Pythagorean principle for each half of the parallelogram as equal triangles	SE: 479-482 <i>Hands-on Lab</i> 478	SE: 132-136, 137-140, 145 #28-#30, 147 #31-#36 TWE: A 136 B 137 DI 138 TNT 138
<ul style="list-style-type: none"> explore and develop basic concepts of right triangle trigonometry. 	<i>See Mathematics: Applications and Concepts Course 3.</i>	<i>See Mathematics: Applications and Concepts Course 3.</i>	SE: <i>Hands-On Lab</i> 192-193 TWE: TT 192
<ul style="list-style-type: none"> use patterns and functions to represent and solve problems. 	SE: 323 #36, #37, 363 ex 3, 365 #23, 368-369 #18-#21 <i>Mixed Problem Solving</i> 632 #12-#15 <i>When am I ever going to use this?</i> 366 TWE: ICE 322 T 363	SE: 177-181 <i>Problem-Solving Strategy</i> 132-133 <i>Hands-on Lab</i> 176	SE: 515 #28-#32, 518 ex 4-ex 5, 520 #23-#24, 525 #32, 529 #36, 530 #7, 552 #13, 658 #4

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
Standard 6 – Interconnectedness: Common Themes (Intermediate)			
System Thinking			
1. Through systems thinking, people can recognize the commonalities that exist among all systems and how parts of a system interrelate and combine to perform specific functions. Students:			
<ul style="list-style-type: none"> describe the differences between dynamic systems and organizational systems. 	See <i>Mathematics: Applications and Concepts Course 2</i> .	SE: <i>Interdisciplinary Project 3 Math and Social Studies 3 Earth Science 45 Life Science 233</i>	See <i>Mathematics: Applications and Concepts Course 2</i> .
<ul style="list-style-type: none"> describe the differences and similarities between engineering systems, natural systems, and social systems. 	See <i>Mathematics: Applications and Concepts Course 2</i> .	SE: <i>Interdisciplinary Project 103, 409 Math and Art 409 Math and Language Arts 409</i>	SE: <i>WebQuest 253</i>
<ul style="list-style-type: none"> describe the differences between open- and closed-loop systems. 	See <i>Mathematics: Applications and Concepts Course 3</i> .	See <i>Mathematics: Applications and Concepts Course 3</i> .	SE: <i>WebQuest 371</i>
<ul style="list-style-type: none"> describe how the output from one part of a system (which can include material, energy, or information) can become the input to other parts. 	SE: 362-365 <i>Hands-On Lab 360-361</i> TWE: A 365	SE: 177-181 <i>Hands-on Lab 176</i>	SE: 545 ex 4, 546 #21-#28
Models			
2. Models are simplified representations of objects, structures, or systems used in analysis, explanation, interpretation, or design. Students:			
<ul style="list-style-type: none"> select an appropriate model to begin the search for answers or solutions to a question or problem. 	Examples of modeling: SE: <i>Hands-On Lab 100-101 Hands-On Mini-Lab 14, 34, 76, 102, 144, 158, 310, 450, 510</i>	SE: 6-9 <i>Problem-Solving Strategy 22-23, 58-59, 132-133, 201-202, 338-339, 391-392, 444-445, 496-497</i>	SE: 23 ex 1, 24 ex 3-ex 4 <i>Hands-On Mini Lab 28, 45, 71</i> TWE: A 49 DI 51, 72
<ul style="list-style-type: none"> use models to study processes that cannot be studied directly (e.g., when the real process is too slow, too fast, or too dangerous for direct observation). 	Scale drawings and scale models: SE: 391-393 <i>Hands-On Lab 394</i>	SE: 393-396 <i>Problem-Solving Strategy 391-392</i>	SE: <i>Graphing Calculator Investigation 404-405</i>

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> demonstrate the effectiveness of different models to represent the same thing and the same model to represent different things. 	Counters are used to model zero pairs and operations with integers: SE: 300-302, 305-306, 310, 316, 317 <i>Hands-On Lab 299</i> <i>Hands-On Mini-Lab 316</i> Base-ten blocks are used to model percents, decimals, and dividing decimals by whole numbers. SE: 395-397 <i>Hands-On Lab 100-101</i> <i>Hands-On Mini-Lab 144</i>	SE: 92-95, 514-517 <i>Hands-on Lab 512-513</i>	SE: 23 ex 1, 24 ex 3-ex 4 <i>Hands-On Mini Lab 28, 45, 71</i> TWE: A 49 DI 51, 72
Students will understand the relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning.			
Magnitude and Scale			
3. The grouping of magnitudes of size, time, frequency, and pressures or other units of measurement into a series of relative order provides a useful way to deal with the immense range and the changes in scale that affect the behavior and design of systems. Students:			
<ul style="list-style-type: none"> cite examples of how different aspects of natural and designed systems change at different rates with changes in scale. 	SE: 50-53, 66-69, 86-89	SE: 60-63, 92-95	SE: 166-169
<ul style="list-style-type: none"> use powers of ten notation to represent very small and very large numbers. 	SE: 136 ex 5, 137 #14, 138 #36-#41 <i>Extra Practice Lesson 4-1</i> 601 #20-#28 TWE: A 138 T 146 #5	SE: 43-45 TWE: B 43	SE: 104-107, 110 #58-#65, 111 #23-#24 TWE: DI 105 NS 106

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
Equilibrium and Stability			
4. Equilibrium is a state of stability due either to a lack of changes (static equilibrium) or a balance between opposing forces (dynamic equilibrium). Students:			
<ul style="list-style-type: none"> describe how feedback mechanisms are used in both designed and natural systems to keep changes within desired limits. 	See <i>Mathematics: Applications and Concepts Course 2</i> .	SE: <i>Math and Social Studies 3 Life Science 33, 133 #4</i>	SE: 371
<ul style="list-style-type: none"> describe changes within equilibrium cycles in terms of frequency or cycle length and determine the highest and lowest values and when they occur. 	See <i>Mathematics: Applications and Concepts Course 2</i> .	SE: <i>Animals 67</i>	See <i>Mathematics: Applications and Concepts Course 2</i> .
Patterns of Change			
5. Identifying patterns of change is necessary for making predictions about future behavior and conditions. Students:			
<ul style="list-style-type: none"> use simple linear equations to represent how a parameter changes with time. 	SE: 365 #23, 369 #19-#21 <i>Problem-Solving Strategy 315 #10</i> <i>When am I ever going to use this? 366</i>	SE: 177-181, 182-185 <i>Hands-on Lab 176</i>	SE: 124 #6
<ul style="list-style-type: none"> observe patterns of change in trends or cycles and make predictions on what might happen in the future. 	SE: 66-69, 91 #12, #13, 438-441, 455 #22-#24, 457 #9 <i>Extra Practice Lesson 2-4 597, Lesson 11-3 617</i> <i>Mixed Problem Solving 625 #9, 635 #8, #9</i> <i>Standardized Test Practice 95 #14</i>	SE: 60-63	SE: 97 #8, 401 ex 5-ex 6, 403 #19, 406-409, 540, 542 #20 <i>Hands-On Lab 22</i>

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
Optimization			
6. In order to arrive at the best solution that meets criteria within constraints, it is often necessary to make trade-offs. Students:			
<ul style="list-style-type: none"> determine the criteria and constraints and make trade-offs to determine the best decision. 	Narrowing down possible answers: SE: <i>Problem-Solving Strategy</i> 32-33 TWE: DI 32	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: <i>WebQuest</i> 3, 153, 253, 371, 465
<ul style="list-style-type: none"> use graphs of information for a decision making problem to determine the optimum solution. 	Determining reasonable answers: SE: <i>Problem-Solving Strategy</i> 156-157	SE: 60-63, 92-95	SE: 568 #32-#34
Standard 7 – Interdisciplinary Problem Solving (Intermediate)			
Connections			
1. The knowledge and skills of mathematics, science, and technology are used together to make informed decisions and solve problems, especially those relating to issues of science/technology/society, consumer decision making, design, and inquiry into phenomena. Students:			
<ul style="list-style-type: none"> analyze science/technology/society problems and issues at the local level and plan and carry out a remedial course of action. 	SE: <i>WebQuest</i> 3, 291	SE: <i>Interdisciplinary Project</i> 3, 193, 285	SE: <i>WebQuest</i> 371
<ul style="list-style-type: none"> make informed consumer decisions by seeking answers to appropriate questions about products, services, and systems; determining the cost/benefit and risk/benefit trade-offs; and applying this knowledge to a potential purchase. 	Misleading statistics: SE: 86-89 Unit price: SE: 147 #29, 382 #20-#24 Catching pricing errors: TWE: A 157	SE: <i>Shopping</i> 78, 175, 189, 253, 339 <i>Supplies</i> 253	SE: 158 #9, 238 ex 3, 477 #26, 500, 545 ex 3 <i>WebQuest</i> 3, 253, 465

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> design solutions to real-world problems of general social interest related to home, school, or community using scientific experimentation to inform the solution and applying mathematical concepts and reasoning to assist in developing a solution. 	SE: <i>WebQuest</i> 164 TWE: WQ 97	SE: <i>Interdisciplinary Project</i> 103, 193	SE: <i>WebQuest</i> 465
<ul style="list-style-type: none"> describe and explain phenomena by designing and conducting investigations involving systematic observations, accurate measurements, and the identification and control of variables; by inquiring into relevant mathematical ideas; and by using mathematical and technological tools and procedures to assist in the investigation. 	SE: <i>WebQuest</i> 284, 369 TWE: WQ 173, 291	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: <i>Graphing Calculator Investigation</i> 404, 532, 564 <i>Hands-On Lab</i> 183, 392-393, 516 <i>Spreadsheet Investigation</i> 356
Strategies			
2. Solving interdisciplinary problems involves a variety of skills and strategies, including effective work habits; gathering and processing information; generating and analyzing ideas; realizing ideas; making connections among the common themes of mathematics, science, and technology; and presenting results. Students participate in an extended, culminating mathematics, science, and technology project. The project would require students to:			
<ul style="list-style-type: none"> work effectively 	SE: <i>Study Skill</i> 38, 120, 176, 239 TWE: A 323 DI 199 TNT 122	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: <i>WebQuest</i> 3, 153, 253, 371, 465

