GLENCOE CORRELATION
PRE-ALGEBRA
SOUTH DAKOTA
Mathematics Standards Grade 8

STANDARDS	PAGE REFERENCES
EIGHTH GRADE ALGEBRA STANDARDS	
1. apply properties of equalities and inequalities using algebraic techniques.	SE: 23-25, 29, 345-349 TWE: IE 24, 29, 30, 346
2. use equalities and inequalities to life-related situations.	SE: 340-341, 343 #41, #42, 348 #44 TWE: DI 341 OA 344
3. use properties to justify the steps to expand, combine, or simplify polynomial expressions.	SE: 674-677, 678-681, 683-686 TWE: IE 675, 679, 684
4. analyze products of binomials using area models, e.g., (x + 3)(x – 2).	SE: 671, 675, 683, 686 #34 *Algebra Activity* 682
5. analyze linear equations to create generalizations.	SE: 375-379, 381-385 TWE: IE 376, 382
6. solve and graph equations and inequalities.	SE: 120-124, 126-130 TWE: IE 121-122, 127
7. represent solutions to open sentences and inequalities graphically.	SE: 342-344, 346-347, 352, 355 TWE: IE 342, 356
8. describe and represent relations from collected data using tables, graphs, and rules.	SE: 35-37, 50, 51 #21, #22 TWE: IE 35
9. solve multi-step linear equations using strategies involving inverse operations and integers.	SE: 120-124, 126-130 TWE: IE 121, 122, 127
10. determine slope from a graph, ordered pairs, or an equation.	SE: 387-391, 429 #10 Algebra Activity 286 TWE: DI 388 IE 389
11. identify x and y intercepts from an equation or graph.	SE: 381-385, 404-408 TWE: IE 382, 405, 406 DI 405
12. generalize the impact of coefficients and constants of linear equations.	SE: 103-107, 122 TWE: IE 104 DI 104
13. identify various phenomena that represents different families of graphs.	SE: 692-696 *Graphing Calculator Investigation* 697 TWE: DI 693, 694, 695
14. solve word problems involving direct and inverse variation.	SE: 687-691, 700 TWE: IE 688, 689 DI 688
EIGHTH GRADE GEOMETRY STANDARDS	
1. use given assumptions to determine properties of figures and relationships between figures.	SE: 471-475, 486, 500-504, 545 TWE: IE 472, 473, 501, 502
2. use visual perspectives to analyze geometric problems.	SE: 558-561 TWE: DI 557, 558
3. describe, classify, and construct plane and solid figures, e.g., prisms, pyramids, cylinders, and cones.	SE: 513-517, 527-531, 556-561 *Reading Mathematics* 526 TWE: IE 514, 528

STANDARDS	PAGE REFERENCES
4. use the Pythagorean Theorem to solve problems.	SE: 460-464, 469 #32, 475 #26, 485 *Algebra Activity* 458-459 TWE: IE 461 DI 463
5. use various geometric properties, formulas, and relationships to solve problems involving three-dimensional shapes.	SE: 584-588, 596-598 TWE: IE 585 DI 586
6. use given top, side, or bottom views of objects to construct three-dimensional models.	SE: 558-559 *Geometry Activity* 554-555
7. construct three-dimensional figures from two-dimensional views.	SE: 558-559 *Geometry Activity* 554-555
8. develop two-dimensional representations that demonstrate various perspectives of three-dimensional objects.	SE: 558-559 *Geometry Activity* 554-555
9. determine volume and surface area of three-dimensional models.	SE: 563-567, 568-572, 573-577, 578-582 TWE: IE 564, 569, 570, 574, 579
EIGHTH GRADE MEASUREMENT STANDARDS	
1. apply proportional reasoning to solve measurement problems.	SE: 472-475, 481 #46 TWE: IE 473
2. design procedures for measuring various attributes of complex figures.	SE: 539-543, 548 TWE: IE 540, 541 DI 540 OA 543
3. develop and use standard formulas for surface area and volume.	SE: 447-451, 132-136, 563-567, 568-572, 573-577 *Spreadsheet Investigation* 137 TWE: DI 448, 449 IE 448, 449, 564, 565, 574
4. estimate and determine volume using standard and nonstandard units.	SE: 563-567, 568-571 TWE: IE 564, 565, 569, 570 DI 570
5. use degrees as a unit of measure for angles and circle problems.	SE: 447-451, 538 TWE: IE 448 DI 449
6. develop rules to use when converting between different measurement systems.	SE: 118 #48, 168, 263, 272, 397 #19, 566 TWE: IE 272
7. use the most appropriate tool to measure volume in customary and metric systems.	SE: 719-721
8. determine precision, accuracy, and measurement errors in a variety of situations.	SE: 590-594, 598 *Reading Mathematics* 589 TWE: IE 591 DI 591 OA 594
9. apply mathematical techniques in situations that defy direct measurement, e.g., measuring the height of a tree, distance to the moon.	SE: 132-136, 472-473, 477-481, 539-543, 548, 520-525 *Spreadsheet Investigation* 137 *Algebra Activity* 518-519 *Geometry Activity* 583 TWE: IE 534-535, 540-541, 579-580
10. solve problems involving two- and three-dimensional measurement situations in everyday contexts.	SE: 524 #19, #24, #25, 584-588 TWE: IE 522, 586

