

**GLENCOE CORRELATION**  
**PRE-ALGEBRA: AN INTEGRATED TRANSITION TO**  
**ALGEBRA & GEOMETRY © 2001**  
**WYOMING**  
**Grade 8 Mathematics**

OBJECTIVES	PAGE REFERENCES
<b>1. NUMBER OPERATIONS AND CONCEPTS</b>	
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"> <li>• Integers as prime factors, factors, and multiples;</li> <li>• Rational numbers including fractions, decimals, percents, ratios, and proportions;</li> <li>• Roots and powers.</li> </ul>	SE: 170-171, 174-179, 190-194, 200-204, 274-279, 458-461, 664-668 <i>Math Lab</i> 180, 687 TWE: EX 188 GT 450, 458 RT 460
2. Students extend their understanding and use of basic arithmetic operations on rational numbers. <ul style="list-style-type: none"> <li>• Simplify numerical expressions using the order of operations;</li> <li>• Develop and use order relations (comparisons) for rational numbers.</li> </ul>	SE: 11-15, 26-30, 78-93, 224-228, 234-247, 284-293, 295-299 <i>Math Lab</i> 82, 88, 294 TWE: ALS 175 TT 180
3. Students use number sense for mental math, estimation, and justifying the reasonableness of solutions to problems involving rational numbers.	SE: 20, 118-121, 229-233, 255-257, 280-283, 462 <i>Long-Term Project</i> 62, 270 <i>Choose</i> 8, 96, 256, 570 TWE: EX 233, 288 CA 233, 283
<b>2. GEOMETRY</b>	
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"> <li>• Lines, rays, segments, and angles;</li> <li>• Parallel and perpendicular relationships;</li> <li>• Circles and spheres;</li> <li>• Polygons such as triangles, squares, rectangles, etc.;</li> <li>• Right prisms, cylinders, cones, and pyramids.</li> </ul>	SE: 96, 341-344, 401, 548-553, 561-565, 568-572, 584-593 <i>Math Lab</i> 554-555 TWE: EX 553

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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"> <li>• Area of triangles, squares, rectangles, parallelograms, trapezoids, and circles;</li> <li>• Surface area and volume of rectangular solids.</li> </ul>	SE: 139-141, 335, 553. 612-621, 632-653 <i>Real World</i> 116 <i>Math Lab</i> 610-611 TWE: CV 140 EX 246, 617, 622 ATS 677
3. Students make conjectures about geometric figures based on their knowledge of geometric transformations, congruence, and similarity.	SE: 573-577, 578-583, 595-599 <i>Math Lab</i> 594, 654 TWE: EX 566, 617 CA 577
4. Students use geometric formulas including the Pythagorean theorem.	SE: 134-136, 177, 342, 612-617, 619-621, 632-653, 676-681 TWE: EX 137, 652
<b>3. MEASUREMENT</b>	
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: 136, 193, 286, 358-361, 432, 684, 688, 695 <i>Long-Term Project</i> 606 TWE: CV 358 EX 691
2. Students measure two- and three-dimensional models using a variety of tools.	SE: 140-141, 288, 290, 569, 578-583, 585 <i>Long-Term Project</i> 606 TWE; ALS 340 TP 578 CA 583
3. Students convert units of measure within the U.S. system and within the metric system in problem-solving situations across content areas.	SE: 288, 358-361, 585 TWE: EX 361
<b>4. ALGEBRAIC CONCEPTS AND RELATIONSHIPS</b>	
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: 16-20, 32-35, 46-49
2. Students translate in both directions word phrases and sentences to mathematical expressions and equations.	SE: 18-19, 43, 44, 48
3. Students solve one- and two-step linear equations and inequalities.	SE: 41-45, 101-103, 124-133, 248-254, 334-337, 385-390 <i>Math Lab</i> 123, 333

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4. Students evaluate algebraic expressions and formulas given the values for variables.	SE: 19, 23-24, 85, 134-137, 240, 287, 292 <i>Math Lab</i> 21 TWE: ATS 17 EX 137
5. Students understand and use the coordinate system.	SE: 36-40, 67, 72-76, 372-377 <i>Long-Term Project</i> 62 <i>Math Lab</i> 77, 378 TWE: ML 72 ALS 73
<b>5. STATISTICS AND PROBABILITY</b>	
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: 51-55, 437-438, 486-489, 495-501 <i>Math Lab</i> 50, 71, 502-503 <i>Closing the Investigation</i> 56 TWE: EX 55 RT 437, 511
2. Students calculate measures of central tendency for data sets.	SE: 301-306, 490-495 <i>Math Lab</i> 300, 307 TWE: ICE 303
3. Students predict, compare, and calculate probable outcomes of simple experiments or simulations.	SE: 454-457, 504-508, 509-513, 524-528 <i>Math Lab</i> 529 TWE: ML 504 EX 456, 528
<b>6. TOOLS AND TECHNOLOGY</b>	
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: 22, 54 <i>Math Lab</i> 31, 82, 123, 294, 710 TWE: UM 32, 178, 361, 455 UMD 52, 148, 414 GT 89 CA 155, 247
2. Students use a scientific calculator as a tool in problem solving.	SE: 12, 318, 412 <i>Math Lab</i> 21, 189, 307, 628 TWE: EX 15, 29, 686 UC 207, 464, 527
3. Students use a computer to organize information and to research a mathematical situation.	SE: <i>Long-Term Project</i> 166-167 <i>Closing the Investigation</i> 160 <i>Working on the Investigation</i> 209, 238 TWE: EX 159, 438, 598 RT 469, 473
4. Students use application software (i.e., spreadsheets, microworlds, probeware, etc.) to assist in the problem-solving process.	SE: <i>Internet</i> 35, 63, 491, 718 <i>Working on the Investigation</i> 209, 238 TWE: GT 41, 130 PAP 107, 377 UT 438 EX 438

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<b>7. PROBLEM SOLVING AND MATHEMATICAL REASONINGS</b>	
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: 15, 92, 173-174, 188, 280-293, 443, 571 TWE: EX 25, 155 RT 230
2. Students, given a problem to solve, choose a strategy, apply the strategy to find an acceptable solution, and communicate the process involved.	SE: 94-97, 118-121, 255-257, 437-438, 524-528 TWE: ML 118 EX 150, 257
3. Students recognize and apply deductive and inductive reasoning to simple problem-solving situations.	SE: 74, 255-256 TWE: EX 49, 254, 257, 583 RT 282

### Codes Used for TWE Pages

ALS	Alternative Learning Styles
ATS	Alternative Teaching Strategies
CA	Closing Activity
CV	Classroom Vignette
EX	Extention
GT	Glencoe Technology
ICE	In-Class Examples
ML	Motivating the Lesson
PAP	Pre-Alge Pass CD
RT	Reteaching
TP	Tech Prep
TT	Teaching Tip
UC	Using Calculators
UM	Using Manipulatives
UMD	Using Models
UT	Using Technology