LEARNING STANDARDS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> gather and process information 	SE: 58 #10 TWE: A 164 DI 63 PS 93, 129, 213, 287, 421, 501, 541	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: <i>WebQuest</i> 3, 153, 253, 371, 465
<ul style="list-style-type: none"> generate and analyze ideas 	SE: 59 #14, 66-69, 86-89 See Assess sections, for example: TWE: A 258, 315, 365, 441, 473, 525, 573	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: <i>WebQuest</i> 3, 153, 253, 371, 465
<ul style="list-style-type: none"> observe common themes 	TWE: DI 273 PS 45, 251	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: <i>WebQuest</i> 3, 153, 253, 371, 465
<ul style="list-style-type: none"> realize ideas 	See Assess and Daily Intervention sections, for example: TWE: A 65, 110, 258, 393 DI 136, 178, 229, 305, 356, 413	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: <i>WebQuest</i> 3, 153, 253, 371, 465
<ul style="list-style-type: none"> present results 	TWE: A 164 PS 93, 129, 169, 251, 287, 373, 457, 501, 541	SE: <i>Interdisciplinary Project</i> 3, 103, 193, 285, 409	SE: <i>WebQuest</i> 3, 153, 253, 371, 465

Mathematics Core Curriculum – Intermediate Grades 5-8

KEY IDEAS	<i>MATHEMATICS: APPLICATIONS AND CONCEPTS</i> COURSE 1	<i>MATHEMATICS: APPLICATIONS AND CONCEPTS</i> COURSE 2	<i>MATHEMATICS: APPLICATIONS AND CONCEPTS</i> COURSE 3
Grades: 5-6			
1. Mathematical Reasoning Students use mathematical reasoning to analyze mathematical situations, make conjectures, gather evidence, and construct an argument.			
1A. Apply a variety of reasoning strategies.			
<ul style="list-style-type: none"> Apply basic computational skills to problems from other subject areas and real-world situations. 	SE: 6-9, 122 ex 4, 138 #43-#45, 146 #26, 243 #37 TWE: B 6	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Solve problems that illustrate the use of fractions and decimals. 	SE: 110 #26, 124 #35, 139 #46, 247 #27-#28, 253 #11-#12, 254, 275 #43 TWE: ICE 117 PS 129, 213	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Write and solve open sentences while working with word problems. 	SE: 204 #29, 341 #2, 350-353, 355-357 <i>Problem-Solving Strategy</i> 358-359 TWE: A 473 DI 294	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Use a variety of problem-solving strategies. 	SE: 6-9 <i>Problem-Solving Strategy</i> 32-33, 54-55, 125-126, 156-157, 192-193, 280-281, 413-414, 568-569 TWE: DI 125 PS 93	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> State problems in own words. 	SE: 89 #12 <i>Problem-Solving Strategy</i> 32-33, 156-157, 192-193, 280-281, 413-414 TWE: A 89 DI 401 PS 93	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Construct physical representations for complex problems. 	SE: <i>Hands-On Lab</i> 394, 537 <i>Graphing Calculator Investigation</i> 84-85 <i>Problem-Solving Strategy</i> 54-55, 192-193, 520-521, 568-569	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
1B. Make and evaluate conjectures and arguments, using appropriate language.			
<ul style="list-style-type: none"> Use computation skills in investigation studies in other subject areas and games. 	SE: 132, 146 #2, 205 #32-#33, 247 #27-#28, 307 #32-#33 <i>WebQuest</i> 3, 173, 291 <i>The Game Zone</i> 269 TWE: DI 183 PS 421, 457	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Participate in extended record-keeping projects involving data gathering. 	SE: 48, 330 <i>WebQuest</i> 3, 89, 173, 377 TWE: MIC 3, 97, 377 PS 93	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Make attempts to verify solutions or results in situations in which it is warranted. 	SE: 31 #52, 67 #2, 124 #36- #39, 352 #42, 503 #21 <i>Problem-Solving Strategy</i> 32-33, 314-315 TWE: B 304 DI 32, 51, 87, 334	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Clarify problems with peers. 	SE: <i>Hands-On Lab</i> 464 <i>Problem-Solving Strategy</i> 32-33, 156-157, 314-315 TWE: A 75, 365 B 304 DI 7, 223, 433	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
1C. Make conclusions based on inductive reasoning.			
<ul style="list-style-type: none"> Develop formulas for area and perimeter of rectangles and squares. 	SE: 39-41, 158-160, 171 #16, 351 ex 3, 449 #8-#9, 489 #9, 548 #14, 582 #3 TWE: DI 40, 158	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
1D. Justify conclusions involving simple and compound (i.e., and/or) statements.			
<ul style="list-style-type: none"> Use Venn diagrams to demonstrate simple and compound statements (and/or). May include set ideas and terms such as <i>element</i>, <i>subset</i>, <i>intersection</i>, and <i>union</i>. 	SE: 177, 414 #8, 521 #13 <i>Study Skill</i> 176 TWE: A 176 PC 504F	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
2. Number and Numeration Students use number sense and numeration to develop an understanding of the multiple uses of numbers in the real world, the use of numbers to communicate mathematically, and the use of numbers in the development of mathematical ideas.			
2A. Understand, represent, and use numbers in a variety of equivalent forms (integer, fraction, decimal, percent, exponential, and expanded notation).			
<ul style="list-style-type: none"> Read and write numerals to one billion. 	SE: 48, 66 <i>WebQuest</i> 3 <i>Prerequisite Skills</i> 586	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Express large numbers, using powers of 10. 	SE: 18-21, 31 #57, 136 ex 5, 171 #13 TWE: A 138	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Reinforce place value concepts by using exponential notation. 	SE: 14-17, 22 #12-#13, 43 #28-#31, 136 ex 5, 171 #10	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Place value concepts to thousandths. 	SE: 102-103, 129 #6, 130 #4, 132 <i>Prerequisite Skills</i> 586 TWE: ICE 103	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Proper and improper fractions. 	SE: 186-189, 201 #31	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Simplest form of a fraction. 	SE: 182-185, 190 #9-#11, 211 #12-#18 <i>Hands-On Lab</i> 181 TWE: A 185	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Change improper fractions to mixed numbers and vice versa. 	SE: 186-189, 190, 211 TWE: A 189 DI 187	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Convert common fractions to decimal form. 	SE: 206-209, 212, 215 #17 TWE: A 209 B 206 ICE 207 PS 213	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Convert common fractions and decimals to percent. 	SE: 400-403, 404-406, 420 TWE: DI 404 PS 213	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Understand the basic role of place value in decimal fractions. 	SE: 202-205 TWE: ICE 203 PC 174F	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Use the number line to model a variety of numbers. 	SE: 108, 111, 257, 265, 294-296 <i>Hands-On Lab</i> 354 TWE: ICE 295	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Use exponential notation to reinforce place value concepts. 	SE: 18-21, 22 #12-#13, 43 #28-#31, 45 #6-#8	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Use the exponential form of powers of 2, 3, 5, and 10 and relate these forms to factoring. 	SE: 10-13, 14-17, 21, 22 #4-#6, 43 #10-#19 TWE: A 13	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
2B. Understand and apply ratios, proportions, and percents through a wide variety of hands-on explorations.			
<ul style="list-style-type: none"> Circle graphs to explore the concept of percent. 	SE: 62-65, 91 #11, 400, 404 <i>Hands-On Lab</i> 560-561 TWE: A 65 DI 63 ICE 63	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Relate fractional notation to ratio and probability. 	SE: 380-383, 418 #10-#13, 428-431, 444-447 TWE: DI 381 ICE 429	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Integrate the study of fractions and ratio with the study of shape and area. 	SE: 391-393, 419 #23-#26 <i>Hands-On Lab</i> 394	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Identify representations of a given percent and describe orally and in writing the equivalence relationship between fractions, decimals, and percents. 	SE: 395-399, 400-403, 404-406 TWE: DI 395, 401, 404 ICE 405	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Describe and compare two sets of data, using ratios, and use appropriate notation such as a/b; a to b; a:b. 	SE: 380-383, 386-389 TWE: ICE 381	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
2C. Develop an understanding of number theory (primes, factors, and multiples).			
<ul style="list-style-type: none"> Factoring techniques to determine common denominators. 	SE: 182-185, 194-197, 235-238 <i>Hands-On Lab</i> 234 TWE: A 238 DI 195 ICE 183	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Explain orally and in writing the concepts of prime and composite numbers. 	SE: 14-17, 21 #50-#53, 22 #7-#9, 178, 179 #2 TWE: B 14 ICE 15 DI 178 NS 196	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
2D. Recognize order relations for decimals, integers, and rational numbers.			
<ul style="list-style-type: none"> Explore negative number notation to fractions on the number line. 	SE: 186, 220, 294-296 <i>Problem-Solving Strategy</i> 226-227 Note: There are fractions (positive ones) on the number line – but no negative notations.	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Compare decimals and common fractions, using the terms <i>greater than</i>, <i>less than</i>, <i>between</i> or <i>equivalent</i>. 	SE: 108-111, 113 #30-#32, 198-201, 212 #35-#41 TWE: A 201 DI 199 ICE 199	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Understand that zero can mean none of something or that it can represent a point on a scale and any other number can be depicted on the scale. 	SE: 155 #41, 266 #3, 294-296, 429 TWE: DI 136	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Compare size of fractions, using several methods. 	SE: 186, 198-201 TWE: A 189	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
3. Operations Students use mathematical operations and relationships among them to understand mathematics.			
3A. Add, subtract, multiply, and divide fractions, decimals, and integers.			
<ul style="list-style-type: none"> Multiply and divide by three-digit numbers. 	SE: 4, 48, 135-138, 331 <i>WebQuest</i> 3 TWE: B 135 MIC 3	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Experience adding and subtracting integers on the number line. 	SE: 300-303, 304-307, 325, 327 TWE: DI 301, 305	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Add and subtract mixed numbers. 	SE: 240-243, 244-247, 250 TWE: ICE 241, 245	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Add and subtract decimals to thousandths. 	SE: 121-124, 128 #28-#32 TWE: ICE 122	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Multiply and divide common fractions. 	SE: 261-264, 272-275, 285 <i>Hands-On Lab</i> 259-260, 270-271 <i>The Game Zone</i> 269	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Multiply and divide mixed numbers. 	SE: 265-267, 276-279, 286 TWE: A 279 B 279 DI 266 ICE 277	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Multiply decimals to hundredths, and divide decimals to hundredths, using whole number divisors. 	SE: 135-138, 141-143, 144-147, 167, 169 <i>Hands-On Lab</i> 150-151 TWE: A 147 ICE 145	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Solve problems in which fractions are used in everyday life. 	SE: 216, 220 ex 3, 224 ex 5, 236 ex 3, 254, 256, 289 #13, #15, 272 TWE: DI 220, 245, 263 PS 213	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
3B. Use grouping symbols (parentheses) to clarify the intended order of operations.			
<ul style="list-style-type: none"> Use the conventional rule for order of operations (1-parentheses, 2-exponents, 3-multiplication and division, 4-addition and subtraction). 	SE: 24-27, 31 #55-#56, 37 #49, 44 #32-#37, 46 #8, 252 #2 TWE: A 27 B 24	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
3C. Apply the associative, commutative, distributive, inverse, and identity properties.			
<ul style="list-style-type: none"> Use distributive property to multiply mixed numbers. 	SE: 265-267, 333-336	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> The role of the multiplicative inverse (reciprocal) in division of fractions. 	SE: 272-275, 276-279	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

