GLENCOE CORRELATION

MATHEMATICS: APPLICATIONS AND CONCEPTS COURSES 1, 2, and *3*

NEBRASKA

Mathematics Standards for Grade 8

STANDARDS	PAGE REFERENCES		
	COURSE 1	***COURSE 2***	***COURSE 3***
8.1 Numeration/Number Sense			
8.1.1 By the end of eighth grade, students will recognize natural numbers, whole numbers, integers, and rational numbers.	SE: 294 *Prerequisite Skills* 586	SE: 106, 230 #44-#49 *Key Concept* 229 TWE: I 229 #4	SE: 125-129, 130 #18-#23, 147 #25-#30, 149 #9-#11 TWE: A 129 B 62, 125 DI 126
8.1.2 By the end of eighth grade, students will determine equivalences among fractions, decimals, and percents. Example indicators: • Find the equivalencies among fractions, decimals, and percents. • Solve problems with appropriate equivalencies.	SE: 202-205, 206-209, 400-403, 404-406 *Extra Practice Lesson 5-6* 604, *Lesson 5-7* 605 *Key Concept* 415 *Mixed Problem Solving* 628 #11-#15, 633 #8-#11 *Standardized Test Practice* 215 #15-#20	SE: 210-213, 216-219, 220-223, 233-234 #28-#57, 312-315, 316-318 *Concept Summary* 228 *Extra Practice Lesson 5-4* 575, *Lesson 5-5* 575, *Lesson 5-6* 576	SE: 62-66, 67-70, 75 #41, 86 #4-#6, 108 #9-#20, 111 #3-#8, 210-214, 219 #42-#46 TWE: A 214 DI 211
8.1.3 By the end of eighth grade, students will write and use numbers in expanded exponential form and scientific notation. Example indicators: • Write numbers in expanded form using exponential notation. • Express small and large numbers using scientific notation.	SE: 136, 138 #36-#41 *Extra Practice Lesson 4-1* 601 #20-#28 *Standardized Test Practice* 171 #13 TWE: A 138 T 136 #5	SE: 43-45, 48 #53-#60, 49 #22-#24 *Extra Practice Lesson 1-9* 566 *Mixed Problem Solving* 596 #15 *Standardized Test Practice* 50-51 #9, #16, 100 #3, 146 #13 TWE: DI 43 T 44	SE: 98-101, 104-107, 110 #50-#65, 111 #21-#24, 112 #7, #9 TWE: A 101, 107 DI 99, 105 NS 106

STANDARDS	PAGE REFERENCES		
	COURSE 1	***COURSE 2***	***COURSE 3***
8.1.4 By the end of eighth grade, students will identify and display numbers including prime and composite, factors and multiples, divisibility, powers, and properties. Example indicator: • Properties of numbers may include, but not be limited to, order of operations, commutative, associative, distributive, identity, and inverse.	SE: 10-13, 14-17, 18-21, 24-27, 194-197, 333-335, 339-342, 344-347, 370 #7-#14 *Hands-On Lab* 332	SE: 10-13, 197-200, 203-206, 224-226 *Hands-On Lab* 196 *Key Concept* 30, 31,121, 258 *Prerequisite Skills* 554	SE: 11-15, 31 #53, 32 #1, 58 #3, 608, 609, 612 *Key Concept* 25 TWE: A 15 DI 12
8.2 Computation/Estimation			
8.2.1 By the end of eighth grade, students will add, subtract, multiply, and divide decimals and proper, improper, and mixed fractions with uncommon and common denominators with and without the use of technology.	SE: 121-124, 141-143, 152-155, 228-231, 235-238, 240-243, 244-247, 261-264, 265-267, 272-275	SE: 244-247, 248-251, 254-257, 264-266, 278-279 #13-#53, 281 #6-#15 *Prerequisite Skills* 559, 560, 562 *Problem-Solving Strategy* 253 #4	SE: 71-75, 76-80, 82-85, 88-91, 95 #37-#40, 101 #49-#52 TWE: A 75, 91 DI 77 NS 79
8.2.2 By the end of eighth grade, students will identify the appropriate operation and do the correct calculations when solving word problems.	SE: *Problem-Solving Strategy* 126 #4-#8, #10-#16, 157 #7-#9, #11-#14, 193 #8, #10-#12, #14, 227 #5, #6, #9-#12, 281 #7, #8, #10, 315 #7, #8, #10, 359 #6-#9, 414 #7-#11, 449 #7-#9, #11, #12, #14, 489 #10, #13	SE: *Mixed Problem Solving* 598 #9-#16, 599 #2, #3, #5, #6, 600 #4, #5 *Problem-Solving Strategy* 165 #4, #7, #11, 202 #8, #10, #11, 253 #9, #11, 303 #10, 339 #6, 445 #11, 497 #6-#8, 519 #7, #8, #11	SE: 39-42, 43-44, 48 #37-#41, 51 ex 3, 53 #40-#44, 56 #52, 57 #29, 59 #17 TWE: B 39 TNT 40

