



WYOMING
Mathematics Content and Performance Standards – Grade 8
Mathematics: Applications and Concepts
Course 3 © 2004

BENCHMARKS	PAGE REFERENCES
1. NUMBER OPERATIONS AND CONCEPTS	
Students use numbers, number sense, and number relationships in a problem-solving situation.	
1. Students represent and apply 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"> • prime factors, factors, and multiples; • rational numbers and proportions; and • square roots and powers. 	SE: 34, 98-99, 116-122, 206-212, 609, 612, 621, 622, 626-627 <i>Practice and Applications</i> 100, 213 TWE: BE 62, 116 DLV 99, 211 ICE 117 DIN 206 AS 209
2. Students extend understanding and use of basic arithmetic operations on rational numbers. <ul style="list-style-type: none"> • Simplify numerical expressions using the order of operations; • Order rational numbers expressed in a variety of forms 	SE: 11, 62-64, 67-70, 619 <i>Practice and Application</i> 65 <i>Hands-on Mini Lab</i> 71 TWE: BE 62 DLV 68 ICE 68 AS 70
3. Students explain their choice of estimation and problem-solving strategies and justify results of solutions in problem-solving situations involving rational numbers.	SE: 6-8, 62, 67-68, 600-601 <i>Practice and Application</i> 9-10, 69 TWE: DLV 7 TNT 7 BE 62
4. Students understand properties of operations with rational numbers.	SE: 11-13, 34-36, 616 <i>Skill and Concept Check</i> 14 <i>Practice and Applications</i> 15, 37 TWE: ICE 13 DIN 35, 133
2. GEOMETRY	
Students apply geometric concepts, properties, and relationships in a problem-solving situation.	
1. Students classify and describe one-, two-, and three-dimensional geometric objects, including: <ul style="list-style-type: none"> • lines, rays, segments, and angles; • parallel and perpendicular relationships; • circles and spheres; • regular polygon types; • right prisms, cylinders, cones, and pyramids. 	SE: 256-258, 319-321, 331-332, 335-337, 342-344, 629-634 <i>Hands-on Lab</i> 261, 278 <i>Hands-on Mini Lab</i> 262, 319 TWE: DIN 257 ICE 257, 336 DLV 337

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2. Students make conjectures about geometric objects based on knowledge of geometric transformations, congruence, and similarity.	SE: 178-180, 194-195, 279-282, 625, 630 <i>Practice and Application</i> 181, 196 <i>Hands-on Mini Lab</i> 194 <i>Hands-on Lab</i> 283 TWE: DLV 179 ICE 179, 180, 280 BE 279
3. Students use geometric formulas including the Pythagorean Theorem.	SE: 132-140, 314-316, 319-321, 326-327, 623, 632-634 <i>Hands-on Mini Lab</i> 132 <i>Practice and Applications</i> 317, 322, 328 TWE: DIN 133, 326 ICE 315, 316, 320, 321, 326
4. Students communicate the reasoning used in identifying geometric relationships in problem-solving situations appropriate to grade level.	SE: <i>Problem-Solving Strategy</i> 123, 276, 324 TWE: BE 276
5. Students represent geometric figures using a rectangular coordinate plane.	SE: 142-144, 194-196, 290, 296-297, 300-301, 614, 623 <i>Hands-on Mini Lab</i> 194 <i>Practice and Applications</i> 293, 298, 302 TWE: ICE 195, 291, 297, 301 BE 290
3. MEASUREMENT Students use a variety of tools and techniques of measurement in a problem-solving situation.	
1. Students apply estimation and measurement of weight/mass to content problems and convert within U.S. customary and within metric units (mg, g, kg).	SE: 336, 600-601, 604-607
2. Students apply estimation and measurement of capacity/volume to content problems and convert within metric units (ml, l).	SE: 336, 600-601, 606-607 TWE: ICE 337
3. Students select and use the appropriate methods, tools, and units to solve problems involving angle measure, perimeter, circumference, area (including circles), and volume of rectangular solids.	SE: 336-337, 613, 633-634 <i>Practice and Applications</i> 338
4. ALGEBRA Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.	
1. Students translate word phrases, which involve the four basic operations to mathematical expressions.	SE: 13, 39-42, 43-44, 618 <i>Reading Math</i> 8 <i>Practice and Application</i> 41, 48, 53, 66, 75 <i>Study Skill</i> 215 TWE: BE 39, 43 ICE 40, 43 DLV 41
2. Students solve one- and two-step linear equations each with an integer coefficient and integer solutions.	SE: 45-52, 474-479, 532-536, 640-641 TWE: BE 474, 533 DLV 475

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3. Students evaluate algebraic expressions and formulas given integer values for variables.	SE: 11, 39-42, 45-47, 48-52, 474-479 <i>Practice and Application</i> 48-49, 52-53 TWE: NS 52
4. Using simple linear equations, students create a table, and graph the solutions on the coordinate system.	SE: 533-534, 644, 658 TWE: BE 533 ICE 534
5. DATA ANALYSIS AND PROBABILITY Students use data analysis and probability to analyze given situations and the results of experiments.	
1. Students systematically collect, organize, describe, analyze, and represent data using tables, charts, diagrams, and graphs.	SE: 166-169, 420-424, 426-432 <i>Problem-Solving Strategy</i> 123 <i>Guided Practice</i> 163 TWE: BE 420, 426 ICE 421, 422, 427, 428, 431
2. Students calculate mean, median, mode, and range for data sets and use in a real-world setting appropriate to grade level.	SE: 36, 435-438, 638 <i>Practice and Applications</i> 69 (#32) <i>Spreadsheet Investigation</i> 439 TWE: ICE 36, 436 BE 435 DLV 436
3. Students predict, compare, and calculate probable outcomes of experiments or simulations.	SE: 374-375, 380-381, 384-385, 388-389, 400-401, 635-637 <i>Hands-on Lab</i> 392-393 TWE: BE 374, 380, 396 ICE 375, 381, 397, 401
4. Students communicate about the likelihood of events using concepts from probability such as impossible, equally likely and certain appropriate to grade level.	SE: 374-375 <i>Skill and Concept Check</i> 376 <i>Practice and Applications</i> 376-377 TWE: BE 374 ICE 375

Codes Used for TWE Pages

AS	Assess
BE	Bellringer
DIN	Differentiated Instruction
DLV	Daily Intervention
ICE	In Class Examples
NS	Number Sense
TNT	Tip for New Teachers