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<ul style="list-style-type: none"> The role of additive inverse in the set of integers. 	The teacher can use the opposite of an integer to lead into a discussion of additive inverse. SE: 296	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
3D. Demonstrate an understanding of operational algorithms (procedures for adding, subtracting, etc.).			
<ul style="list-style-type: none"> Divide fractions, using a variety of approaches: factor product, partitioning, measurement, common denominator, and multiply by the reciprocal. 	SE: 272-275 <i>Hands-On Lab 270-271</i> TWE: A 279 DI 273 ICE 273	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> When asked, accurately state the purpose for each step in basic calculations. 	SE: 29 ex 1-4, 345 ex 2, 355-356 <i>Hands-On Lab 139-140, 150-151</i>	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
3E. Develop appropriate proficiency with facts and algorithms.			
<ul style="list-style-type: none"> Ensure quick recall of basic addition, subtraction, multiplication, and division facts. 	SE: <i>Prerequisite Skills</i> 589-591	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Develop strategies for mental math. 	SE: 136 ex 5, 336 #19-#24 <i>Study Tip 8 #7, #8, 236, 262, 272, 404, 405</i>	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
3F. Apply concepts of ratio and proportion to solve problems.			
<ul style="list-style-type: none"> Use ratio and proportion concepts to solve problems. 	SE: 380-383, 386-389, 391-393 <i>Spreadsheet Investigation 390</i> <i>Hands-On Lab 394</i>	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
4. Modeling/Multiple Representation Students use mathematical modeling/multiple representations to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships.			
4A. Visualize, represent, and transform two- and three-dimensional shapes.			
<ul style="list-style-type: none"> Analyze the effects of combining, subdividing, and changing basic shapes. 	SE: 534-536 <i>Hands-On Lab 532-533, 537</i>	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Use geometric ideas to solve problems. 	SE: 40 ex 2, 158-160, 161-164, 171 #16, 225 #21, 352 #42 <i>Hands-On Lab</i> 464, 469	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Understand the basic characteristics of the concept of three dimensions. 	SE: 564-566 TWE: DI 564	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Sketch, construct models, and classify prisms, cones, cylinders, and pyramids. 	SE: 564-566, 572 #3, 581 #8-#10 <i>Hands-On Lab</i> 567, 574 TWE: A 565 DI 571 PS 581	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
4B. Use maps and scale drawings to represent real objects or places.			
<ul style="list-style-type: none"> Make scale drawings like floor plans, using centimeter grids to relate scale to ratio. 	SE: 391-393, 423 #21 <i>Hands-On Lab</i> 394 <i>WebQuest</i> 377 TWE: DI 391 PS 421	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
4C. Use coordinate plane to explore geometric ideas.			
<ul style="list-style-type: none"> Explore measurement and vocabulary of geometric figures, using a concrete discovery approach with geoboards and graph paper. 	SE: 329 #17, 546-549, 551-554 <i>Hands-On Lab</i> 531, 533, 550, 555 TWE: B 551 DI 321 PS 327	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Graphing ordered pairs of numbers. 	SE: 320-323, 326, 327 #25, 329 #20, 342 #44-#46, 366-369 TWE: A 323	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
4D. Represent numerical relationships in one- and two-dimensional graphs.			
<ul style="list-style-type: none"> Graphs: circle, bar, histogram, line, pictograph, and stem and leaf. 	SE: 57 ex 2, 62-65, 72-75, 94, 182, 222 <i>Problem-Solving Strategy</i> 54-55 TWE: ICE 55, 58	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