STANDARDS	PAGE REFERENCES		
	COURSE 1	***COURSE 2***	***COURSE 3***
8.2.3 By the end of eighth grade, students will solve problems involving whole numbers, integers, and rational numbers (fractions, decimals, ratios, proportions, and percents) with and without the use of technology. Example indicators: • Use proportions to solve scale-model problems with fractions and decimals. • Problems should be of increasing level of difficulty and involve real-life situations.	SE: 391-392 *Hands-On Lab* 394 *Mixed Problem Solving* 626, 627, 628, 629, 630, 631, 633 *Spreadsheet Investigation* 390	SE: 304-308 *Extra Practice Lesson 7-4* 581 *Mixed Problem Solving* 598, 600, 601, 602, 603 *Spreadsheet Investigation* 309	SE: 184-187, 206-209, 233 ex 4, 234 #26-#27, 237 ex 2, 238 ex 3-ex 4, 242 ex 3, 244 #26, 247 #38 TWE: B 206
8.2.4 By the end of eighth grade, students will apply the order of operations to solve problems with and without the use of technology. Example indicator: • Evaluate all types of numerical expressions, including grouping symbols and exponents.	SE: 24-27, 28-31, 44 #32-#47, 45 #14-#16 *Extra Practice Lesson 1-5* 595, *Lesson 1-6* 595 *Mixed Problem Solving* 624 #8, #9 *Standardized Test Practice* 46-47 #8-#10, #19-#21 TWE: B 24 DI 25	SE: 14-17, 18-21, 47 #17-#31 *Extra Practice Lesson 1-3* 564, *Extra Practice Lesson 1-4* 565 *Mixed Problem Solving* 596 #5 *Standardized Test Practice* 51 #13, 100-101 #2, #9 TWE: B 14 T 15	SE: 11-12, 14 #14-#39, 21 #64-#66, 27 #47, 32 #4-#5, 55 #13-#18, 57 #3-#5, 58 #2 *Extra Practice Lesson 1-2* 616 #1-#17 TWE: DI 12

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	COURSE 1	***COURSE 2***	***COURSE 3***
8.2.5 By the end of eighth grade, students will apply strategies of estimation when solving problems with and without the use of technology. Example indicators: • Properly round to an appropriate place value if context permits. • Perform estimation prior to calculation. • Without a calculator, estimate square roots of whole numbers up to one hundred to the nearest whole number. • Use compatible numbers to perform mental math. • Use estimation to check reasonableness of an answer.	SE: 111-113, 116-119, 135, 145, 146, 219-222, 223-225 *Hands-On Lab* 218 *Prerequisite Skills* 592 *Problem-Solving Strategy* 156-157	SE: 240-243, 334-337, 475-477 *Extra Practice Lesson 6-1* 577, *Lesson 8-1* 582 *Mixed Problem Solving* 601 #1, 603 #1, #2 *Prerequisite Skills* 557, 558 *Problem-Solving Strategy* 339 #5, #7, #10, #12	SE: 120-122, 130 #11-#17, 136 #42, 147 #16-#24, 149 #6-#8, 150 #5, 228-231, 600-601 TWE: A 122 B 228
8.3 Measurement			
8.3.1 By the end of eighth grade, students will select measurement tools and measure quantities for temperature, time, money, distance, angles, area, perimeter, volume, capacity, and weight/mass in standard and metric units at the designated level of precision.	SE: 465-468, 470-473, 476-479, 484-487, 494-497 *Hands-On Lab* 464, 474-475, 480-481 *Spreadsheet Investigation* 469 *The Game Zone* 482	SE: 542-545 *Hands-On Lab* 412 TWE: T 543	SE: 314-318, 326-329, 335-339, 342-345, 358-362 TWE: A 318, 329, 344 B 335, 342