STANDARDS	PAGE REFERENCES
11. use volume and surface area formulas to solve problems.	SE: 564, 567, 571, 575, 581 #20 TWE: IE 570, 575, 579
EIGHTH GRADE NUMBER SENSE STANDARDS	
1. represent numbers in a variety of equivalent forms, e.g., radicals, absolute value.	SE: 200-204, 205-209, 281-284 TWE: IE 282, 283
2. describe relationships between the subsets of the real number system.	SE: 441-445, 451 #39, #40, #41, #42 TWE: IE 442 DI 442
3. explain the use of irrational numbers, e.g., pi.	SE: 206, 441, 533-538
4. use concrete representations of real numbers in daily situations.	SE: 208 #30, 215, 219, 223, 235 #33 TWE: DI 234
5. simplify numerical expressions involving exponents.	SE: 153-157, 181-185, 190 TWE: IE 154, 182
6. use proportions to solve scale-model problems with fractions and decimals.	SE: 276-280, 317 TWE: IE 277 OA 280
7. determine a relative position of a square root on a number line.	SE: 436-440 TWE: OA 440
8. read, write, and compute within any subset of real numbers.	SE: 200-204, 205-209, 281-285, 441-445 TWE: IE 216, 282, 283, 442, 443
9. read, write, and explain exponential notation.	SE: 186-190, 194, 195 #26 TWE: DI 187 IE 187
10. use estimation strategies to predict results and help solve multi-step problems involving real numbers.	SE: 25-26, 29, 31, 82, 99, 127, 586, 684
11. formulate rules to solve practical problems involving real numbers.	SE: 6-8, 47-48, 51, 148-149 TWE: IE 149
12. use properties to justify steps when simplifying expressions.	SE: 23-26, 49, 51 #12, 66, 75 TWE: IE 24
13. create algorithms to determine solutions for equations and inequalities.	SE: 110-114, 115-119, 126-130, 244-245 TWE: IE 121
14. formulate counter-examples to disclaim given assertions.	SE: 25, 26 #10, 27 #48, 208 #44, #45, #46, 444 #43, 510 #21
15. explain the magnitude of radicals, numbers expressed with exponents, and the absolute values of numbers.	SE: 153-157, 436-440
16. associate mathematical symbols with word names of real numbers.	SE: 436, 533
17. explain the effects of operations on the magnitude of real numbers.	SE: 153-157, 169-173, 175-179 *Reading Mathematics* 174 TWE: IE 170, 176
EIGHTH GRADE PATTERNS, RELATIONS, AND FUNCTIONS STANDARDS	
1. construct problems involving dependent and independent variables.	SE: 378 #11, #28, #29, 383, 385 TWE: IE 382
2. represent and interpret quantitative relationships graphically.	SE: 33-38, 40-44, 370, 376-377 *Algebra Activity* 39 TWE: IE 376
3. understand the relationship of solutions in one variable, the x-intercept of the related linear equation in two variables, and the related situations from which each arise.	SE: 381-385, 397 #27, 404-408 TWE: IE 382, 405 OA 385

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4. create rules to explain the relationship between numbers when a change in the first variable affects the second variable.	SE: 38 #48, 370-373 *Algebra Activity* 368 TWE: IE 370
5. represent situations with patterns and relations to find exact or approximate solutions to problems.	SE: 249-252, 258 *Algebra Activity* 253 TWE: IE 250
6. investigate and describe functional relationships of geometric figures.	SE: 471-475, 500-504 TWE: IE 472, 473, 501, 502
7. describe and represent relations using tables, graphs, and rules.	SE: 35-37, 50, 51 #21, #22 TWE: IE 35
8. create and solve problems using proportions, formulas, and functions.	SE: 460-464, 466-470, 472-475, 477-481 TWE: IE 461, 467, 473, 478
9. identify, describe, represent, extend, and create exponential patterns, e.g., the accumulation of a unit of money (penny) over time.	SE: 249-252, 258, 259 #29 *Algebra Activity* 253 TWE: IE 250
10. identify the special characteristics of relationships including maximum and minimum values.	SE: 695 #25, #26
11. differentiate between continuous and discrete functions.	See appropriate Glencoe textbook.
12. use exponential growth or decay to explore exponential functions.	SE: 178 #44 *Algebra Activity* 180
13. explain the concept of limit using various representations, e.g., 1 + ½ + ¼ + . . .	See appropriate Glencoe textbook.
EIGHTH GRADE STATISTICS & PROBABILITY STANDARDS	
1. explain impact of sampling bias on data and describe procedures for selecting unbiased samples.	SE: 630-633, 661 *Algebra Activity* 309 *Reading Mathematics* 634 TWE: IE 631 DI 632
2. create and solve problems involving the mean, median, mode and range of a set of data.	SE: 82, 238-242, 606-611, 735 *Graphing Calculator Investigation* 243 TWE: IE 239-240
3. consider effects on reliability of sampling procedures and of missing or incorrect information.	SE: 239, 241 TWE: IE 239
4. use a variety of visual representations to display data to make comparisons, predictions, and inferences.	SE: 606-611, 612-616, 617-621, 623-628 TWE: IE 618, 619
5. evaluate the validity of claims based on statistical data.	SE: 630-633 *Reading Mathematics* 634 TWE: IE 311
6. establish appropriate sample spaces to apply principles of probability for simple and compound chance events.	SE: 310-314, 635-636, 646-647 TWE: IE 311
7. express theoretical probability of experimental outcomes.	SE: 310-314 *Algebra Activity* 656-657
8. estimate probability of simple and compound events using a series of trials.	SE: 311, 650-655 *Algebra Activity* 39, 237, 253, 656-657 *Graphing Calculator Investigation* 315

STANDARDS	PAGE REFERENCES
9. explain the difference between independent and dependent events and the impact on results in specific probability situations.	SE: 650-655, 662 TWE: IE 651, 652 DI 651
10. determine and interpret the probability of a given event occurring from a given sample space.	SE: 646-649 TWE: IE 647

Codes Used for TWE Pages

DI	Daily Intervention
IE	In-Class Examples
OA	Open-Ended Assessment