

GLENCOE CORRELATION
ALGEBRA 1
ILLINOIS
 Learning Standards for Mathematics
 Middle/Jr. High

OBJECTIVES	PAGE REFERENCES
STATE GOAL 6: Demonstrate and apply a knowledge and sense of numbers, including numeration and operations (addition, subtraction, multiplication, division), patterns, ratios and proportions.	
A. Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.	
6.A.3 Represent fractions, decimals, percentages, exponents and scientific notation in equivalent forms.	SE: 255 #1-8, 410, 420 Ex#4, 425-426, 427 Ex#3, 753 #11-18, 776 #67-75, 802-805 <i>Graphing Calculator Investigation</i> 418, 556
B. Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.	
6.B.3a Solve practical computation problems involving whole numbers, integers and rational numbers.	SE: 73-74, 77 #57-58, 79, 80 Ex#4, 81 #15, 82 #50, 84, 85 Ex#4, 87 #56-57, 798-805
6.B.3b Apply primes, factors, divisors, multiples, common factors and common multiples in solving problems.	SE: 474-477, 478 #63-64, 479 #70, 481-483, 489-492, 493 #54, 495-498, 501-504 <i>Algebra Activity</i> 480, 487-488
6.B.3c Identify and apply properties of real numbers including pi, squares, and square roots.	SE: 103-106, 108 #51, 114 #60-69, 191 #1-4, 420 Ex#5, 508-511, 512 #16, 590 #42-43, 591 #45-47, 603 #64-69
C. Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.	
6.C.3a Select computational procedures and solve problems with whole numbers, fractions, decimals, percents and proportions.	SE: 9 #43, 68, 136 Ex#2, 155-157, 172 Ex#2, 478 #30-31, 776 #67-75, 798-799, 804-805 <i>Reading Mathematics</i> 165
6.C.3b Show evidence that computational results using whole numbers, fractions, decimals, percents and proportions are correct and/or that estimates are reasonable.	SE: 17 Ex #4, 50-52, 73-78, 147 #51-52, 160-161, 357 #52-53, 782-783, 784 Ex#4, 792, 802-803
D. Solve problems using comparison of quantities, ratios, proportions and percents.	
6.D.3 Apply ratios and proportions to solve practical problems.	SE: 155-157, 159 #35, 605-607, 609 #46-47, 616-618, 619 #27, 623-625, 629 #61-62 <i>Algebra Activity</i> 622, 626
STATE GOAL 7: Estimate, make and use measurements of objects, quantities and relationships and determine acceptable levels of accuracy.	
A. Measure and compare quantities using appropriate units, instruments and methods.	
7.A.3a Measure length, capacity, weight/mass and angles using sophisticated instruments (e.g., compass, protractor, trundle wheel).	SE: 147 #52 <i>Algebra Activity</i> 271, 299, 626 TWE: DI 266, 618
7.A.3b Apply the concepts and attributes of length, capacity, weight/mass, perimeter, area, volume, time, temperature and angle measures in practical situations.	SE: 9 #43, 108 #70-73, 124 #21, 131 Ex#6, 133 #56-57, 136 Ex#4, 139 #46-49, 505 #50 <i>Algebra Activity</i> 416 <i>Reading Mathematics</i> 165

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B. Estimate measurements and determine acceptable levels of accuracy.	
7.B.3 Select and apply instruments including rulers and protractors and units of measure to the degree of accuracy required.	SE: 147 #52, 808-809 <i>Algebra Activity</i> 271, 501, 626
C. Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.	
7.C.3a Construct a simple scale drawing for a given situation.	SE: 201 #9-10, 492 Ex#6 <i>Algebra Activity</i> 416 TWE: ICE 491 #6 OEA 196
7.C.3b Use concrete and graphic models and appropriate formulas to find perimeters, areas, surface areas and volumes of two- and three-dimensional regions.	SE: 31 #70-72, 34 #15, 169 #41, 414 #43-48, 435 #55-56, 505 #50, 609 #48, 670 #39, 813-817
STATE GOAL 8: Use algebraic and analytical methods to identify and describe patterns and relationships in data, solve problems and predict results.	
A. Describe numerical relationships using variables and patterns.	
8.A.3a Apply the basic properties of commutative, associative, distributive, transitive, inverse, identity, zero, equality and order of operations to solve problems.	SE: 11-13, 21-23, 14 #40, 24 #34-36, 26-27, 32-34, 334 Ex#4, 642-644 <i>Algebra Activity</i> 28, 207
8.A.3b Solve problems using linear expressions, equations and inequalities.	SE: 118-123, 124 #22, 133 #56-57, 352-355, 366-371, 373 #46-47, 376-379, 380 #31 <i>Algebra Activity</i> 127 <i>Graphing Calculator Investigation</i> 358
B. Interpret and describe numerical relationships using tables, graphs and symbols.	
8.B.3 Use graphing technology and algebraic methods to analyze and predict linear relationships and make generalizations from linear patterns.	SE: 43-45, 46 #6-8, 47 #21, 218-221, 222 #54-56, 240-243, 244 #20-25 <i>Algebra Activity</i> 49 <i>Graphing Calculator Investigation</i> 224-225, 278-279
C. Solve problems using systems of numbers and their properties.	
8.C.3 Apply the properties of numbers and operations including inverses in algebraic settings derived from economics, business and the sciences.	SE: 13 Ex#5, 19 #47-48, 24 #34-36, 35 #28-29, 82 #40-41, 86 #16, 108 #50, 161 Ex#3-4, 163 #30, 205-207
D. Use algebraic concepts and procedures to represent and solve problems.	
8.D.3a Solve problems using numeric, graphic or symbolic representations of variables, expressions, equations and inequalities.	SE: 11-13, 120-123, 128-131, 256-259, 318-321, 352-355 <i>Algebra Activity</i> 141, 324, 358
8.D.3b Propose and solve problems using proportions, formulas and linear functions.	SE: 120-123, 124 #23-26, 155-157, 159 #33-34, 167 Ex#4, 169 #36-39, 172 Ex#2, 220 Ex#3, 320 Ex#5 <i>Reading Mathematics</i> 165
8.D.3c Apply properties of powers, perfect squares and square roots.	SE: 103-106, 108 #51, 411-412, 414 #49-50, 417-420, 586-588, 590 #42-43, 593-594, 596 #41-42, 598-599