STANDARDS	PAGE REFERENCES		
	COURSE 1	***COURSE 2***	***COURSE 3***
8.3.2 By the end of eighth grade, students will convert units within measurement systems using standard and metric, given conversion factors. Example indicators: • Convert between various units of area and various units of volume (square foot to square yards and cubic decimeters to liters, etc.). • Check solutions to problems using unit analysis (feet/second to miles/hour).	SE: 465-468, 470-472, 490-493, 498-500 #10-#15, #20-#28, #42-#52, 553 #16 *Extra Practice Lesson 12-1* 618 #1-#12, *Lesson 12-2* 618, *Lesson 12-5* 619 *Mixed Problem Solving* 635 #1, #2, #4, #5, #12, #13 *Standardized Test Practice* 502-503 #8-#10, #19, #20	SE: 38-41, 267-269, 273 #30-#32, 522 #16, #17 *Extra Practice Lesson 1-8* 566, *Lesson 6-7* 579 *Mixed Problem Solving* 596 #13, #14, 601 #10, #11 TWE: B 39, 267	SE: 73 ex 5, 78 ex 6, 604-605, 606-607
8.4 Geometry/Spatial Concepts			
8.4.1 By the end of eighth grade, students will identify, describe, compare, and classify two- and three-dimensional geometric figures such as plane figures like polygons and circles; solid figures like prisms, pyramids, cones, spheres, and cylinders; and lines, line segments, rays, angles, parallel and perpendicular lines.	SE: 161, 506-509, 515-517, 522-525, 564-566 *Hands-On Lab* 513-514 TWE: A 164, 525 DI 507, 564	SE: 275-277, 413-415, 422-425, 428-431, 434-437, 446-450, 520, 524 *Hands-On Lab* 417 *The Game Zone* 529	SE: 263, 272-275, 282 #27-#29, 284 #1-#2, 307 #19-#20, 331-334 *The Game Zone* 285 TWE: A 275 DI 263, 273
8.4.2 By the end of eighth grade, students will use geometric properties, the Pythagorean theorem, and the relationships of congruence, similarity, and symmetry.	SE: 522-525, 528-531, 534-536 *Extra Practice Lesson 13-5* 621, *Lesson 13-4* 621 *Mixed Problem Solving* 636 #11-#14 TWE: DI 534 T 529, 535 TI 528	SE: 422, 428-431, 434, 440-443, 456-459, 479-482 *Extra Practice Lesson 11-3* 590 *Hands-On Lab* 426-427, 460-461, 478	SE: 132-136, 137-140, 279-282, 286-289, 294 #33-#36 *Spreadsheet Investigation* 356-357 TWE: A 136, 289 DI 138, 287