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<ul style="list-style-type: none"> Compare histogram, line, picture, circle graphs, and stem and leaf as to what information each presents and note the advantages and disadvantages of each. 	SE: 56-59, 66 ex 1, 67 #2, 73 #1, 222 <i>MiniLab</i> 62 TWE: B 72 DI 57, 63, 68	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
4E. Use variables to represent relationships.			
<ul style="list-style-type: none"> Write and solve open sentences dealing with inverse operations, using letters as well as frames as placeholders. 	SE: 339-342, 344-347, 355-357 <i>Hands-On Lab</i> 343 <i>Problem-Solving Strategy</i> 358-359 TWE: B 339 DI 345	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Create a problem situation based on a given open sentence, using a single variable. 	SE: 341 #2, 346 #34, 351 ex 3	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Have an understanding of the basic characteristics of a variable. 	SE: 28-31, 34-37 TWE: TNT 29	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
4F. Use concrete materials and diagrams to describe the operation of real-world processes and systems.			
<ul style="list-style-type: none"> Discover the multiplication principle through experiences with tree diagrams or lists of possible events taken in order. 	SE: 433-436, 442 #7, 450 (MiniLab), 455 TWE: A 436 DI 433	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
4G. Develop and explore models that do and do not rely on change.			
<ul style="list-style-type: none"> Represent and count the elements in a sample space. 	SE: 433, 435-436 <i>Hands-On Lab</i> 426-427	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Identify events with a probability equal to zero, events that are certain, and events that happen sometimes. 	SE: 424, 428-431, 450-453, 457 #8-#9 <i>Hands-On Lab</i> 426-427, 432 <i>Problem-Solving Strategy</i> 449 #4	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
4H. Investigate both two- and three-dimensional transformations.			
<ul style="list-style-type: none"> Use concrete and artistic activities to explore the concept of symmetry. 	SE: 528-531, 540, 543 #19, 549 #30-#32 Hands-On Lab 532-533, 537	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Understand that symmetry can be analyzed by performing reflections, turns, or slides. 	SE: 529, 536 #25-#27, 543 #19 Hands-On Lab 532-533, 537 TWE: TNT 528	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
4I. Use appropriate tools to represent and verify geometric relationships.			
<ul style="list-style-type: none"> Draw and measure plane geometric figures, using rulers, compasses, and protractors. 	SE: Hands-On Lab 526-527, 540 MiniLab 546 TWE: A 509 DI 510 TNT 507	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Using a protractor and a ruler, draw a perpendicular bisector of a line segment and an angle bisector. 	SE: 515-517, 518 #9-#12 TWE: DI 515	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
5. Measurement Students use measurement in both metric and English measure to provide a major link between the abstractions of mathematics and the real world in order to describe and compare objects and data.			
5A. Estimate, make, and use measurements in real-world situations.			
<ul style="list-style-type: none"> Measure temperatures of familiar substances. 	SE: 303 #37, #41, 307 #31, 325 #47, 497 TWE: B 310	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Relate volume to capacity in terms of metric and English system measure (cubic, centimeters, kilograms, liters, cubic inch, cup, fluid ounce). 	SE: 484-487, 490-493, 570-574 TWE: A 573 B 570 TNT 510	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Determine whether measurements of length, area, volume, weight, or time are reasonable by referring to typical values. 	SE: 39-41, 158-160, 465-468, 470-473, 476-479, 490-493, 494-496 <i>Hands-On Lab</i> 464, 474-475	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
5B. Select appropriate standard and nonstandard measurement units and tools to measure to a desired degree of accuracy.			
<ul style="list-style-type: none"> Be familiar with prefixes <i>milli</i>, <i>centi</i>, <i>kilo</i> and symbols <i>g</i>, <i>mg</i>, <i>kg</i>, <i>ml</i>, <i>L</i>, <i>mm</i>, <i>km</i>, and <i>cm</i> and the tools to measure them. 	SE: 476-479, 484-487, 490-493 TWE: DI 485	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Introduce measurement of angles with a protractor. 	SE: 506-509	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Measure volume and capacity, using cubic centimeter blocks, cubic inch blocks, English system and metric measuring tools. 	SE: 476-479, 484-487, 490-493, 570-573	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Operations with metric units. 	SE: 490-493, 497 #36-#38, 500 #42-#52 TWE: A 492	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Make effective use of ruler, thermometer, and scale for making measurements. 	SE: 391-394, 465-468, 476-479 <i>Hands-On Lab</i> 474-475 TWE: B 465 ICE 466, 477	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Estimate and then determine length, weight/mass, area, and liquid volume/capacity, using standard and nonstandard units of measure. 	SE: 39-41, 158-160, 465-468, 476-479, 484-487, 490-493, 554 #18-#19 <i>WebQuest</i> 291, 461, 578 TWE: DI 485	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Understand that measurements are likely to give slightly different numbers when measured multiple times. 	SE: 465-468, 476-479, 484-487, 498, 499 <i>Hands-On Lab</i> 464, 474-475, 480-481	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
5C. Develop measurement skills and informally derive and apply formulas in direct measurement activities.			
<ul style="list-style-type: none"> Measure volume of prisms, using cubic units in metric and English system. 	SE: 570-573 TWE: ICE 571	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Measure the area and perimeter of triangles, circles, and irregular polygons, using manipulative materials and informal methods. 	SE: 161-164, 168 #48-#53, 536 #20, 541 #16, 551-554, 556-559 <i>Hands-On Lab</i> 550 TWE: DI 557	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Identify acute, obtuse, and right angles. 	SE: 506-509, 543 #13 <i>Hands-On Lab</i> 526-527	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Explore the volume of cylinders empirically. 	SE: 573 #25-#27	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Approximate the area of rectangles and triangles. 	SE: 39-41, 551-554	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
5D. Use statistical methods and measures of central tendencies to display, describe, and compare data.			
<ul style="list-style-type: none"> Consider difference between mode, median, and mean. 	SE: 76-78, 80-83, 92, 95 #13 <i>Spreadsheet Investigation</i> 79 TWE: A 78, 83 DI 145 ICE 77	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Collect and organize simple data sets to answer questions. 	SE: <i>Practice/Application</i> 52, 74 #18-#20, 82 #2 <i>Graphing Calculator Investigation</i> 84-85 <i>WebQuest</i> 3, 173	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Understand that a summary of data should include where the middle is and how much spread is around it. 	SE: 80-83, 126 #14 TWE: A 83	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
5E. Explore and produce graphic representations of data (Calculators/computers may be used.)			
<ul style="list-style-type: none"> Compare graphs that can be demonstrated by the teacher on a graphing calculator: bar, histogram, line. 	SE: 56-59, 67-69, 86-89, 222 <i>Problem-Solving Strategy</i> 54-55 <i>Spreadsheet Investigation</i> 60-61 <i>WebQuest</i> 3 TWE: B 54, 72 DI 54, 57	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Use pictographs and other graphic representations to model problems. 	SE: 57 ex 2 <i>Problem-Solving Strategy</i> 54-55 <i>Spreadsheet Investigation</i> 60-61 <i>Study Skill</i> 176 TWE: PS 93	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Understand that spreading data out on a number line helps to see what the extremes are, where they pile up, and where the gaps are located. 	SE: <i>WebQuest</i> 3, 89 <i>Graphing Calculator Investigation</i> 84-85 TWE: A 85	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
5F. Develop critical judgment for the reasonableness of measurement.			
<ul style="list-style-type: none"> Relate metric units to customary units via approximations. 	SE: 279 #42-#43, 497 #30-#33 TWE: DI 162	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Make real-world comparisons of measurements. 	SE: 31 #49-#51, 69 #23-#24, 216, 479 #29 <i>Hands-On Lab</i> 464, 475 #3 <i>WebQuest</i> 3 TWE: DI 220, 294	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
6. Uncertainty Students use ideas of uncertainty to illustrate that mathematics involves more than exactness when dealing with everyday situations.			
6A. Use estimates to check the reasonableness of results obtained by computation, algorithms, or the use of technology.			
<ul style="list-style-type: none"> Round numbers to the nearest hundredth and up to 10,000. 	SE: 111-113 <i>WebQuest 97</i> TWE: DI 112 PS 129	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Relate rounding skills to estimation. 	SE: 116-119, 219-222, 223-225, 256-258, 268, 415-417 <i>Hands-On Lab 218</i> <i>Problem-Solving Strategy 125-126</i>	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Round fractional and decimal numbers for estimates in computation. 	SE: 116-119, 219-222, 222-225, 248 #7-#13, 256-258, 285	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Determine the effects of addition, subtraction, multiplication, and division, on size and order of numbers. 	SE: 116-119, 222-225, 256-258, 268, 285 #9-#15 TWE: ICE 117, 224, 257	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
6B. Use estimation to solve problems for which exact answers are inappropriate.			
<ul style="list-style-type: none"> Develop an awareness of when an estimation is more appropriate than an exact answer. 	SE: 116-119, 223-225, 253 #17, 256-258, 415-417 TWE: ICE 117	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
6C. Estimate the probability of events.			
<ul style="list-style-type: none"> Make predictions based on simple data. 	SE: 438-441, 455 #22-#24 TWE: DI 438 ICE 439	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Arrangements and combinations. 	SE: 433-436, 455 #16-#18, 459 #18 <i>MiniLab 450</i>	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Understand that when predictions are based on what is known about the past, one must assume that the conditions stay the same from the past event to the predicted future event. 	SE: 438-441, 455 #22-#24 TWE: A 441 B 438	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
6D. Use simulation techniques to estimate probabilities.			
<ul style="list-style-type: none"> Conduct simulations for experiments that cannot be determined theoretically and are unwieldy to determine experimentally. 	SE: <i>Hands-On Lab</i> 426-427, 432 TWE: PS 457	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
6E. Determine probabilities of independent events.			
<ul style="list-style-type: none"> Conduct and predict outcomes of experiments with independent events. 	SE: 450-453, 456 #30-#35, 459 #17 TWE: DI 451 ICE 451	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Understand how to express probabilities as fractions, decimals, or percents for theoretical and experimental situations that: <ul style="list-style-type: none"> Experimental probability is found by <i>number of times desired event occurs</i> ÷ <i>total number of trials</i> Theoretical probability is found by <i>number of desired outcomes</i> ÷ <i>total number of possible outcomes</i> 	SE: 428-431, 441 #20-#22, 442 #3-#6, 454 #8-#15 <i>Hands-On Lab</i> 426-427, 432 TWE: PS 457	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<p>7. Patterns/Functions Students use patterns and functions to develop mathematical power, appreciate the true beauty of mathematics, and construct generalizations that describe patterns simply and efficiently.</p>			
<p>7A. Recognize, describe, and generalize a wide variety of patterns and functions.</p>			
<ul style="list-style-type: none"> Review computation skills by describing and extending number patterns and sequences. 	SE: 6-9, 21 #42-#46, 194, 196 #23-#24, 282-284, 286, 291 <i>Problem-Solving Strategy</i> 280-281 TWE: B 282 DI 282 ICE 283	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Interpolate and/or extrapolate simple patterns of numbers. 	SE: 6-9, 194-196, 282-284, 291 <i>Problem-Solving Strategy</i> 280-281	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Recognize and describe simple functional relationships. 	SE: 362-365, 366-369 <i>Hands-On Lab</i> 360-361	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<p>7B. Describe and represent patterns and functional relationships, using tables, charts and graphs, and verbal descriptions.</p>			
<ul style="list-style-type: none"> Use tables and graphs to help to identify patterns. 	SE: 6-9, 362-365, 366-369, 372, 373, 375 #12 <i>Hands-On Lab</i> 360-361 <i>Problem-Solving Strategy</i> 32-33	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Use a variety of representations for the same functional relationship. 	SE: 362-365, 366-369 <i>Hands-On Lab</i> 360-361 TWE: A 369 B 366	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<p>7C. Develop methods to solve basic linear equations.</p>			
<ul style="list-style-type: none"> Find the missing value in a proportion in which three of the numbers are known. 	SE: 386-389, 391-393 <i>Spreadsheet Investigation</i> 390	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Distinguish between linear and quadratic relationships. 	SE: 366-369 This text includes linear and nonlinear without references to quadratic relationships. See <i>Mathematics: Applications and Concepts Course 3</i> page 565.	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Solve one-step linear equations in one variable. 	SE: 34-37, 44 #48-#54, 46 #11, 339-342, 344-347, 350-353 <i>Hands-On Lab</i> 337-338, 343 TWE: A 37 DI 345 ICE 351	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
7D. Develop an understanding of functions and functional relationships: that a change in one quantity (variable) results in change in another.			
<ul style="list-style-type: none"> Continue the study of functions and relationships with whole numbers. 	SE: 362-365 <i>Hands-On Lab</i> 360-361 TWE: A 365 DI 366	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Understand that the basic function of tables and graphs is to make explicit how the values of one quantity are related to the values of another. 	SE: 362-365 <i>Hands-On Lab</i> 360-361 TWE: A 365 DI 366	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Begin to recognize the characteristics of proportional relationships. 	SE: 386-389, 391-392, 419 #23-#26, 423 #21 <i>Spreadsheet Investigation</i> 390 <i>Hands-On Lab</i> 394	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
7E. Apply the concept of similarity in relevant situations.			
<ul style="list-style-type: none"> Use concrete and artistic experiences to explain similarity and congruence in plane geometric figures. 	SE: 534-536 <i>Hands-On Lab</i> 537 TWE: DI 534 PS 541	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
7F. Use properties of polygons to classify them.			
<ul style="list-style-type: none"> Classify polygons by properties and develop definitions. 	SE: 522-525	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Understand the basic properties of and the similarity and differences between a trapezoid, rhombus, and quadrilateral. 	SE: 504, 522-525, 534-536 TWE: ICE 523 PC 504F	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Compare shapes in terms of <i>parallel</i>, <i>perpendicular</i>, <i>similar</i>, and <i>congruent</i>. 	SE: 504, 522-525, 534-536 TWE: DI 534	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
7G. Explore relationships involving points, lines, angles, and planes.			
<ul style="list-style-type: none"> Understand the basic characteristics of angles. 	SE: 506-509, 510-512, 538, 541 TWE: B 506 PS 541	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Identify line segments. 	SE: <i>Hands-On Lab</i> 513-514	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> Determine congruence of line segments, angles, and polygons by direct comparison given their attributes. 	SE: 534-536 <i>Hands-On Lab</i> 513-514	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
7H. Develop readiness for basic concepts of right triangle trigonometry.			
<ul style="list-style-type: none"> A right triangle contains one right angle. 	SE: <i>Hands-On Lab</i> 526-527	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> The hypotenuse of a right triangle is opposite the right angle. 	See www.math.Glencoe.com .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
<ul style="list-style-type: none"> The hypotenuse of a triangle is greater than either of the other two legs. 	See www.math.Glencoe.com .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Investigate intuitively the concept of similarity among triangles. 	SE: 534-536, 540, 541 #14-#15 TWE: DI 534	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .
7I. Use patterns and functions to represent and solve problems.			
<ul style="list-style-type: none"> Use math sentences of patterns and functions to represent and solve problems. 	SE: 362-365 <i>Problem-Solving Strategy</i> 280-281 TWE: A 365	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .	This objective is for Grades 5 and 6. See <i>Mathematics: Applications and Concepts Course 1</i> .

Mathematics Core Curriculum – Intermediate Grades 5-8

KEY IDEAS	<i>MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1</i>	<i>MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2</i>	<i>MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3</i>
Grades: 7- 8			
3. Mathematical Reasoning Students use mathematical reasoning to analyze mathematical situations, make conjectures, gather evidence, and construct an argument.			
1A. Apply a variety of reasoning strategies.			
<ul style="list-style-type: none"> Apply a variety of reasoning strategies. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 201-202, 252-253, 302-303, 338-339, 391-392, 518-519	SE: 6-10, 276-277 TWE: A 277 B 276 DI 276
<ul style="list-style-type: none"> Use pictures, diagrams, or patterns. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 58-59, 132-133, 302-303	SE: 6-10, 96-97, 123-124, 176-177, 418-419, 537-538, 588-589 TWE: A 97
<ul style="list-style-type: none"> Use trial and error (guess). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 22-23	SE: 6-10, 488-489 TWE: A 489 B 488 DI 489
<ul style="list-style-type: none"> Use a simpler but related problem. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 496-497	SE: 6-10, 324-325 TWE: A 325 B 324 DI 325
<ul style="list-style-type: none"> Use proportional reasoning, ratios, and rates to solve problems. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 288-291, 292-295, 297-300 <i>Hands-on Lab</i> 296, 301 <i>The Game Zone</i> 311	SE: 121 ex 2, 156-159, 160-164, 170-173, 184-187, 188-191, 216-219, 232-235
<ul style="list-style-type: none"> Work backwards. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 164-165	SE: 6-10, 43-44 TWE: A 44 B 43 DI 43
<ul style="list-style-type: none"> Identify similarities and differences among a wide variety of problem types and problem-solving strategies. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 22-23, 164-165, 201-202, 444-445, 496-497	SE: 6-10, 96-97, 123-124, 176-177, 418-419 TWE; DI 7

