

GLENCOE CORRELATION
MATHEMATICS: APPLICATIONS AND CONNECTIONS
COURSE 3 © 2001
WYOMING
Grade 8 Mathematics

OBJECTIVES	PAGE REFERENCES
1. NUMBER OPERATIONS AND CONCEPTS	
Students use numbers, number sense, and number relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.	
1. Students represent and use numbers in a variety of equivalent forms (such as changing from percent to decimal to fraction, etc.) and in a problem-solving context: <ul style="list-style-type: none"> • Integers as prime factors, factors, and multiples; • Rational numbers including fractions, decimals, percents, ratios, and proportions; • Roots and powers. 	SE: 8-10, 111-113, 114-117, 235-238, 242-244, 382-384 <i>Hands-on Lab 118</i> TWE: RL 9 CA 117, 244
2. Students extend their understanding and use of basic arithmetic operations on rational numbers. <ul style="list-style-type: none"> • Simplify numerical expressions using the order of operations; • Develop and use order relations (comparisons) for rational numbers. 	SE: 11-15, 62-65, 261-264, 281-284, 561-569 TWE: MLS 11 MJ 37 EL 65 CA 264 RL 283
3. Students use number sense for mental math, estimation, and justifying the reasonableness of solutions to problems involving rational numbers.	SE: 125-129, 386-389 <i>Chapter Project 103</i> <i>Thinking Lab 124-125</i> TWE: RL 128 CA 129 MLS 386
2. GEOMETRY	
Students apply geometric concepts, properties, and relationships in a problem-solving situation. Students communicate the reasoning used in solving these problems.	
1. Students classify, describe, and draw one-, two-, and three-dimensional geometric shapes, including: <ul style="list-style-type: none"> • Lines, rays, segments, and angles; • Parallel and perpendicular relationships; • Circles and spheres; • Polygons such as triangles, squares, rectangles, etc.; • Right prisms, cylinders, cones, and pyramids. 	SE: 188-192, 196-204, 309-311, 482-485 <i>Hands-on Lab 186-187</i> TWE: EL 204 CA 311 RL 484

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2. Students select and use the appropriate methods, tools, and units to solve problems involving angle measure, perimeter, circumference, area, and volume: <ul style="list-style-type: none"> • Area of triangles, squares, rectangles, parallelograms, trapezoids, and circles; • Surface area and volume of rectangular solids. 	SE: 38-42, 301-304, 476-479, 486-489, 495-498 <i>Chapter Project 475</i> TWE: RL 303 EL 479 CA 489, 498
3. Students make conjectures about geometric figures based on their knowledge of geometric transformations, congruence, and similarity.	SE: 210-212, 215-218, 220-223, 357-360, 456-467 <i>Hands-on Lab 214</i> TWE: RL 211, 217 CA 223 ML 357
4. Students use geometric formulas including the Pythagorean theorem.	SE: 38-42, 301-304, 398-401, 476-479, 486-487 <i>Hands-on Lab 365, 396-397</i> TWE: RL 40 EL 401, 493
3. MEASUREMENT	
Students use a variety of tools and techniques of measurement in a problem-solving situation. Students communicate the reasoning used in solving these problems.	
1. Students measure length, weight/mass, capacity, and angle measure.	SE: 38-42, 104-106, 196-199, 504-507 <i>Hands-on Lab 186-187</i> TWE: RL 40, 105
2. Students measure two- and three-dimensional models using a variety of tools.	SE: 188-192, 486-489, 504-507 <i>Thinking Lab 480-481</i> <i>Hands-on Mini Lab 490</i> TWE: RL 40, 481
3. Students convert units of measure within the U.S. system and within the metric system in problem-solving situations across content areas.	SE: 104-106, 504-507, 510 <i>Hands-on Lab 186-187, 505</i> TWE: MM 507
4. ALGEBRAIC CONCEPTS AND RELATIONSHIPS	
Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation. Students evaluate and communicate the reasoning used in solving these problems.	
1. Students identify variables, expressions, inequalities, and equations.	SE: 11-15, 43-47, 86-89 TWE: MLS 11 RL 46, 316, 320
2. Students translate in both directions word phrases and sentences to mathematical expressions and equations.	SE: 27-29 TWE: RL 46 CA 47, 321 ML 446
3. Students solve one- and two-step linear equations and inequalities.	SE: 17-25, 32-36, 43-47, 86-89, 318-321 TWE: RL 19, 88 EL 36 CA 321