STANDARDS	PAGE REFERENCES		
	COURSE 1	***COURSE 2***	***COURSE 3***
8.4.3 By the end of eighth grade, students will use formulas to solve problems involving perimeter and area of a square, rectangle, parallelogram, trapezoid and triangle, as well as the area and circumference of circles.	SE: 39-41, 158-160, 161-164, 546-549, 551-554, 556-559 *Hands-On Lab* 332, 464, 550, 555	SE: 270-273, 275-277, 483-485, 489-492, 493-495, 498-500 *Hands-On Lab* 274, 488 *Mixed Problem Solving* 601 #12-#17, 606 #5-#10	SE: 314-318, 319-323, 329 #24-#25, 334 #28, 339 #39, 340 #3-#4, 363 #10-#13, 364 #14-#17 TWE: A 318, 323
8.4.4 By the end of eighth grade, students will solve problems given formulas for volume and surface area of rectangular prisms, cylinders, and cones.	SE: 570-573, 575-578, 580 #16-#19, 581 #11-#15 *Extra Practice Lesson 14-5* 623, *Lesson 14-6* 623 *Mixed Problem Solving* 637 #12-#16 *Standardized Test Practice* 583 #19, #20 TWE: T 571, 576	SE: 520-522, 524-527, 532-535, 538-541 *Hands-on Lab* 530-531, 536-537 *Mixed Problem Solving* 607 #3-#13 *Spreadsheet Investigation* 523 TWE: A 527, 535	SE: 335-339, 340 #8, 342-345, 347-351, 352-355 TWE: A 344 B 335, 342 DI 348, 353
8.4.5 By the end of eighth grade, students will apply transformations to two- and three-dimensional geometric figures. Example indicator: • Draw geometric figures using translations or slides, rotations or turns, reflections or flips, and scale.	Examples for two-dimensional figures are found on pages: SE: *Hands-On Lab* 532-533, 537 TWE: A 536	SE: 451-454, 456-459, 464 #26-#31 *Extra Practice Lesson 10-8* 589, *Lesson 10-9* 589 *Hands-On Lab* 460-461, 536-537 *Mixed Problem Solving* 605 #11, #12 *Spreadsheet Investigation* 455, 523	SE: 290-294, 296-299, 300-303, 308 #29-#34, 309 #17-#19, 311 #16-#17, 318 #31-#33 TWE: A 294, 299, 303
8.4.6 By the end of eighth grade, students will use geometric terms and representations to describe the physical world.	SE: *Problem-Solving Strategy* 520-521 #1-#4, 568-569 #1-#4 TWE: B 506, 510, 515, 522, 556, 564 DI 507 TI 522	SE: 490 ex 3 TWE: A 415 B 413, 434, 440, 456 DI 441, 499 PS 465 T 490 #3	SE: 274 #2, 279, 284 #8, 331, 333 #2 TWE: A 289 B 372 DI 257, 263, 287

STANDARDS	PAGE REFERENCES		
	COURSE 1	***COURSE 2***	***COURSE 3***
8.5 Data Analysis, Probability, and Statistical Concepts			
8.5.1 By the end of eighth grade, students will collect, construct, and interpret data displays and compute mean, median, and mode. Example indicator: • Select appropriate representations of data when constructing data displays (graphs, tables, or charts).	SE: 76-78, 80-83, 86-89 *Graphing Calculator Investigation* 84-85 *Spreadsheet Investigation* 60-61, 79 *The Game Zone* 71 TWE: B 50, 80 DI 51	SE: 57 #15, 69-72, 79 #22, 91 #2 *Hands-On Lab* 73, 301, 344 TWE: A 63 B 60, 64	SE: 420-424, 426-429, 430-433, 435-438, 459 #15-#17 *Graphing Calculator Investigation* 425 *Spreadsheet Investigation* 439 TWE: A 429, 433 B 430
8.5.2 By the end of eighth grade, students will read and interpret tables, charts, and graphs to make comparisons and predictions.	SE: 50-51, 56-59, 62-65, 66-69, 72-75, 86-89, 90-92 #8-#13, #22, #23, 322 ex 4, 5, 438-441 *Standardized Test Practice* 94-95 #3-#6, #10, #14, #15	SE: 54-57, 60-63, 64-67, 76-79, 80-83, 85-89, 345-347 *Problem-Solving Strategy* 58, 59 #3, #4, #6 *Spreadsheet Investigation* 90-91	SE: 420-424, 426-429, 440 #9-#10, 449 #15-#18, 450-453, 461 #3-#5 *Hands-On Lab* 434 TWE: B 426
8.5.3 By the end of eighth grade, students will conduct experiments or simulations to demonstrate theoretical probability and relative frequency. Example indicator: • Compare the results of a simulation (relative frequency) to the theoretical probability (a three color spinner or a coin).	SE: *Hands-On Lab* 426-427, 432 TWE: TI 439	SE: 393-396, 404 #36-#39 *Extra Practice Lesson 9-6* 586 *Hands-On Lab* 397 *Problem-Solving Strategy* 391, 392 #3, #4, #9 TWE: A 392, 395 B 393 DI 394	SE: 400-403, 412 #42-#45, 413 #17-#19 *Graphing Calculator Investigation* 404-405 TWE: A 377, 403 DI 375, 400

