GLENCOE CORRELATION

ALGEBRA 2 © 2003

MONTANA

Standards for Mathematics

Upon Graduation—End of Grade 12

STANDARDS	PAGE REFERENCES
Content Standard 1 - Students engage in the mathematical processes of problem solving and reasoning, estimation, communication, connections and applications, and using appropriate technology.	
1. recognize and formulate problems from situations within and outside mathematics and apply solution strategies to those problems.	SE: 28-32, 129-134, 286-293, 560-564, 578-582, 588-592, 701-708, 733-738 TWE: ICE 131, 289
2. select, apply, and evaluate appropriate estimation strategies throughout the problem-solving process.	SE: 296-299, 307, 315 TWE: ICE 296
3. formulate definitions, make and justify inferences, express generalizations, and communicate mathematical ideas and relationships.	SE: 28-32, 33-39, 270-275, 346-352, 412-416 *Algebra Activity* 19, 83, 432, 522, 681
4. apply and translate among different representations of the same problem situation or of the same mathematical concept. Model connections between problem situations that arise in disciplines other than mathematics.	SE: 28-32, 57, 485-487 *Algebra Activity* 13, 240, 272, 308 *Graphing Calculator Investigation* 300, 359, 539-540
5. select and use appropriate technology to enhance mathematical understanding. Appropriate technology may include, but is not limited to, paper and pencil, calculator, computer, and data collection devices.	SE: 6-10, 68-74, 160-166, 313-319 *Algebra Activity* 13, 252 *Graphing Calculator Investigation* 491 TWE: ICE 7-8, 69-71, 314-315
Content Standard 2 - Students demonstrate understanding of and an ability to use numbers and operations.	
1. use and understand the real number system, its operations, notations, and the various subsystems.	SE: 6-10, 11-18, 28-32, 160-166, 245-249, 250-255 TWE: ICE 7-8, 12-14, 29, 246
2. use definitions and basic operations of the complex number system.	SE: 270-275 TWE: DI 246 ICE 270-273 OEA 275
Content Standard 3 - Students use algebraic concepts, processes, and language to model and solve a variety of real-world and mathematical problems.	
1. use algebra to represent patterns of change.	SE: 578-582, 588-592, 599-603, 612-616 *Graphing Calculator Investigation* 593 TWE: ICE 579-580, 589-590, 613-615 OEA 582
2. use basic operations with algebraic expressions.	SE: 6-10, 12-17 *Getting Started* 55, 221 TWE: ICE 7-8, 14
3. solve algebraic equations and inequalities: linear, quadratic, exponential, logarithmic, and power.	SE: 20-27, 33-39, 40-46, 294-299, 301-305, 306-312, 313-319 TWE: ICE 22-23, 34-36, 41-43

STANDARDS	PAGE REFERENCES
4. solve systems of algebraic equations and inequalities, including use of matrices.	SE: 110-115, 116-122, 123-127, 129-134, 189-194, 202-207 *Getting Started* 153 TWE: ICE 111-112, 116-119, 190-191
5. use algebraic models to solve mathematical and real-world problems.	SE: 81-86 *Algebra Activity* 13, 240, 252, 272, 308 *Graphing Calculator Investigation* 300, 359, 539-540 TWE: ICE 82-83
Content Standard 4 - Students demonstrate understanding of shape and an ability to use geometry.	
1. construct, interpret, and draw three-dimensional objects.	Volume and surface area formulas are applied for three-dimensional objects. SE: 367, 379-380, 615 *Mixed Problem Solving* 862, 866 TWE: ICE 367, 379
2. classify figures in terms of congruence and similarity and apply these relationships.	SE: *Prerequisite Skills* 817-819
3. translate between synthetic and coordinate representations.	See Glencoe's *Advanced Mathematical Concepts* © 2001 SE: 88-95, 121, A28 TWE: A 96 MC 98
4. deduce properties of figures using transformations, coordinates, and vectors in problem solving.	SE: 91, 175-181, 322-327 *Graphing Calculator Investigation* 70, 320-321 TWE: ICE 91, 176-178, 323-325
5. apply trigonometric ratios (sine, cosine and tangent) to problem situations involving triangles.	SE: 701-708 TWE: ICE 702-705 OEA 708
Content Standard 5 - Students demonstrate understanding of measurable attributes and an ability to use measurement processes.	
1. apply concepts of indirect measurements (e.g., using similar triangles to calculate a distance).	SE: 701-708, 729-732, 735-738 *Prerequisite Skills* 817-819, 820-821 TWE: ICE 703-705, 729, 735
2. use dimensional analysis to check reasonableness of procedures.	SE: 710-714
3. investigate systems of derived measures (e.g., km/sec, g/cm^3).	SE: 225-228 The term *derived measures* is implied.
4. apply the appropriate concepts of estimates in measurement, error in measurement, tolerance, and precision.	SE: 702-708 *Algebra Activity* 716 TWE: ICE 703-705
Content Standard 6 - The students demonstrate understanding of an ability to use data analysis, probability, and statistics.	
1. use curve fitting to make predictions from data.	SE: 81-86 *Graphing Calculator Investigation* 87-88, 300 TWE: ICE 82-83

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2. apply measures of central tendency and demonstrate understanding of the concepts of variability and correlation.	SE: 664-669 *Prerequisite Skills* 822-823 TWE: ICE 665
3. select an appropriate sampling method for a given statistical analysis.	SE: *Algebra Activity* 522, 681
4. use experimental probability, theoretical probability, and simulation methods to represent and solve problems, including expected values.	SE: 632-636, 638-642, 644-649, 651-657, 658-662 *Algebra Activity* 681 TWE: F 644 ICE 639-640, 645-646 OEA 650
5. design a statistical experiment to study a problem and communicate the outcomes.	SE: *Algebra Activity* 522 TWE: OEA 650
6. describe, in general terms, the normal curve and use its properties to answer questions about sets of data that are assumed to be normally distributed.	SE: 671-675 TWE: ICE 672
Content Standard 7 - Students demonstrate understanding of and an ability to use patterns, relations and functions.	
1. describe functions and their inverses using graphical, numerical, physical, algebraic, and verbal mathematical models or representations.	SE: 56-62, 63-67, 89-94, 286-293, 390-394, 746-751 TWE: ICE 58-59, 64-65, 90-92, 287-289
2. analyze the graphs of the families of polynomial, rational, power, exponential, logarithmic, and periodic functions.	SE: 91, 322-327 *Graphing Calculator Investigation* 70, 320-321, 524, 769 TWE: ICE 91, 323-325
3. analyze the effects of parameter changes on the graphs of functions and relations, including translations.	SE: 91, 322-327, 523-530, 769-776 *Graphing Calculator Investigation* 70, 320-321 TWE: F 322 ICE 91, 323-325, 770-773
4. model real-world phenomena with a variety of functions.	SE: 89-94, 331-334, 523-530, 739-744 *Graphing Calculator Investigation* 300, 359 TWE: ICE 90, 331, 525, 742
5. use graphing for parametric equations, three-dimensional equations, and recursive relations.	SE: *Algebra Activity* 136-137

Codes Used for TWE Pages

DI	Daily Intervention
F	Focus
ICE	In-Class Examples
OEA	Open-Ended Assessment