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Use mathematical sentences to solve problems. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 150-152, 156-159, 160-163, 166-169, 172-175	SE: 478-481, 487 #39-#40, 490 #17, 495 #51, 499 #58, 507 #12 TWE: A 481 DI 479
1B. Make and evaluate conjectures and arguments, using appropriate language.			
<ul style="list-style-type: none"> Discriminate relevant from irrelevant information. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 6-9	SE: 6-10
<ul style="list-style-type: none"> Discuss the effects of changing the parameters of a problem statement. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 201-202, 444-445, 496-497	SE: 180 ex 3, 318 #27-#28, 339 #33-#36, 345 #24 <i>Hands-On Mini Lab</i> 335
<ul style="list-style-type: none"> Seek a general solution. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 60-63, 80-83 <i>Hands-on Lab</i> 73 <i>Problem-Solving Strategy</i> 444-445	SE: 544-547
<ul style="list-style-type: none"> Study cases in which the general solution does not apply. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 64-68, 69-72, 80-83 <i>Hands-on Lab</i> 73 <i>Graphing Calculator Investigation</i> 84	SE: 544 ex 2, 545 ex 3
<ul style="list-style-type: none"> Explain and show solution processes in a variety of ways (words, numbers, symbols, pictures, charts, graphs, tables, diagrams, and models). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 58-59, 201-202, 302-303, 518-519	SE: 6-10, 96-97, 123-124, 176-177, 418-419, 537-538, 588-589 TWE: A 97
<ul style="list-style-type: none"> Express solutions clearly and logically, using appropriate mathematical notation, terms, and language. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 6-9 <i>Problem-Solving Strategy</i> 22-23, 201-202, 518-519	SE: 6-10, 96-97, 123-124, 176-177, 418-419, 537-538, 588-589 TWE: A 97

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Understand that there is no one right way to solve mathematical problems, but that different methods have different advantages and disadvantages. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 22-23, 164-165, 201-202, 444-445, 496-497	SE: 6-10, 96-97, 123-124, 176-177, 418-419, 537-538, 588-589 TWE: A 97
<ul style="list-style-type: none"> Support solutions with written and/or algebraic evidence. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 22-23, 58-59, 164-165, 302-303, 338-339	SE: 46-47, 50-51, 52 #1, 475-476, 484-486 TWE: A 53, 477
<ul style="list-style-type: none"> Clarify problems, using discussion with peers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Hands-on Lab</i> 73, 397 TWE: A 209, 380	TWE: A 49 DI 72, 83, 89, 99, 126, 138, 176
1C. Make conclusions based on inductive reasoning.			
<ul style="list-style-type: none"> Devise formulas (surface area, volume, etc.). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 520-522, 524-527, 532-535, 538-541 <i>Hands-on Lab</i> 530-531, 536-537	SE: 315, 334 #19, 337 #1 <i>Hands-On Mini Lab</i> 132, 314, 319, 335, 342
<ul style="list-style-type: none"> Identify patterns in a number sequence (includes sequences with integral terms). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 34-36 <i>Hands-on Lab</i> 37 <i>Problem-Solving Strategy</i> 132-133	SE: 512-515, 520 #29-#31, 530 #4-#6, 552 #9-#12, 555 #3-#5 <i>Hands-On Lab</i> 516
<ul style="list-style-type: none"> Apply strategies and results from simpler problems to more complex situations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 496-497	SE: 324-325, 334 #19, 339 #33-#36, 345 #24 TWE: DI 325
1D. Justify conclusions involving simple and compound (i.e., and/or) statements.			
<ul style="list-style-type: none"> Find numbers that satisfy one or more conditions. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 24-27, 156-159, 160-163, 166-169, 177-181	SE: 130 #33, 147 #25-#30, 149 #9-#11 TWE: A 129

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
2. Number and Numeration Students use number sense and numeration to develop an understanding of the multiple uses of numbers in the real world, the use of numbers to communicate mathematically, and the use of numbers in the development of mathematical ideas.			
2A. Understand, represent, and use numbers in a variety of equivalent forms (integer, fraction, decimal, percent, exponential, expanded, and scientific notation).			
<ul style="list-style-type: none"> Read and write integers, rational, and irrational numbers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 106-108, 207-209, 210-213	SE: 17-21, 62-66, 125-129 <i>Hands-On Lab 141</i> TWE: B 17
<ul style="list-style-type: none"> Describe orally and in writing the relationship between the subsets of the real number system. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	See <i>Mathematics: Applications and Concepts Course 3</i> .	SE: 125-129 TWE: B 62
<ul style="list-style-type: none"> Approximate integers and rational numbers, using scientific notation (positive and negative powers of 10) and explain the process. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 43-45	SE: 104-107, 110 #58-#65, 111 #23-#24, 112 #9 TWE: A 107 B 104 DI 105 NS 106
<ul style="list-style-type: none"> Understand the relationship between terminating and repeating decimals. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 210-213	SE: 62-66 TWE: A 66
<ul style="list-style-type: none"> Describe the equivalent relationships among representations of rational numbers (fractions, decimals, and percents) and use these representations in estimation, computation, and applications. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 210-213, 216-219, 220-223, 312-315, 319-321, 334-337	SE: 62-66, 210-214, 224 #7-#10 <i>Concept Summary 220</i> TWE: A 214 B 210 DI 211, 212
<ul style="list-style-type: none"> Understand and explain a number raised to the zero power. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Critical Thinking 13</i>	SE: <i>Key Concept 99</i> TWE: NS 100

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Using real-life situations, apply the concept of scientific notation to express and compare very large and very small numbers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 43-45	SE: 104-107, 112 #9, 119 #51, 122 #40, 649 #18-#20 TWE: A 107 DI 105
<ul style="list-style-type: none"> Understand the meaning of the absolute value symbol. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 106-108	SE: 17-21, 27 #47, 31 #51-#52, 55 #23-#24, 57 #10 TWE: A 21 DI 18 TNT 19
<ul style="list-style-type: none"> Calculate fraction, decimal, and percent equivalents. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 210-213, 216-219, 220-223, 312-315, 316-318	SE: 62-66, 210-214, 224 #7-#10 <i>Concept Summary 220</i> TWE: A 214 B 210 DI 211, 212
2B. Understand and apply ratios, proportions, and percents through a wide variety of hands-on explorations.			
<ul style="list-style-type: none"> Interpret percent as part of 100, using a variety of manipulatives (algebra tiles, graph paper, cubes). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 220-223, 312-315, 323-325 <i>Hands-on Lab 322</i>	SE: 206-209 <i>Hands-On Mini Lab 216</i> <i>Key Concept 216</i>
<ul style="list-style-type: none"> Develop an understanding of the relationships among ratio, proportion, and percent. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 288-291, 312-315, 323-325	SE: 156-159, 164 #22-#23, 170-173, 174 #12-#14, 199 #16-#20, 206-209, 216-219 TWE: A 173
<ul style="list-style-type: none"> Solve real-life problems dealing with scale drawings and similar polygons. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 304-308, 440-443	SE: 178-182, 184-187, 191 #21-#25 <i>Hands-On Lab 183</i> TWE: A 182 B 178 DI 179, 185

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Find the percent of a number; calculate the percent of increases and decreases, rate, commissions, taxes, and simple interest. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 319-321, 323-325, 340-343, 350-353, 354-357, 358-360 <i>Hands-on Lab 322</i> <i>Spreadsheet Investigation 361</i>	SE: 216-219, 232-235, 236-240, 241-244 TWE: A 219, 240 DI 217, 237
2C. Develop an understanding of number theory (primes, factors, and multiples).			
<ul style="list-style-type: none"> Define and identify prime and composite numbers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 197-200	SE: 609, 610
<ul style="list-style-type: none"> Define and identify prime factors, using factor trees and repeated division. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 197-200	SE: 609, 610
<ul style="list-style-type: none"> Factor numbers by using the rules of divisibility. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 197-200 <i>Hands-on Lab 196</i> <i>Prerequisite Skills 554</i>	SE: 608
<ul style="list-style-type: none"> Discover rules of divisibility of numbers in the context of finding prime numbers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 197-200 <i>Hands-on Lab 196</i> <i>Prerequisite Skills 554</i>	SE: 608, 609
2D. Recognize order relations for decimals, integers, and rational numbers.			
<ul style="list-style-type: none"> Compare and understand interrelationships, similarities, and differences among integers, rational and irrational numbers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 106-108, 207-209	SE: 17-21, 62-66
<ul style="list-style-type: none"> Use symbols (<, >, =, ≤, ≥) when recognizing numerical relationships. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 109-111, 227-231	SE: 17-21, 55 #20-#22, 57 #6-#8, 67-70, 86 #7-#10 TWE: B 67
<ul style="list-style-type: none"> Develop techniques for ordering fractions and decimals including percents and scientific notation. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 43-45, 109-111, 227-231, 315-318 <i>Prerequisite Skills 556</i>	SE: 67-70, 80 #48 TWE: A 70 B 67 DI 68 NS 69

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Given a whole number from 0 to 100, identify it as a perfect square or find the two consecutive whole numbers between which the square root lies. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 470-473, 475-477	SE: 116-119, 120-122, 130 #12-#17, 136 #42, 147 #16-#24, 149 #6-#8 TWE: A 122 B 116 DI 120
3. Operations Students use mathematical operations and relationships among them to understand mathematics.			
3A. Add, subtract, multiply, and divide fractions, decimals, and integers.			
<ul style="list-style-type: none"> Consistently and accurately perform operations on integers, decimals, and rational numbers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 120-124, 128-131, 134-137, 138-141, 240-243, 244-247, 248-251, 254-257, 264-266 <i>Hands-on Lab</i> 118-119, 126-127	SE: 23-27, 28-31, 34-38, 71-75, 76-80, 82-85, 88-91, 95 #41
<ul style="list-style-type: none"> Raise rational numbers to whole number powers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 10-13	SE: 98-101, 135 #22-#23, 137-140
<ul style="list-style-type: none"> Determine the absolute value of real numbers expanded to include numerical expressions beyond a single value (e.g., $-5 + 3$). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 106-108	SE: 20 #47-#48, 21 #57, 26 #42
<ul style="list-style-type: none"> Solve one- and two-step word problems. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 150-152, 156-159, 160-163, 166-169	SE: 48 #36-#41, 53 #40-#41, 56 #52, 57 #29, 93 ex 5, 95 #32, 486 #32, 487 #34
3B. Explore and use the operations dealing with roots and powers.			
<ul style="list-style-type: none"> Operations applying to powers of a common base. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Number Names</i> 45 <i>Prerequisite Skills</i> 561	SE: 584-587
<ul style="list-style-type: none"> The use of powers with positive integral and zero exponents. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 10-13 <i>Prerequisite Skills</i> 561	SE: 98-101, 107 #46, 110 #50-#57 TWE: NS 100
<ul style="list-style-type: none"> Concept of the square of any nonzero integer is a positive number. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 10-13, 470-473	SE: 98-101, 107 #46

