

GLENCOE CORRELATION
MATHEMATICS: APPLICATIONS AND CONCEPTS COURSE 2
ARIZONA
Academic Content Standards
Grade 7

CONTENT STANDARDS	PAGE REFERENCES
Strand 1: Number Sense and Operations	
Concept 1: Number Sense Understand and apply numbers, ways of representing numbers, the relationships among numbers and different number systems.	
PO 1. Express fractions as terminating or repeating decimals.	SE: 210-213, 214 #13-#15, 233 #20-#33, 235 #7, #8, #10, #11 <i>Extra Practice Lesson 5-4 575 #7-#18</i> <i>Mixed Problem Solving 600 #8</i> TWE: A 213, T 211
PO 2. Identify the greatest common factor for a set of whole numbers.	SE: 203-206, 233 #15-#18, 235 #4 <i>Extra Practice Lesson 5-2 574 #1-#18</i> <i>Mixed Problem Solving 600 #4, #5</i> <i>Standardized Practice Test 237 #18</i> TWE: T 204
PO 3. Determine the least common multiple for a set of whole numbers.	SE: 224-226, 234 #58-#63 <i>Extra Practice Lesson 5-7 576</i> <i>Mixed Problem Solving 600 #18</i> <i>Standardized Practice Test 237 #16, #18</i> TWE: T 225
PO 4. Choose the appropriate signed real number to represent a contextual situation.	SE: 106-108, 142 #11-#14, 145 #3-#5 <i>Extra Practice Lesson 3-1 569 #1-#6</i> <i>Mixed Problem Solving 598 #1, #2,</i> TWE: T 107 #1, #2
PO5. Recognize the absolute value of a number used in contextual situations.	SE: 106-108, 142 #15-#19 <i>Standardized Test Practice 146 #6</i> TWE: DI 106
PO 6. Locate integers on a number line.	SE: 106, 108 #30-#33, #37, 109-111 <i>Extra Practice Lesson 3-1 #19-#22,</i> <i>Lesson 3-2 570</i> TWE: A 108
PO 7. Order integers.	SE: 110, 111 #29-#32, #34, 143 #26-#29, 145 #9, 146 #7, 147 #16 <i>Extra Practice Lesson 3-2 #17-#22</i> <i>Mixed Problem Solving 598 #3</i> TWE: T 110
PO 8. Classify rational numbers as natural, whole, or integers.	SE: <i>Key Concept 229</i> TWE: T 229

CONTENT STANDARDS	PAGE REFERENCES
Concept 2: Numerical Operations	
Understand and apply numerical operations and their relationship to one another.	
PO 1. Add integers.	SE: 118-119, 120-124, 144 #38-#42, 145 #13, #14 <i>Extra Practice Lesson 3-4</i> 570 #1-#12 <i>Mixed Problem Solving</i> 598 #9 <i>Standardized Test Practice</i> 190 #7 TWE: A 124, DI 121, T 121-122
PO 2. Subtract integers.	SE: 126-127, 128-131, 144 #43-#46 <i>Extra Practice Lesson 3-5</i> 571 #1-#15 <i>Mixed Problem Solving</i> 598 #10-#12 <i>Standardized Practice Test</i> 147 #18 TWE: A 130, T 129
PO 3. Select the grade level appropriate operation to solve word problems.	SE: 6-9, 22-23, 132-133, 164-165, 201-202, 252-253, 302-303, 391-392, 444-445, 496- 497
PO 4. Solve word problems using grade level appropriate operations and numbers.	SE: 6-9, 22-23, 132-133, 164-165, 201-202, 252-253, 302-303, 391-392, 444-445, 496- 497
PO 5. Multiply integers.	SE: 134-137, 144 #47-#50, 145 #24 <i>Extra Practice Lesson 3-6</i> 571 #1-#12 <i>Mixed Problem Solving</i> 598 #13, #14 TWE: A 137, T 135
PO 6. Divide integers.	SE: 138-141, 144 #55-#58 <i>Extra Practice Lesson 3-7</i> 571 #1-#20 <i>Mixed Problem Solving</i> 598 #15, #16 TWE: A 141, T 139
PO 7. Apply grade level appropriate properties to assist in computation.	SE: 30-33, 48 #40-#43, 121-124 <i>Extra Practice Lesson 1-6</i> 565 #1-#24 <i>Mixed Problem Solving</i> 596 #10, #11
PO 8. Apply the symbols + and – to represent positive and negative, and “ ” to represent absolute value.	SE: 106-108, 142 #11-#19, 145 #3-#5 <i>Extra Practice Lesson 3-1</i> 569 #1-#18 <i>Mixed Problem Solving</i> 598 #1, #2 TWE: DI 106, T 107
PO 9. Use grade level appropriate mathematical terminology.	SE: <i>Key Concepts</i> are highlighted in each chapter TWE: B 18, 80, 177, 270, 275, 338, 393, 446, 493, 538
PO10. Calculate the percent of a given number.	SE: 319-321, 328 #50-#53 <i>Extra Practice Lesson 7-7</i> 582 <i>Mixed Problem Solving</i> 602 #15 TWE: A 321, T 320
PO 11. Convert numbers expressed in standard notation to scientific notation and vice versa. (positive exponents only)	SE: 43-45, 48 #53-#59 <i>Extra Practice Lesson 1-9</i> 566 <i>Mixed Problem Solving</i> 596 #15 TWE: DI 43, T 44