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STATE GOAL 9: Use geometric methods to analyze, categorize and draw conclusions about points, lines, planes and space.	
A. Demonstrate and apply geometric concepts involving points, lines, planes and space.	
9.A.3a Draw or construct two- and three-dimensional geometric figures including prisms, pyramids, cylinders and cones.	SE: 124 #23-26, 414 #43-48, 435 #55-56, 442 #36-40, 456 #43-44, 605-607, 616-618, 812-817 <i>Algebra Activity</i> 416, 501
9.A.3b Draw transformation images of figures, with and without the use of technology.	SE: 197-200, 201 #9-10, 202 #34-36, 211 #57-59, 217 #59-60, 247 #17-20, 415 #71-73 <i>Graphing Calculator Investigation</i> 556
9.A.3c Use concepts of symmetry, congruency, similarity, scale, perspective, and angles to describe and analyze two- and three-dimensional shapes found in practical applications (e.g., geodesic domes, A-frame houses, basketball courts, inclined planes, art forms, blueprints).	SE: 260 #35-38, 261 #57, 456 #53, 543 #52, 550 #13, 609 #46-47, 619 #27, 620 #29-30, 626 Ex#5, 629 #61-62
B. Identify, describe, classify and compare relationships using points, lines, planes and solids.	
9.B.3 Identify, describe, classify and compare two- and three- dimensional geometric figures and models according to their properties.	SE: 124 #23-26, 414 #43-48, 435 #55-56, 442 #36-40, 455 #39-42, 456 #43-44, 605-607, 616-618, 812-817 <i>Algebra Activity</i> 416, 501
C. Construct convincing arguments and proofs to solve problems.	
9.C.3a Construct, develop and communicate logical arguments (informal proofs) about geometric figures and patterns.	SE: 292-295, 441 #30-31, 462 #47, 605-607, 616-618, 623-627, 813-817 <i>Algebra Activity</i> 122, 501 <i>Reading Mathematics</i> 338
9.C.3b Develop and solve problems using geometric relationships and models, with and without the use of technology.	SE: 133 #56-57, 435 #55-56, 442 #36-40, 456 #53, 505 #50, 543 #52, 609 #45-47, 663 #38-39 <i>Graphing Calculator Investigation</i> 531-532, 553
D. Use trigonometric ratios and circular functions to solve problems.	
9.D.3 Compute distances, lengths and measures of angles using proportions, the Pythagorean theorem and its converse.	SE: 605-607, 608 #13-18, 609 #45-47, 611-612, 613 #11-12, 614 #40-42, 616-617, 618 Ex#3, 623-627, 629 #61-62, 630 #63-64
STATE GOAL 10: Collect, organize and analyze data using statistical methods; predict results; and interpret uncertainty using concepts of probability.	
A. Organize, describe and make predictions from existing data.	
10.A.3a Construct, read and interpret tables, graphs (including circle graphs) and charts to organize and represent data.	SE: 50-52, 88-90, 715-717, 806-809 <i>Algebra Activity</i> 49, 743-744 <i>Graphing Calculator Investigation</i> 306-307, 729-730 <i>Reading Mathematics</i> 95 <i>Spreadsheet Investigation</i> 56, 178
10.A.3b Compare the mean, median, mode and range, with and without the use of technology.	SE: 67 #17-19, 84, 90-91, 92 #26-27, 113 #51, 731-733, 737-739, 818-819 <i>Graphing Calculator Investigation</i> 306-307

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10.A.3c Test the reasonableness of an argument based on data and communicate their findings.	SE: 37-39, 40 #10-12, 41 #30-35, 42 #50, 707 #1-4, 708-710 <i>Algebra Activity</i> 783 <i>Reading Mathematics</i> 714
B. Formulate questions, design data collection methods, gather and analyze data and communicate findings.	
10.B.3 Formulate questions (e.g., relationships between car age and mileage, average incomes and years of schooling), devise and conduct experiments or simulations, gather data, draw conclusions and communicate results to an audience using traditional methods and contemporary technologies.	SE: 708-709, 712 #27, 713 #32, 722-724, 725 #8, 727 #21, 737-739, 782-784 <i>Algebra Activity</i> 743-744 <i>Graphing Calculator Investigation</i> 729-730 <i>Reading Mathematics</i> 714
C. Determine, describe and apply the probabilities of events.	
10.C.3a Determine the probability and odds of events using fundamental counting principles.	SE: 754-756, 757 #20-22, 760-763, 765 #40-42, 766 #52-54, 769-772, 773 #13-15, 774 #36-37, 775 #48-51, 777-778, 782-784
10.C.3b Analyze problem situations (e.g., board games, grading scales) and make predictions about results.	SE: 761 Ex#3, 763 Ex#5, 764 #10-12, 765 #40-42, 769-772, 773 #5-8, 774 #32-34, 777-778, 780 #25, 782-784

Codes Used for TWE Pages

DI Differentiated Instruction
ICE In-Class Examples
OEA Open-Ended Assessment