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Understand that every positive number has two square roots (introduce the \pm symbol). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 475-477	SE: 116 <i>Reading Math 117</i>
3C. Use grouping symbols (parentheses) to clarify the intended order of operations.			
<ul style="list-style-type: none"> Use the order of operations within a problem. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 14-17	SE: 11-12, 14 #14-#27, 21 #64-#66, 32 #4, 55 #13-#16, 57 #3-#5 TWE: DI 12
<ul style="list-style-type: none"> Understand the use of parentheses and their relationship to the order of operations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 14-17	SE: 11-12, 14 #23-#26, 21 #64-#65, 32 #4, 55 #14, 57 #4 TWE: DI 12
<ul style="list-style-type: none"> Extend the order of operations to include roots. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 10-13, 14-17	SE: 11-12
3D. Apply the associative, commutative, distributive, inverse, and identity properties.			
<ul style="list-style-type: none"> Understand that integers consist of zero and natural numbers and their additive inverses. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 106-108	SE: 17
<ul style="list-style-type: none"> Simplify numerical expressions and solve word problems and equations by applying properties of real numbers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 30-33, 156-159, 160-163	SE: 11-15, 32 #1 TWE: A 15
<ul style="list-style-type: none"> Explain why certain properties hold true or do not hold true under specific operations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 30-33	SE: 11-15 TWE: A 15
<ul style="list-style-type: none"> Understand the inverse relationships between addition and subtraction, multiplication and division, and exponentiation and root extraction. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 156-159, 160-163, 470-473	SE: 45-49, 50-53, 117, 119 #28-#39 TWE: B 45, 50

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Investigate the existence of closure under the operations with integers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 120-124, 128-131, 134-137, 138-141	SE: 38 #62-#64
<ul style="list-style-type: none"> Formulate properties (commutative, associative, etc.) involving operations with integers by experimenting with integers under the basic operations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 120-124, 128-131, 134-137, 138-141	SE: 11-15 TWE: A 15
3E. Demonstrate an understanding of operational algorithms (procedures for adding, subtracting, etc.).			
<ul style="list-style-type: none"> Solve and explain the rules for the operational algorithms relative to real numbers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 120-124, 128-131, 134-137, 138-141, 244-247, 248-251, 254-257, 264-266	SE: 23-27, 28-31, 34-38, 71-75 TWE: A 27, 31, 38 B 23
<ul style="list-style-type: none"> Solve and explain the use of absolute value in operational algorithms. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 106-108	SE: 17-21 TWE: DI 18 TNT 19
3F. Develop appropriate proficiency with facts and algorithms.			
<ul style="list-style-type: none"> Solutions of facts and algorithms, using real numbers. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 120-124, 128-131, 134-137, 138-141, 240-243, 244-247, 248-251, 254-257, 264-266 <i>Prerequisite Skills</i> 558, 559, 560, 562	SE: 45-49, 50-53, 92-95 TWE: A 53, 95 DI 51
3G. Apply concepts of ratio and proportion to solve problems.			
<ul style="list-style-type: none"> Use ratios and proportions to solve problems involving a change of scale in drawings or maps, recipes, etc. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 288-291, 297-300, 304-308	SE: 156-159, 171 ex 3, 173 #36-#38, 174 #15, 184-187 TWE: A 159, 173 DI 157
<ul style="list-style-type: none"> Determine the unit cost of items to compare prices. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 292-295	SE: 158 #18-#19, 159 #33, 169 #24, 174 #6, 201 #4

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Determine if triangles are similar by using ratios to show that the lengths of corresponding sides are proportional. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 440-443	SE: 180 ex 3, 181 #8, 182 #20 <i>Hands-On Mini Lab 178</i>
4. Modeling/Multiple Representation Students use mathematical modeling/multiple representations to provide a means of presenting, interpreting, communicating, and connecting mathematical information and relationships.			
4A. Visualize, represent, and transform two- and three-dimensional shapes.			
<ul style="list-style-type: none"> Identify and construct two-dimensional patterns for three-dimensional models. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 514-517 <i>Hands-on Lab 512-513, 530-531</i>	SE: 340 #1, 344 #2 <i>The Game Zone 341 Hands-On Lab 346 Hands-On Mini Lab 314, 335, 342</i> TWE: A 334
<ul style="list-style-type: none"> Identify elements of three-dimensional geometric shapes. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 514-517	SE: 331-334, 339 #40, 340 #2, 345 #33, 364 #22-#23 TWE: DI 331
4B. Use maps and scale drawings to represent real objects or places.			
<ul style="list-style-type: none"> Students select appropriate units of measure and use proportional reasoning to convert measures. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 38-41, 267-269, 297-300	SE: 358-362, 367 #13-#15, 604-605, 606-607
<ul style="list-style-type: none"> Construct scale drawings and models with reasonable measurement accuracy. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 304-308	SE: 184-187, 200 #24-#27, 201 #2 TWE: DI 185
4C. Use the coordinate plane to explore geometric ideas.			
<ul style="list-style-type: none"> Locate a point, using ordered pairs of integers on the coordinate plane. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 112-115 <i>The Game Zone 117</i>	SE: 142-145, 614

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Compare geometric measurements and computations on coordinate axes as they are applied to parallel lines, congruent and similar figures. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 451-454, 456-459 <i>Hands-on Lab 460-461</i>	SE: 290-294, 296-299, 300-303, 529 #27-#29
<ul style="list-style-type: none"> Locate the quadrant in which an ordered pair of integers is located. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 112-115 <i>The Game Zone 117</i>	SE: 142-145, 614
<ul style="list-style-type: none"> Develop geometric ideas such as measurement formulas, using geoboards and graph paper. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 112-115, 451-454, 456-459 <i>Hands-on Lab 460-461</i>	SE: 290-294, 296-299, 300-303, 327 ex 3, 328 #2 <i>Hands-On Mini Lab 314</i> TWE: A 136
4D. Represent numerical relationships in one- and two-dimensional graphs.			
<ul style="list-style-type: none"> Use a number line graph to represent the solution of a problem with one unknown. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 172-175	SE: 492-495, 496-499, 500-504, 506 #27-#28, 507 #14-#19, 508 #7 TWE: A 495
<ul style="list-style-type: none"> Use two-dimensional graphs, including the coordinate plane, to represent the solution of a problem. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 177-181, 182-185 <i>Hands-on Lab 176</i>	SE: 522-525, 529 #32-#35, 530 #8-#10, 536 #45, 544-547, 548-551 TWE: A 525 DI 523
4E. Use variables to represent relationships.			
<ul style="list-style-type: none"> Use variables and appropriate operations to write an expression, equation, inequality, or system of equations or inequalities that represent a verbal description (three less than a number, half as large as area A). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 150-152, 156-159, 160-163, 172-175 <i>Study Skills 153</i>	SE: 39-42, 49 #49-#50, 53 #49-#50, 56 #42-#45, 57 #2, 58 #7 TWE: A 42 B 39

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Interpret, demonstrate understanding, and use variables in expressions, formulas, equations, and properties. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 18-20, 24-27, 30-33, 270-273 <i>Study Skills</i> 153	SE: 11-15, 19 ex 8, 21 #52-#57, 29 ex 5-ex 6, 31 #53, 32 #5, 36 ex 7, 37 #12-#14
4F. Use concrete materials and diagrams to describe the operation of real-world processes and systems.			
<ul style="list-style-type: none"> Model situations geometrically to interpret, formulate, and solve problems. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 440-443, 446-450, 451-454, 456-459 <i>Problem-Solving Strategy</i> 444-445 <i>Spreadsheet Investigation</i> 455	SE: 258 ex 4, 268 ex 2, 292 ex 4, 301 ex 2, 316 ex 4, 321 ex 5, 329 #17-#18, 337 ex 5
4G. Develop and explore models that do and do not rely on change.			
<ul style="list-style-type: none"> Construct an appropriate sample space (board games, spinners, dice, coins). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 370-373, 393-396 <i>Hands-on Lab</i> 397	SE: 374-377, 380-383, 396-399, 400-403 TWE: A 377 B 374 DI 375
<ul style="list-style-type: none"> Explore the range of probabilities (certainty, impossibility, sometimes). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 393-396 <i>Hands-on Lab</i> 397	SE: 374-377 TWE: B 374
<ul style="list-style-type: none"> Consider the reliability of sampling procedures. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 345-347 <i>Hands-on Lab</i> 344	SE: 406-409, 412 #46-#49, 413 #2, 414 #7 TWE: A 409 DI 407
4H. Investigate two- and three-dimensional transformations.			
<ul style="list-style-type: none"> Recognize similarity and rotational and bilateral symmetry in two- and three-dimensional figures. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 440-443, 456-459	SE: 286-289, 294 #33-#36, 299 #19-#20, 308 #25-#28, 309 #13-#15 TWE: A 289 B 286 DI 287

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Understand and use coordinate grids to plot simple figures and to determine lengths and areas related to them. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Hands-on Lab 478, 488 Hands-on Mini Lab 483, 489</i>	SE: 290-294, 296-299, 300-303, 308 #29-#34
<ul style="list-style-type: none"> Identify similar and congruent shapes and determine their image under simple transformations (translation, rotation, reflection) in the coordinate plane. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 451-454, 456-459 <i>Hands-on Lab 460</i>	SE: 279-282, 290-294, 296-299, 300-303, 308 #29-#34, 309 #17-#19 TWE: A 299
4l. Use appropriate tools to construct and verify geometric relationships.			
<ul style="list-style-type: none"> Using compasses, rulers, and protractors, identify and construct basic elements of geometric figures (altitudes, midpoints, diagonals, angle bisectors, and perpendicular bisectors; and central angles, radii, diameters, and chords of circles). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 418 Ex #1 <i>Hands-on Lab 412, 416-417, 426-427, 432-433 Hands-on Mini Lab 422</i>	SE: <i>Hands-On Lab 261, 266, 271, 283</i>
<ul style="list-style-type: none"> Identify the properties of congruent and similar triangles. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 440-443	SE: 180 ex 3, 181 #11-#12, 182 #20, 280 ex 1-ex 3, 281 #3-#8, 282 #14-#17 <i>Hands-On Mini Lab 178</i>
<ul style="list-style-type: none"> Identify corresponding sides in similar or congruent triangles. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 440-443	SE: 180 ex 3, 181 #11-#12, 182 #20, 280 ex 1-ex 3, 281 #3-#8, 282 #14-#17 <i>Hands-On Mini Lab 178</i>
<ul style="list-style-type: none"> Verify that vertical angles have equal measure. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 422-425 <i>Hands-on Lab 426-427</i>	SE: 256