CONTENT STANDARDS	PAGE REFERENCES
PO 12. Simplify numerical expressions using the order of operations with grade appropriate operations on number sets.	SE: 14-17, 47 #17-#24, 49 #5, #6 <i>Extra Practice Lesson 1-3</i> 564 <i>Mixed Problem Solving</i> 596 #5, #6 <i>Standardized Practice Test</i> 100 #2, 147 #19 TWE: B 14, T 15
Concept 3: Estimation Use estimation strategies reasonably and fluently.	
PO 1. Solve grade level appropriate problems using estimation.	SE: 240-243, 334-337, 475-477 <i>Prerequisite Skills</i> 558 TWE: B 240, DI 476, T 241-242, 335-336, 476
PO 2. Use estimation to verify the reasonableness of a calculation. (e.g., Is -2.5×18 about -50 ?)	SE: 338 <i>Standardized Test Practice</i> 508 #9 TWE: T 338
PO 3. Determine whether an estimation of an area is approximately equal to the actual measure.	SE: 483 ex 1-2, 489 ex 1 <i>Problem-Solving Strategy</i> 496 ex TWE: TT 493 DI 497
PO 4. Determine whether an estimation of an angle is approximately equal to the actual measure.	This objective can be met during teacher/class discussion.
PO 5. Determine whether an estimation of the circumference of a circle is approximately equal to the actual measure.	This objective can be met during teacher/class discussion.
PO 6. Verify the reasonableness of estimates made from calculator results within a contextual situation.	SE: 340-341 ex 1-3 <i>Problem-Solving Strategy</i> 338-339 TWE: A 339
Strand 2: Data Analysis, Probability, and Discrete Mathematics	
Concept 1: Data Analysis (Statistics) Understand and apply data collection, organization and representation to analyze and sort data.	
PO 1. Formulate questions to collect data in contextual situations.	SE: <i>Hands-on Lab</i> 73 TWE: A 79
PO 2. Construct a circle graph with appropriate labels and title from organized data.	SE: 418-421, 463 #11 <i>Extra Practice Lesson 10-2</i> 587 <i>Mixed Problem Solving</i> 605 #3, #4 TWE: T 419
PO 3. Determine when it is appropriate to use histograms, line graphs, double bar graphs and stem-and-leaf plots.	SE: 74 #1-#3 <i>Hands-on Lab</i> 73 step 4 TWE: A 73, 88, 421, B 64, PS 99
PO 4. Interpret data displays including histograms, stem-and-leaf plots, circle graphs and double line graphs.	SE: 60-63, 76-79, 85-89, 92-95, 418-421 <i>Problem Solving Strategy</i> 58-59 TWE: T 87
PO 5. Answer questions based on data displays including histograms, stem-and-leaf plots, circle graphs and double line graphs.	SE: 63 #14, 76-79, 86-89, 419 example 3, 420-421 #5, #6, #12 <i>Problem Solving Strategy</i> 59 TWE: B 418, T 61 #1, 86, 420
PO 6. Find the mean, median, mode and range of a given numerical data set.	SE: 66 #8, 67 #17, #20, 69-72, 97 #16-#19 <i>Standardized Test Practice</i> 100 #6, 146 #4 <i>Extra Practice Lesson 2-4</i> 568 <i>Mixed Problem Solving</i> 597 #6-#9, #10, #15 TWE: T 70