STANDARDS	PAGE REFERENCES		
	COURSE 1	***COURSE 2***	***COURSE 3***
8.5.4 By the end of eighth grade, students will identify statistical methods and probability for making decisions. Example indicators: • Identify the use of appropriate sampling techniques. • Identify the use of appropriate charts and graphs. • Identify the use of measures of central tendency (mean, median, and mode) appropriately.	SE: 76-78, 80-83, 438-441, 457 #16 *Hands-On Lab* 437 *Problem-Solving Strategy* 448-449 #1-#6 *Spreadsheet Investigation* 79 TWE: A 441 DI 438 TI 439	SE: 69-72, 92-95, 345-347, 370-373, 398-401 *Hands-On Lab* 73, 301, 344 *The Game Zone* 75 TWE: PS 99	SE: 406-409, 412 #46-#49, 414 #7, 435-439, 450-453, 460 #26-#30 TWE: A 409, 453 DI 407, 451
8.6 Algebraic Concepts			
8.6.1 By the end of eighth grade, students will demonstrate knowledge and use of the one- and two-dimensional coordinate systems. Example indicators: • Order numbers on a number line. • Graph ordered pairs on a coordinate plane. • Generate a table of ordered pairs to graph an equation in two variables.	SE: 295, 296-298 #6-#9, #23-#36, #39, #53, 320-323, 366-369 *Extra Practice Lesson 8-1* 609 #3-#8, *Lesson 8-6* 611, *Lesson 9-7* 613 #1-#6 TWE: A 369 T 321-322 #3, #5, 367	SE: 26 #32-#35, 106-108, 112-115, 174-175 #11-#19, #28-#31, #42, 178-181, 182-185, 447 #30 *Extra Practice Lesson 3-3* 570, *Lesson 4-5* 573 #1-#15, *Lesson 4-6* 573 #3-#14	SE: 18 ex 3-ex 5, 518 ex 3, 519 #6-#8, 522-525, 529 #32-#35, 553 #20-#24 TWE: A 525 B 522 DI 523

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	COURSE 1	***COURSE 2***	***COURSE 3***
8.6.2 By the end of eighth grade, students will apply algebraic concepts and operations to solve linear equations and word problems. Example indicators: • Solve multi-step equations with one variable. • Use order of operations to evaluate algebraic expressions for given replacement values of the variables. • Recognize and apply commutative, associative, distributive, inverse, and identity properties, and the properties of zero.	SE: 28-31, 333-336, 355-357 *Extra Practice Lesson 1-6* 595, *Lesson 9-1* 611, *Lesson 9-5* 612 *Mixed Problem Solving* 624 #8-#13, 632 #2-#13 *Problem-Solving Strategy* 358-359 #1-4, #6, #11, #12 *Standardized Test Practice* 375 #6-#8, #17, #18, #20	SE: 20 #14-#34, 30-33, 166-167 *Extra Practice Lesson 1-4* 565, *Lesson 4-4* 573 *Key Concept* 121, 258 *Mixed Problem Solving* 599 #5 *The Game Zone* 29, 171	SE: 12 ex 2-ex 3, 14 #28-#39, 32 #5, 474-477, 484-487 *The Game Zone* 491 *Hands-On Lab* 482-483 TWE: A 477 B 474 DI 475
8.6.3 By the end of eighth grade, students will describe and represent relations, using tables, graphs, and rules. Example indicator: • Use variables to recognize and describe patterns.	SE: 323 #36-#39, 362-365, 366-369, 372 #49-#54, 373 #20-#25 *Extra Practice Lesson 9-6* 613, *Lesson 9-7* 613 *Hands-On Lab* 360-361 *Mixed Problem Solving* 632 #12-#15 *Standardized Test Practice* 374-375 #9, #19, #21	SE: 177-181, 185 #24-#26, 188 #54-#62, 226 #21 *Extra Practice Lesson 4-6* 573 *Hands-On Lab* 176 *Mixed Problem Solving* 599 #8-#12 *Standardized Test Practice* 190-191 #9, #20, 237 #14 TWE: T 178-179	SE: 517-520, 560-563, 565-568 *Graphing Calculator Investigation* 564 *Hands-On Lab* 521

Codes Used for TWE Codes

Course 1

A	Assess
B	Bellringer
DI	Differentiated Instruction
T	Teach
TI	Tips for New Teachers

Course 2

A	Assess
B	Bellringer
DI	Differentiated Instruction
I	In-Class Example
PS	Portfolio Suggestion
T	Teach

Course 3

A	Assess
B	Bellringer
DI	Daily Intervention
NS	Number Sense
TNT	Tips for New Teachers