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
4J. Develop procedures for basic geometric constructions.			
<ul style="list-style-type: none"> Construct an angle with a given measure. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Hands-on Lab 416-417</i>	SE: congruent triangles: <i>Hands-On Lab 283</i>
<ul style="list-style-type: none"> Bisect an angle, using a compass and a straightedge. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Hands-on Lab 416-417</i>	SE: <i>Hands-On Lab 266</i>
<ul style="list-style-type: none"> Construct the perpendicular bisector of a line segment. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Hands-on Lab 416-417</i>	SE: <i>Hands-On Lab 271</i>
5. Measurement Students use measurement in both metric and English measure to provide a major link between the abstractions of mathematics and the real world in order to describe and compare objects and data.			
5A. Estimate, make, and use measurements in real-world situations.			
<ul style="list-style-type: none"> Measure the distance of objects, using scientific notation (shuttle from the Earth). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 43-45	SE: 107 #44 TWE: ICE #5 105
<ul style="list-style-type: none"> Solve distance problems in miles per hour. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 292-295	SE: 73 ex 5
<ul style="list-style-type: none"> Use measurement in everyday situations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 38-41, 267-269, 270-273	SE: 358-362, 604-605, 606-607
<ul style="list-style-type: none"> Make an appropriate estimate relating to size, quantity, temperature, capacity, and the passage of time. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 38-41, 267-269	SE: <i>Study Tip 321</i>

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
5B. Select appropriate standard and nonstandard measurement units and tools to measure to a desired degree of accuracy.			
<ul style="list-style-type: none"> Understand the uses of units, square units, and cubic units. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 270-273, 520-522, 524-527	SE: 613
<ul style="list-style-type: none"> Find the measure of angles, using a protractor. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 413-415 <i>Hands-on Lab 412</i>	SE: 615 <i>Hands-On Mini Lab 256</i>
<ul style="list-style-type: none"> Determine the degree of accuracy needed in measurement situations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 542-545	SE: 358-362, 366 #38-#45, 367 #13-#15 TWE: A 362 B 358 DI 359
<ul style="list-style-type: none"> Determine significant digits in measurement. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 542-545	SE: 358-362, 366 #38-#45, 367 #13-#15 TWE: A 362 B 358 DI 359
<ul style="list-style-type: none"> Determine appropriate units of measure. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 38-41, 267-269	SE: 358-362, 366 #38-#45, 367 #13-#15
5C. Develop measurement skills and informally derive and apply formulas in direct measurement activities.			
<ul style="list-style-type: none"> Know and apply formulas for perimeter and area of polygons, volume of rectangular solids, circumference, and area of circles. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 270-273, 275-277, 489-492, 493-495, 520-522 <i>Hands-on Lab 274</i>	SE: 314-318, 319-323, 335-339, 340 #9-#10, 613 TWE: A 318, 323 DI 336
<ul style="list-style-type: none"> Derive and use formulas for surface area of a solid, volume of right circular cylinders, spheres, cones, and pyramids. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 520-522, 524-527, 532-535, 538-541	SE: 347-351, 352-355, 362 #47-#48, 365 #30-#32 TWE: A 350, 355 DI 348, 353

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Understand length, area, and volume and make relationships between the measurements. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 270-273, 275-277, 489-492, 493-495, 520-522	SE: 314-318, 319-323, 335-339, 347-351, 352-355, 613 TWE: A 355 DI 353
<ul style="list-style-type: none"> Find the measure of the sides and angles of a right triangle, using the Pythagorean theorem and trigonometric ratios. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 479-482 <i>Hands-on Lab 478</i>	SE: 132-136, 137-140, 145 #28, 147 #31-#36 <i>Hands-On Lab 192-193</i> TWE: A 136 B 137 DI 138
5D. Use statistical methods and measures of central tendencies to display, describe, and compare data.			
<ul style="list-style-type: none"> Interpret graphs, tables, scales, and charts by making comparisons and calculations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 60-63, 92-95 <i>Problem-Solving Strategy 338-339</i>	SE: 420-424, 426-429, 430-433, 446-449, 450-453 <i>Graphing Calculator Investigation 425</i> TWE: A 429, 453
<ul style="list-style-type: none"> Use appropriate statistical measures to compare data. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 69-72 <i>Hands-on Lab 73</i>	SE: 430-433, 450-453, 459 #13-#14 <i>Spreadsheet Investigation 439</i> TWE: A 433
<ul style="list-style-type: none"> Determine which measures of central tendency (mean, median, mode) best represent the sets of data. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 69-72 <i>Hands-on Lab 73</i>	SE: 435-438, 449 #24, 450-453, 459 #15-#17 <i>The Game Zone 441 Spreadsheet Investigation 439</i> TWE: B 435 DI 436

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Organize and display collected data, using appropriate tables, charts, or graphs including histograms, broken line, circle graphs, stem and leaf plots, and box and whisker plots. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 54-57, 64-68, 76-79, 80-83	SE: 420-424, 426-429, 430-433, 446-449, 450-453 <i>Graphing Calculator Investigation 425</i> TWE: A 429, 453
5E. Explore and produce graphic representations of data (calculators/computers may be used).			
<ul style="list-style-type: none"> Use graphic calculators and computer spreadsheets to organize and analyze data. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 62 #7 <i>Graphing Calculator Investigation 84</i> <i>Spreadsheet Investigation 90-91, 309, 361</i>	SE: <i>Graphing Calculator Investigation 425, 543</i> <i>Spreadsheet Investigation 439</i>
<ul style="list-style-type: none"> Construct histograms and frequency polygons. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 85-89	SE: 420-424, 429 #15, 433 #17, 440 #3, 458 #11 <i>Graphing Calculator Investigation 425</i> TWE: A 424
5F. Develop critical judgment for the reasonableness of measurement.			
<ul style="list-style-type: none"> Select, use, and explain a method for comparing weights, capacities, geometric measures, times, and temperatures within and between measurement systems (e.g., miles per hour and feet per second, about how many inches in a given number of meters). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 38-41, 267-269, 292-295	SE: 604-605, 606-607

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
6. Uncertainty Students use ideas of uncertainty to illustrate that mathematics involves more than exactness when dealing with everyday situations.			
6A. Use estimation to check the reasonableness of results obtained by computation, algorithms, or the use of technology.			
<ul style="list-style-type: none"> Estimate the results of a problem prior to arriving at a solution. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: <i>Problem-Solving Strategy</i> 338-339 <i>Prerequisite Skills</i> 558	SE: 6-10, 336, 488-489
<ul style="list-style-type: none"> Round whole numbers, decimals, and fractions. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 240-243 <i>Prerequisite Skills</i> 557	SE: 600-601
<ul style="list-style-type: none"> Estimate the outcomes of problems/experiments, complete the task, and compare the results with the prediction. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 60-63, 393-396 <i>Hands-on Lab</i> 397	SE: 400-403
6B. Use estimation to solve problems for which exact answers are inappropriate.			
<ul style="list-style-type: none"> Recognize when an estimate is appropriate. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 240-243, 334-337 <i>Problem-Solving Strategy</i> 338-339 <i>Prerequisite Skills</i> 558	SE: 120-121, 122, 228-229, 321, 600-601
6C. Estimate the probability of events.			
<ul style="list-style-type: none"> Understand that the larger a well-chosen sample is, the more likely it is to represent the whole, and that there are many ways of choosing a sample that can make it unrepresentative of the whole. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 345-347 <i>Hands-on Lab</i> 344	SE: 406-409
<ul style="list-style-type: none"> Combinations and permutations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 381-383, 387-390 <i>Hands-on Lab</i> 386	SE: 384-387, 388-391, 411 #21-#34 TWE: A 387, 391 B 384 DI 385, 389

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Conduct and predict outcomes of experiments with independent events. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 393-396, 398-401 <i>Problem-Solving Strategy</i> 391 <i>Hands-on Lab</i> 397	SE: 400-403, 409 #24, 412 #42-#45, 413 #17-#19 <i>Graphing Calculator Investigation</i> 404-405
<ul style="list-style-type: none"> Understand the terms <i>relative frequency</i>, <i>cumulative frequency</i> and <i>cumulative relative frequency</i>. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 54-57	SE: 420-424
6D. Use simulation techniques to estimate probabilities.			
<ul style="list-style-type: none"> Conduct a variety of simulations to represent an experiment that cannot be determined by theoretical probability or is not practical to determine experimentally. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 393-396 <i>Problem-Solving Strategy</i> 391 <i>Hands-on Lab</i> 397	SE: <i>Graphing Calculator Investigation</i> 404-405 <i>Hands-On Mini Lab</i> 400
6E. Determine probabilities of independent and mutually exclusive events.			
<ul style="list-style-type: none"> Understand and use empirical and theoretical probability, using the formula $P(E) = f/n$. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 370-373, 393-396, 398-401	SE: 400-403 <i>Graphing Calculator Investigation</i> 404-405
<ul style="list-style-type: none"> Develop and explore combinations and permutations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 381-383, 387-390 <i>Hands-on Lab</i> 386	SE: 384-387, 388-391, 411 #21-#34 TWE: A 387, 391 B 384 DI 385, 389
<ul style="list-style-type: none"> Express probabilities as fractions, percents, or decimals. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 370-373, 393-396, 398-401	SE: 374-377, 385 ex 4, 396-399, 400-403, 410 #9-#15, 411 #16-#19, 412 #35-#45 TWE: A 403
<ul style="list-style-type: none"> Predict the results of a series of trials once the probability for one trial is known. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 393-396 <i>Problem-Solving Strategy</i> 391 <i>Hands-on Lab</i> 397	SE: 398 #3, 401 ex 3, 403 #20 TWE: A 399, 403 B 396