CONTENT STANDARDS	PAGE REFERENCES
PO 7. Interpret trends from displayed data.	SE: 60-63, 85-87 <i>Extra Practice Lesson 2-2 567</i> <i>Mixed Problem Solving 597 #5</i> <i>Problem Solving Strategy 58-59</i> TWE: A 59, T 58, 61
PO 8. Compare trends in data related to the same investigation.	SE: 60-63, 85-87 <i>Extra Practice Lesson 2-2 567</i> <i>Mixed Problem Solving 597 #5</i> <i>Problem Solving Strategy 58-59</i> TWE: A 59 T 58, 61
PO 9. Solve contextual problems using histograms, line graphs of continuous data, double bar graphs, and stem-and-leaf plots.	SE: 60-63, 76-79, 85-89, 92-95, 97 #11, 98 #28-#30 <i>Problem Solving Strategy 59 #6</i> TWE: A 79 T 77-78, 86-88, 93
Concept 2: Probability Understand and apply the basic concepts of probability.	
PO 1. Determine the probability that a specific event will occur in a single stage probability experiment. (e.g., Find the probability of drawing a red marble from a bag with 3 red, 5 blue, and 9 black marbles)	SE: 370-373, 402 #11-#16 <i>Extra Practice Lesson 9-1 584</i> <i>Mixed Problem Solving 604 #1-#3</i> <i>Standardized Test Practice 407 #12</i> TWE: T 371
PO 2. Compare probabilities to determine the fairness of a contextual situation. (e.g., If John wins when two or greater shows after a six-sided number cube is rolled and Joaquin wins otherwise, is this a fair game?)	SE: 374 example 1, 377 #21, #22 <i>Hands-on Mini Lab 374</i>
PO 3. Predict the outcome of a grade level appropriate probability experiment.	SE: 370-373, 374-377, 378-380, 393-396, 398-401, 402 #11-#16 <i>Hands-on Lab 397</i> <i>Extra Practice Lesson 9-1 584, Lesson 9-6 586, Lesson 9-7 586 #4-#7</i>
PO 4. Record the data from performing a grade level appropriate probability experiment.	SE: <i>Hands-on Lab 397</i> <i>Hands-on Mini Lab 393</i> <i>Problem Solving Strategy 391-392</i> TWE: DI 371
PO 5. Compare the outcome of an experiment to predictions made prior to performing the experiment.	SE: <i>Hands-on Mini Lab 374</i>
PO 6. Make predictions from the results of student-generated experiments using objects (e.g., coins, spinners, number cubes, and cards).	SE: <i>Hands-on Mini Lab 393</i>
PO 7. Compare the results of two repetitions of the same grade level appropriate probability experiment.	SE: <i>The Game Zone 385</i> TWE: DI 371

CONTENT STANDARDS	PAGE REFERENCES
Concept 3: Discrete Mathematics – Systematic Listing and Counting	
Understand and demonstrate the systematic listing and counting of possible outcomes.	
PO 1. Determine all possible outcomes involving the combination of up to three sets of objects. (e.g., How many outfits can be made with 3 pants, 2 tee-shirts and 2 pairs of shoes?)	SE: 374-377, 378-380, 403 #17-#24 <i>Extra Practice Lesson 9-2 585, Lesson 9-3 585</i> <i>Mixed Problem Solving 604 #4-#8</i> <i>Standardized Test Practice 406-407 #6, #13, #18a</i> TWE: B 374 T 375
PO 2. Determine all possible arrangements of a given set, using a systematic list, table, tree diagram or other representation.	SE: 374-377, 378-380, 381-383, 387-390 <i>Extra Practice Lesson 9-2 585, Lesson 9-3 585, Lesson 9-4 585, Lesson 9-5 586</i> <i>Mixed Problem Solving 604 #4-#10</i> <i>Standardized Test Practice 406-407 #6, #7, #13-#15</i>
Concept 4: Vertex-Edge Graphs	
Understand and apply vertex-edge graphs.	
PO 1. Find the shortest circuit on a map that makes a tour of specified sites (vertex-edge graph).	SE: 453 #12 <i>When am I ever going to use this? 112</i> <i>Hands-On Mini Lab 304</i>
Strand 3: Patterns, Algebra, and Functions	
Concept 1: Patterns	
Identify patterns and apply pattern recognition to reason mathematically.	
PO 1. Communicate a grade level appropriate recursive pattern, using symbols or numbers.	SE: 34-36, 48 #44-#47 <i>Hands-on Lab 37</i> <i>Extra Practice Lesson 1-7 #1-#24</i> TWE: B 34 T 35
PO 2. Extend a grade level appropriate recursive pattern.	SE: 33 #52-#57, 34-36, 48 #44-#47 <i>Extra Practice Lesson 1-7 #10-#24</i> <i>Standardized Practice Test 50 #7</i> TWE: B 34
PO 3. Solve grade level appropriate recursive pattern problems.	SE: <i>Mixed Problem Solving 596 #12</i> <i>Standardized Practice Test 51 #17</i> TWE: A 36
Concept 2: Functions and Relationships	
Describe and model functions and their relationships.	
PO 1. Describe the rule used in a simple grade level appropriate function. (e.g., T-chart, input/output model)	SE: 36 #25, #26, 181 #37-#40 <i>Standardized Practice Test 191 #20b</i> TWE: T 178
Concept 3: Algebraic Representations	
Represent and analyze mathematical situations and structures using algebraic representations.	
PO 1. Evaluate an expression containing two variables by substituting integers for the variable. (e.g., $7x + m$, when $x = -4$ and $m = 12$)	SE: 18-21, 47 #25-#31 <i>Extra Practice Lesson 1-4 565</i> <i>Mixed Problem Solving 596 #7</i> TWE: T 19

