

GLENCOE CORRELATION
ALGEBRA 1 © 2005
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: 142-148, 171-177, 298-305, 325-331, 561-565, 731-736 <i>Algebra Activity</i> 299, 626, 729-730 <i>Spreadsheet Investigation</i> 368
2. select, apply, and evaluate appropriate estimation strategies throughout the problem-solving process.	SE: 17-18 Ex #4, 50-51 Ex #1, 64 #3, 105 Ex #4, 106 Ex #6, 194 Ex #4, 535 Ex #4-5, 537 Ex #41-42, 662 #12
3. formulate definitions, make and justify inferences, express generalizations, and communicate mathematical ideas and relationships.	SE: 240-245, 410-411, 567-572 <i>Algebra Activity</i> 241, 416, 573 <i>Graphing Calculator Investigation</i> 265, 278-279, 418, 531
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: 171-176, 284 #34-40 <i>Algebra Activity</i> 306-307, 324, 437-438, 450-451, 487-488, 667, 729-730 <i>Spreadsheet Investigation</i> 368
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: 280-281 Ex #1, 294 Ex #3, 535 Ex #5 <i>Graphing Calculator Investigation</i> 265, 278-279, 306-307, 358, 375, 395, 545
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: 6-9, 11-15, 21-25, 32-35, 68-72, 73-77, 79-82, 84-87, 103-109, 586-592
2. use definitions and basic operations of the complex number system.	See Glencoe's <i>Algebra 2</i> © 2003 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: 233-238, 240-245, 256-262, 554-560, 561-565, 567-572 <i>Algebra Activity</i> 569, 573 <i>Spreadsheet Investigation</i> 232
2. use basic operations with algebraic expressions.	SE: 26-31, 32-35, 79-82, 84-86, 410-415, 417-423, 439-443, 444-448, 452-457 <i>Algebra Activity</i> 450-451

STANDARDS	PAGE REFERENCES
3. solve algebraic equations and inequalities: linear, quadratic, exponential, logarithmic, and power.	SE: 128-133, 149-154, 325-331, 332-337, 339-343, 533-538, 546-552, 554-560 <i>Algebra Activity</i> 141, 324
4. solve systems of algebraic equations and inequalities, including use of matrices.	SE: 369-374, 376-381, 382-386, 387-392, 394-398 <i>Algebra Activity</i> 376 <i>Graphing Calculator Investigation</i> 375, 395, 553 <i>Spreadsheet Investigation</i> 368
5. use algebraic models to solve mathematical and real-world problems.	SE: <i>Algebra Activity</i> 127, 141, 271, 324, 437-438, 450-451 <i>Graphing Calculator Investigation</i> 224-225, 306-307 TWE: DI 75, 137
Content Standard 4 - Students demonstrate understanding of shape and an ability to use geometry.	
1. construct, interpret, and draw three-dimensional objects.	SE: 414 Ex #46-48, 609 #39, 812 <i>Algebra Activity</i> 122, 416
2. classify figures in terms of congruence and similarity and apply these relationships.	SE: 616-620 <i>Algebra Activity</i> 622 TWE: DI 618 OEA 621
3. translate between synthetic and coordinate representations.	See Glencoe's <i>Advanced Mathematical Concepts</i> © 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: 197-203 TWE: DI 199 OEA 203
5. apply trigonometric ratios (sine, cosine and tangent) to problem situations involving triangles.	SE: 623-630 <i>Algebra Activity</i> 622, 626 TWE: OEA 630
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: 157 Ex #5, 616-620, 623-630, 644 Ex #5, 646 #34-37 <i>Algebra Activity</i> 626
2. use dimensional analysis to check reasonableness of procedures.	SE: 167-168 Ex #4, 656 Ex #3, 658 #28-33, 658 #35-37, 661 Ex #5, 662 #25-28, 662 #37-41 TWE: DI 661
3. investigate systems of derived measures (e.g., km/sec, g/cm ³).	SE: 167-168 Ex #4, 656 Ex #3, 658 #28-33, 658 #35-37, 661 Ex #5, 662 #25-28, 662 #37-41 TWE: DI 661
4. apply the appropriate concepts of estimates in measurement, error in measurement, tolerance, and precision.	SE: 50-51 Ex #1, 194 Ex #4 <i>Algebra Activity</i> 347, 626 TWE: DI 535

STANDARDS	PAGE REFERENCES
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: 298-305 <i>Algebra Activity 299</i> <i>Graphing Calculator Investigation 306-307, 729-730</i> TWE: ICE 300 #2-3
2. apply measures of central tendency and demonstrate understanding of the concepts of variability and correlation.	SE: 88-94, 298, 301#4-5, 301 #10-13, 731-736, 737-742 <i>Algebra Activity 743-744</i> <i>Graphing Calculator Investigation 306-307</i> TWE: DI 90 UM 732
3. select an appropriate sampling method for a given statistical analysis.	SE: 708-713 TWE: DI 710 OEA 713
4. use experimental probability, theoretical probability, and simulation methods to represent and solve problems, including expected values.	SE: 96-100, 760-766, 769-776, 777-780, 782-787 <i>Algebra Activity 783</i> TWE: DI 778, 784 OEA 776
5. design a statistical experiment to study a problem and communicate the outcomes.	SE: 787 #36-38 <i>Algebra Activity 783</i> TWE: DI 784
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.	See Glencoe's <i>Algebra 2</i> © 2003 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: 206-207 <i>Algebra Activity 207</i> TWE: OEA 211 **The following deal only with functions: SE: 226-231, 218-223, 524-530, 554-560 <i>Graphing Calculator Investigation 224-225</i> TWE: OEA 223, 560
2. analyze the graphs of the families of polynomial, rational, power, exponential, logarithmic, and periodic functions.	SE: <i>Graphing Calculator Investigation 265, 278-279, 531-532, 545, 556, 604, 654</i>
3. analyze the effects of parameter changes on the graphs of functions and relations, including translations.	SE: 197-203, 269-270 #59-62, 292-297 <i>Graphing Calculator Investigation 265, 278-279, 531-532, 545, 556, 604</i>
4. model real-world phenomena with a variety of functions.	SE: 298-305, 285 #45, 373, #51-54, 397 #29-30, 529 #39-40, 535 Ex #5, 561-565 <i>Algebra Activity 271</i> <i>Graphing Calculator Investigation 306-307</i> <i>Spreadsheet Investigation 368</i>
5. use graphing for parametric equations, three-dimensional equations, and recursive relations.	See Glencoe's <i>Algebra 2</i> © 2003 SE: <i>Algebra Activity 136-137</i>

Codes Used for TWE Pages

DI	Differentiated Instruction
ICE	In-Class Example
OEA	Open-Ended Assessment
UM	Unlocking Misconceptions