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<p>7. Patterns/Functions Students use patterns and functions to develop mathematical power, appreciate the true beauty of mathematics, and construct generalizations that describe patterns simply and efficiently.</p>			
<p>7A. Recognize, describe, and generalize a wide variety of patterns and functions.</p>			
<ul style="list-style-type: none"> Identify, describe, represent, extend, and create patterns (numerical and geometric). 	<p>Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i>.</p>	<p>SE: 34-36 <i>Hands-on Lab 37</i> <i>Problem-Solving Strategy 132-133</i></p>	<p>SE: 512-515, 530 #4-#6, 552 #9-#13, 555 #3-#5 <i>Hands-On Lab 516</i> TWE: A 515 B 512</p>
<ul style="list-style-type: none"> Describe functions and generalize by the use of rules and algebraic expressions. 	<p>Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i>.</p>	<p>SE: 177-181 <i>Hands-on Lab 176</i></p>	<p>SE: 517-520, 530 #7, 533-536, 553 #14-#19, 555 #20 TWE: A 519 DI 518</p>
<p>7B. Describe and represent patterns and functional relationships, using tables, charts, graphs, algebraic expressions, rules, and verbal descriptions.</p>			
<ul style="list-style-type: none"> Describe and represent numerical and geometric patterns and functions, using equations, graphs, and tables. 	<p>Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i>.</p>	<p>SE: 34-36, 177-181 <i>Hands-on Lab 37</i> <i>Problem-Solving Strategy 132-133</i></p>	<p>SE: 517-520, 522-525, 530 #7, 533-536 <i>Graphing Calculator Investigation 543</i> <i>Hands-On Lab 521</i></p>
<ul style="list-style-type: none"> Organize and analyze data resulting in function applications through the use of a table of values, sentence, formula, graph, and prediction. 	<p>Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i>.</p>	<p>SE: 177-181, 182-185 <i>Hands-on Lab 176</i></p>	<p>SE: 539-542, 557 #17 <i>Graphing Calculator Investigation 543</i> <i>Hands-On Lab 521</i></p>
<p>7C. Develop methods to solve basic linear and quadratic equations.</p>			
<ul style="list-style-type: none"> Solve multistep equations in one variable. 	<p>Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i>.</p>	<p>SE: 166-169</p>	<p>SE: 474-477, 481 #26-#28, 484-487, 490 #10-#15 <i>Hands-On Lab 482-483</i> TWE: A 477 B 474 DI 475</p>

KEY IDEAS	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 1	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2	MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 3
<ul style="list-style-type: none"> Solve one- and two-step equations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 24-27, 156-159, 160-163, 166-169	SE: 474-477, 481 #26-#28, 484-487, 490 #10-#15 <i>Hands-On Lab</i> 482-483 TWE: A 477 B 474 DI 475
<ul style="list-style-type: none"> Use five basic properties of equality in solving equations with one variable. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 30-33, 156-159, 160-163	SE: 474-477, 481 #26-#28, 484-487, 490 #10-#15 <i>Hands-On Lab</i> 482-483 TWE: A 477 B 474 DI 475
<ul style="list-style-type: none"> Understand the addition, subtraction, multiplication, and division properties as they pertain to problem-solving situations with inequalities. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 172-175	SE: 496-499, 500-504, 506 #29-#36, 507 #14-#19 TWE: A 504 B 496 DI 496, 500
<ul style="list-style-type: none"> Model and solve multistep problems involving rate, average speed, distance and time, or direct variation. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 166-169, 292-295, 297-300 <i>Hands-on Lab</i> 296	SE: 479 ex 5, 499 #58 TWE: A 487
<ul style="list-style-type: none"> Use algebraic expressions, equations, and inequalities to model linear and nonlinear situations, including direct and inverse variation, exponential growth, and quadratic behavior. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 150-152, 172-175, 177-181 <i>Hands-on Lab</i> 176	SE: 477 #25-#26, 480 #15-#18, 487 #33-#35, 490 #17, 497 ex 4, 498 #46, 503 #30-#31, 507 #12

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<ul style="list-style-type: none"> Fundamental ideas of the quadratic equation and its graph. Students should know that linear situations “grow by adding,” versus, for example, exponential situations, which “grow by multiplying,” and recognize these characteristics in tables, graphs, equations, and situations. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3.</i>	See <i>Mathematics: Applications and Concepts Course 3.</i>	SE: 565-568, 573 #41-#44, 578 #7-#9, 593 #9-#11, 595 #9, 597 #16-#20 TWE: A 568 DI 565
7D. Develop an understanding of functions and functional relationships: that a change in one quantity (variable) results in change in another.			
<ul style="list-style-type: none"> Examine a situation and determine if the quantities vary directly or indirectly, and represent that variation graphically, in a table and in an equation. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3.</i>	SE: 177-181, 182-185 <i>Hands-on Lab 176</i>	SE: 522-525 <i>Hands-On Lab 521</i>
<ul style="list-style-type: none"> Use a variety of representations to describe a functional relationship. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3.</i>	SE: 177-181, 182-185 <i>Hands-on Lab 176</i>	SE: 517-520, 530 #7, 533-536, 553 #14-#19, 555 #20 TWE: A 519 DI 518
<ul style="list-style-type: none"> Identify the input and the output in a relationship between two variables and determine whether the relationship is a function. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3.</i>	SE: 177-181 <i>Hands-on Lab 176</i>	SE: 517-520, 522-525 <i>Hands-On Lab 521</i> TWE: A 519 B 517 DI 518
<ul style="list-style-type: none"> Identify and justify proportional relationships. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3.</i>	SE: 297-300, 304-308	SE: 121 ex 2, 156-159, 160-164, 170-173, 184-187, 188-191, 216-219, 232-235
7E. Verify results of substituting variables.			
<ul style="list-style-type: none"> Solve an equation and check the solution set by substitution. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3.</i>	SE: 156-159, 160-163, 166-169	SE: 46 ex 1, 93 ex 3, 475 ex 2, 476 ex 5

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<ul style="list-style-type: none"> Understand that an equation containing a variable may be true for just one value of the variable. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 24-27	SE: 474-477, 481 #26-#28, 484-487, 490 #10-#15 <i>Hands-On Lab</i> 482-483 TWE: A 477 B 474 DI 475
7F. Apply the concept of similarity in relevant situations.			
<ul style="list-style-type: none"> Demonstrate an understanding of congruence between two geometric figures and what congruence means about the relationships between the sides and angles of the two figures. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 428-431	SE: 279-282, 284 #8, 289 #25, 294 #37, 307 #21-#24, 309 #11-#12 TWE: A 282 DI 280
<ul style="list-style-type: none"> Understand the difference between similarity and congruence. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 440-443	SE: 178-182, 279-282
<ul style="list-style-type: none"> Identify similar and congruent triangles and other polygons and their corresponding parts. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 428-431, 440-443	SE: 178-182, 279-282, 284 #8, 289 #25, 294 #37, 307 #21-#24, 309 #11-#12 TWE: A 282 DI 280
7G. Use properties of polygons to classify them.			
<ul style="list-style-type: none"> Apply the relationship between the interior and exterior angles of a polygon. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 446-450	SE: 264 #10-#15, 274 #10-#15, 289 #26, 307 #19, 309 #6-#8, 310 #6 <i>Hands-On Lab</i> 278 <i>Key Concept</i> 262, 272
<ul style="list-style-type: none"> Use the sum of the number of degrees of measure of triangles, quadrilaterals, hexagons, etc. to solve problems. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 446-450	SE: 272 ex 1, 274 #10-#15, 275 #36, 284 #5-#7, 289 #26 <i>Hands-On Lab</i> 278 <i>Key Concept</i> 262, 272

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<ul style="list-style-type: none"> Classify triangles according to angle size and/or length of sides. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 428-431 <i>Hands-on Lab 432-433</i>	SE: 262-265, 270 #23, 275 #39-#41, 284 #1, 307 #14 TWE: A 265 B 262 DI 263
7H. Explore relationships involving points, lines, angles, and planes.			
<ul style="list-style-type: none"> Understand and use proper terminology, symbols, definitions, and formulas for undefined and defined terms. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 413-415 <i>Hands-on Lab 412, 426-427</i>	SE: 256-260, 331
<ul style="list-style-type: none"> Name, define, and measure angles and angle pairs such as complementary, supplementary, alternate interior and exterior, and vertical angles. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 413-415, 422-425 <i>Hands-on Lab 412</i>	SE: 256-260, 265 #36-#39, 270 #24-#27, 284 #3-#4, 306 #8-#11, 309 #3-#5 TWE: A 259 DI 257
7I. Develop and apply the Pythagorean principle in the solution of problems.			
<ul style="list-style-type: none"> Use the Pythagorean theorem in the solution of problems (include rational and irrational numbers). 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 479-482	SE: 132-136, 137-140, 145 #28-#30, 147 #31-#36, 148 #37-#41, 149 #12-#13 TWE: A 136 DI 138
7J. Explore and develop basic concepts of right triangle trigonometry.			
<ul style="list-style-type: none"> Understand the relationships of the sides of a right triangle. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 479-482 <i>Hands-on Lab 478</i>	SE: 267-270, 275 #37-#38, 282 #30, 284 #10, 307 #15-#18, 309 #6-#7 TWE: A 269 DI 268
<ul style="list-style-type: none"> Explore and develop the concept that corresponding angles of similar triangles have the same measure. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 440-443	SE: 178-182, 187 #25, 191 #25, 199 #21-#22 TWE: A 182 DI 179

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<ul style="list-style-type: none"> Develop and apply the formulas for sine, cosine, and tangent. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	See <i>Mathematics: Applications and Concepts Course 3</i> .	SE: <i>Hands-On Lab 192-193</i>
7K. Use patterns and functions to represent and solve problems.			
<ul style="list-style-type: none"> Use patterns and functions to solve problems. 	Objective is for Grades 7-8. See <i>Mathematics: Applications and Concepts Courses 2 and 3</i> .	SE: 34-36, 177-181 <i>Hands-on Lab 37, 176</i> <i>Problem-Solving Strategy 132-133</i>	SE: 515 #28-#32, 518 ex 4, ex 5, 520 #23-#24, 525 #23-#24, 530 #7, 552 #13, 553 #24

Codes Used for TWE Pages

Course 1

A Assess
 B Bellringer
 DI Daily Intervention
 ICE In-Class Example
 MIC More Interdisciplinary Connections
 NS Number Sense
 PC Project Crisis
 PS Portfolio Suggestion
 T Teach
 TNT Tips for New Teachers
 WQ WebQuest

Course 2

A Assess
 B Bellringer
 DI Daily Intervention
 I-CE In-Class Example

Course 3

A Assess
 B Bellringer
 DI Daily Intervention
 ICE In-Class Example
 NS Number Sense
 T Teach
 TNT Tips for New Teachers