

GLENCOE CORRELATION
MATHEMATICS: APPLICATIONS AND CONNECTIONS
COURSE 1 © 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: 28-31, 182-184, 188-190, 193-196, 201-209, 214-219, 317-320, 330-336 TWE: QD 2
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: 16-19, 118-121, 133-143, 152-159, 238-253, 273-279, 285-291, 441-452, 456-458 <i>Cooperative Learning</i> 132, 271-272 TWE: MLS 16, 22 EL 19
3. Students use number sense for mental math, estimation, and justifying the reasonableness of solutions to problems involving rational numbers.	SE: 12-15, 109-115, 228-234, 268-270, 337-339 <i>Thinking Lab</i> 32-33, 116-117, 356-357 TWE: CA 339
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: 352-355, 370-373, 412-414 <i>Hands-on Lab</i> 362-363, 368-369, 415 <i>Chapter Project</i> 351 TWE: RL 353 CA 355 ML 412 EL 355, 373, 414

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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: 145-148, 280-283, 352-355, 358-361, 398-409, 418-424 <i>Chapter Project</i> 350-351 <i>Hands-On Lab</i> 149 <i>Technology Lab</i> 425 TWE: ML 421 RL 419, 422 EL 424 CV 280
3. Students make conjectures about geometric figures based on their knowledge of geometric transformations, congruence, and similarity.	SE: 379-383, 464-467 <i>Hands-on Lab</i> 362-363, 384-385, 462-463 TWE: GS 362 ML 379 CA 382 RL 466
4. Students use geometric formulas including the Pythagorean theorem.	SE: 145-147, 280-283, 398-409, 418-424, 526-529 <i>Hands-on Lab</i> 149, 396-397 <i>Technology Lab</i> 425 TWE: RL 147 MLS 406 ML 421
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: 102-114, 164-166, 202-205, 352-355 <i>Hands-On Lab</i> 100-101 TWE: RL 165 ML 202 EL 355
2. Students measure two- and three-dimensional models using a variety of tools.	SE: <i>Chapter Project</i> 227, 395 <i>Hands-on Lab</i> 295 <i>Mini Lab</i> 359, 406 TWE: CA 205 RL 353
3. Students convert units of measure within the U.S. system and within the metric system in problem-solving situations across content areas.	SE: 167-169, 202-205, 292-294 TWE: RL 168 EL 169 CA 169, 294 ML 202
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: 21-25, 34-37, 476-491 <i>Hands-on Lab</i> 20-21 TWE: MJ 21 RL 24, 490

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2. Students translate in both directions word phrases and sentences to mathematical expressions and equations.	SE: 37 <i>Hands-on Lab 20-21</i> <i>Thinking Lab 492-493</i> TWE: MLS 22 EL 25 QD 474 ML 476 CA 487
3. Students solve one- and two-step linear equations and inequalities.	SE: 34-37, 476-491 TWE: RL 35, 482 EL 37, 483 MLS 488
4. Students evaluate algebraic expressions and formulas given the values for variables.	SE: 22-25 <i>Technology Lab 26</i> TWE: I-CE 23 5MC 28
5. Students understand and use the coordinate system.	SE: 82-85, 459-461, 464-467 TWE: RL 84 MLS 459 EL 467
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: 46-57, 60-63 <i>Chapter Project 45</i> <i>Thinking Lab 58-59, 520-521</i> TWE: CA 53 RL 56, 62 EL 59
2. Students calculate measures of central tendency for data sets.	SE: 71-74 <i>Let the Games Begin 75</i> TWE: MLS 71 RL 73 CA 74, 81
3. Students predict, compare, and calculate probable outcomes of simple experiments or simulations.	SE: 64-67, 515-518, 522-525, 531-534 <i>Interdisciplinary Investigation 128-129</i> <i>Hands-on Lab 197, 535</i> TWE: I-CE 65 CA 67, 525 EL 67 MJ 535
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: 441-452 <i>Hands-on Lab 20-21, 100-101, 197</i> <i>Hands-on Mini-Lab 317</i> TWE: RL 52 ML 152 EL 452, 461

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2. Students use a scientific calculator as a tool in problem solving.	SE: <i>Technology Lab</i> 26, 530 <i>Interdisciplinary Investigation</i> 128-129 <i>Hands-on Mini-Lab</i> 280 <i>Chapter Project</i> 309 TWE: RL 290, 419 UC 321
3. Students use a computer to organize information and to research a mathematical situation.	SE: <i>Technology Lab</i> 144, 301, 321, 425 <i>Chapter Project</i> 3, 309, 351 TWE: TT 144 EL 333
4. Students use application software (i.e., spreadsheets, microworlds, probeware, etc.) to assist in the problem-solving process.	SE: <i>Technology Lab</i> 144, 301, 425 <i>Chapter Project</i> 177, 227, 351 TWE: EL 355
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: 4-7, 12-15, 16-20 <i>Chapter Project</i> 3 <i>Thinking Lab</i> 32-33, 150-151, 186-187, 356-357, 492-493 TWE: RL 233, 322, 335 EL 493
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>Chapter Project</i> 3 <i>Thinking Lab</i> 150-151, 186-187, 296-297 TWE: CA 7, 151, 237 ML 280
3. Students recognize and apply deductive and inductive reasoning to simple problem-solving situations.	SE: <i>Thinking Lab</i> 32-33, 150-151, 236-237, 356-357 TWE: CA 151 EL 187 ML 324, 445 MLS 341

Codes Used for TWE Pages

5MC	5-Minute Check
CA	Closing Activity
CV	Classroom Vignette
EL	Extending the Lesson
GS	Getting Started
I-CE	In-Class Example
MJ	Math Journal
ML	Motivating the Lesson
MLS	Multiple Learning Styles
QD	Question of the Day
RL	Reteaching the Lesson
TT	Teaching Tip
UC	Using a Calculator