CONTENT STANDARDS	PAGE REFERENCES
PO 2. Use variables in contextual situations.	SE: 25 example 3, 27 #42-#46, 150-152, 159 #36, #37, 163 #38, 168-169 #38, #39, 174-175 #34, #35, #40, 189 #11 <i>Mixed Problem Solving</i> 599 #1, #2 <i>Study Skill</i> 153
PO 3. Translate a written sentence into a one-step, one-variable algebraic equation.	SE: 25 example 3, 27 #42, #45, 150-152, 186 #15-#18 <i>Extra Practice Lesson 4-1</i> 572 #19-#30 <i>Mixed Problem Solving</i> 599 #1, #2, #10 <i>Study Skill</i> 153
PO 4. Translate a sentence written in context into an algebraic equation involving one operation.	SE: 25 example 3, 27 #42-#46, 150-152, 159 #36, #37, 163 #38, 168-169 #38, #39, 174-175 #34, #35, #40, 189 #11 <i>Mixed Problem Solving</i> 599 #1, #2, #10 <i>Study Skill</i> 153
PO 5. Solve one-step equations using inverse operations with positive rational numbers. (e.g., $\frac{2}{3}n = 6$)	SE: 156-159, 160-163, 187 #19-#36, 189 #5-#7 <i>Hands-on Lab</i> 154-155 <i>Extra Practice Lesson 4-2</i> 572, <i>Lesson 4-3</i> 572 TWE: T 157, 161
Concept 4: Analysis of Change Analyze change in a variable over time and in various contexts.	
PO 1. Analyze change in various linear contextual situations.	SE: 177-181, 182-185, 188 <i>Extra Practice Lesson 4-6</i> 573, <i>Lesson 4-7</i> 574 TWE: T 178-179, 183
Strand 4: Geometry and Measurement	
Concept 1: Geometric Properties Analyze the attributes and properties of two- and three-dimensional shapes and develop mathematical arguments about their relationships.	
PO 1. Draw a geometric figure showing specified properties. (e.g., Draw an obtuse triangle.)	SE: 430 #2, 442 #2, 448 #2, 481 #2, 484 #2, 491 #2, #16-#19, 494 #1 TWE: DI 434
PO 2. Classify three-dimensional solids by their configuration and properties. (e.g., parallelism, perpendicularity and congruency)	SE: 520, 524
PO 3. Identify the net (two-dimensional representation) that corresponds to a rectangular prism, cone, or cylinder.	SE: 530, 531 #7, #8, 532 example 1 <i>Hands-on Mini Lab</i> 538 #1
PO 4. Distinguish between length, area, and volume, using two- and three-dimensional geometric figures.	SE: 271-273, 483-485, 489-492, 498-500, 520-522 <i>Hands-on Lab</i> 488 TWE: B 520
PO 5. Draw polygons with appropriate labels.	SE: 448 #2
PO 6. Identify the angles created by two lines and a transversal.	SE: <i>Hands-on Lab</i> 426-427
PO 7. Recognize the relationship between central angles and intercepted arcs.	SE: 277 #24