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4. Students evaluate algebraic expressions and formulas given the values for variables.	SE: 16, 111-113 <i>Hands-on Lab</i> 118-119 TWE: ML 446
5. Students understand and use the coordinate system.	SE: 92-95, 410-413, 452-455, 456-459 <i>Chapter Project</i> 381 TWE: ML 92 RL 169, 412 I-CE 453 CA 459
5. STATISTICS AND PROBABILITY	
Students use statistics and probability to analyze given situations and the results of experiments. Students communicate the reasoning used in arriving at a conclusion.	
1. Students systematically collect, organize, describe, analyze, and represent data using tables, charts, and graphs.	SE: 142-146, 148-151, 171-173 <i>Thinking Lab</i> 140-141, 450-451 <i>Interdisciplinary Investigation</i> 556-557 TWE: EL 170, 173 CA 173
2. Students calculate measures of central tendency for data sets.	SE: 158-161, 163-166 <i>Technology Lab</i> 162 TWE: MLS 158 RL 159 EL 161 CA 161
3. Students predict, compare, and calculate probable outcomes of simple experiments or simulations.	SE: 253-256, 518-520, 534-537, 540-543, 546-548 <i>Chapter Project</i> 515 TWE: EL 256, 520, 548 ML 534
6. TOOLS AND TECHNOLOGY	
Students use appropriate tools and technologies to model, measure, and apply the results in a problem-solving situation. Students communicate the reasoning used in solving these problems.	
1. Students use manipulatives and concrete models as tools to solve problems.	SE: 62-65 <i>Hands-on Lab</i> 205, 544, 560 TWE: CA 25 RL 236, 320, 562
2. Students use a scientific calculator as a tool in problem solving.	SE: <i>Technology Lab</i> 16, 147, 445 <i>Interdisciplinary Investigation</i> 424-425, 556-557 <i>Hands-on Lab</i> 503
3. Students use a computer to organize information and to research a mathematical situation.	SE: <i>Chapter Project</i> 55, 277, 559 <i>Technology Tips</i> 136 <i>Interdisciplinary Investigation</i> 274-275 <i>Hands-on Lab</i> 305 TWE: RL 6
4. Students use application software (i.e., spreadsheets, microworlds, probeware, etc.) to assist in the problem-solving process.	SE: <i>Chapter Project</i> 55, 139, 515, 559 <i>Technology Lab</i> 162, 352 TWE: UC 445 MJ 352

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7. PROBLEM SOLVING AND MATHEMATICAL REASONINGS	
Students apply a variety of problem-solving strategies to investigate and solve problems from across the curriculum as well as from practical applications.	
1. Students apply math skills, including mental-math, number sense, estimation, and basic operations in problem-solving situations.	SE: 386-389 <i>Thinking Lab</i> 30-31, 342-343 TWE: ML 8, 353, 565 EL 31, 356
2. Students, given a problem to solve, choose a strategy, apply the strategy to find an acceptable solution, and communicate the process involved.	SE: 4-7 <i>Thinking Lab</i> 402-403, 450-451, 538-539 TWE: CA 7, 91 ML 210 EL 401 RL 402
3. Students recognize and apply deductive and inductive reasoning to simple problem-solving situations.	SE: 546-548 <i>Thinking Lab</i> 90-91, 124-125 TWE: EL 91, 520 CA 125 ML 477, 534

Codes Used for TWE Pages

CA	Closing Activity
EL	Extending the Lesson
I-CE	In-Class Example
MJ	Math Journal
ML	Motivating the Lesson
MLS	Multiple Learning Styles
MM	Math in the Media
RL	Reteaching the Lesson
UC	Using a Calculator