CONTENT STANDARDS	PAGE REFERENCES
PO 8. Identify arcs and chords of a circle.	This objective can be met during teacher/class discussion.
PO 9. Model the triangle inequality theorem using manipulatives.	This objective can be met during teacher/class discussion.
PO 10. Identify corresponding parts of congruent polygons as congruent.	SE: 440 defines corresponding parts TWE: TI 440 directs teachers to explain the relationship between congruent and similar figures.
Concept 2: Transformation of Shapes Apply spatial reasoning to create transformations and use symmetry to analyze mathematical situations.	
PO 1. Identify rotations about a point, using pictorial models.	SE: <i>Hands-on Lab</i> 460-461
PO 2. Recognize simple single rotations, translations or reflections on a coordinate grid.	SE: 451-454, 456-459 <i>Hands-on Lab</i> 460-461 <i>Spreadsheet Investigation</i> 455 <i>Standardized Test Practice</i> 467 #17, #18e, 509 #14, 551 #15 TWE: T 452, 457
Concept 3: Coordinate Geometry Specify and describe spatial relationships using coordinate geometry and other representational systems.	
PO 1. Graph data points in (x, y) form in any quadrant of a coordinate grid.	SE: 112-115 <i>Extra Practice Lesson</i> 3-3 570 <i>The Game Zone</i> 117 <i>Mixed Problem Solving</i> 598 #4-#8 <i>Standardized Test Practice</i> 146-147 #8, #9, #20, 190 #6
PO 2. State the missing coordinate of a given figure in any quadrant of a coordinate grid using geometric properties. (e.g., find the coordinates of the missing vertex of a rectangle when two adjacent sides are drawn)	SE: <i>Standardized Test Practice</i> 191 #13
Concept 4: Measurement - Units of Measure - Geometric Objects Understand and apply appropriate units of measure, measurement techniques, and formulas to determine measurements.	
PO 1. Identify the appropriate unit of measure for the volume of an object. (e.g., cubic inches or cubic cm)	SE: 520-522, 524-527, 535 #28-#31, 547 #12-#17 <i>Extra Practice Lesson</i> 12-2 593, <i>Lesson</i> 12-3 594 <i>Mixed Problem Solving</i> 607 #3-#5 TWE: A 522, B 520
PO 2. Measure to the appropriate degree of accuracy.	SE: 542-545, 548 #24-#28, 549 #14, #15 <i>Extra Practice Lesson</i> 12-6 595 <i>Mixed Problem Solving</i> 607 #14, #15 TWE T 543
PO 3. Convert a measurement from US customary to metric, and vice versa.	SE: A conversions table is listed on the back inside cover.

CONTENT STANDARDS	PAGE REFERENCES
PO 4. Solve problems involving the circumference of a circle.	SE: 275-277, 280 #66-69, 281 #24 <i>Extra Practice Lesson 6-9 579</i> <i>Hands-on Lab 274</i> <i>Mixed Problem Solving 601 #16, #17</i> <i>Standardized Practice Test 283 #16, 366 #4</i> TWE: A 276, T 276
PO 5. Solve problems involving the area of a circle.	SE: 493-495, 499-500 #4, #8, #9, 503 #10, #11, #13, #14 <i>Extra Practice Lesson 11-6 591, Lesson 11-7 592 #5-#7, #9</i> <i>Mixed Problem Solving 606 #8, #11</i> TWE: A 495, DI 493, T 494, 502
PO 6. Solve problems for the areas of parallelograms, triangles, and circles.	SE: 483-485, 489-491, 496-497, 498-500, 501-503 <i>Extra Practice Lesson 11-7 592</i> <i>Mixed Problem Solving 606 #9, #10</i> <i>Standardized Practice Test 509 #15-#18</i> TWE: B 498, T 499
PO 7. Identify polygons having the same perimeter or area.	SE: 273 #29 <i>Hands-On Mini Lab 483</i> TWE: A 484 DI 485
PO 8. Compare estimated to actual lengths based on scale drawings or maps.	SE: 304-308, 327 #32-#35 <i>Extra Practice Lesson 7-4 581</i> <i>Mixed Problem Solving 602 #7, #8</i> <i>Standardized Test Practice 330-331 #8, #18b</i> <i>Spreadsheet Investigation 309</i> TWE: DI 304 T 305-306 A 308
Strand 5: Structure and Logic	
Concept 1: Algorithms and Algorithmic Thinking Use reasoning to solve mathematical problems in contextual situations.	
PO 1. Discriminate necessary information from unnecessary information in a given grade level appropriate word problem.	SE: 6-9 <i>Problem-Solving Strategy 252-253</i>
PO 2. Analyze algorithms for computing with fractions.	SE: 244-247, 248-251, 254-257, 264-266, 278-280 #7-#37, #45-#53 <i>Extra Practice Lesson 6-2 577, Lesson 6-3 577, Lesson 6-4 578, Lesson 6-6 578</i> TWE: NS 256

CONTENT STANDARDS	PAGE REFERENCES
Concept 2: Logic, Reasoning, Arguments, and Mathematical Proof Evaluate situations, select problem-solving strategies, draw logical conclusions, develop and describe solutions and recognize their applications.	
PO 1. Solve a logic problem using multiple variables.	SE: <i>Problem Solving Strategy</i> 444-445 Here students solve problems of varying complexity using logical reasoning.

Codes Used for TWE Pages

A	Assess
B	Bellringer
DI	Daily Intervention
NS	Number Sense
T	Teach
TI	Tips for New Teachers