



Mathematics

Applications and Concepts
Course 1
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STANDARDS	PAGE REFERENCES
I. MATHEMATICAL REASONING	
Standard: Apply skills of mathematical representation, communication and reasoning throughout the remaining four content strands.	
Note about assessment of this standard: The Mathematical Reasoning standards will primarily be assessed within the context of the standards in the remaining four content strands. The depth of mathematical reasoning will increase as the skill level in the four other strands increases.	
<p>1. Assess the reasonableness of a solution by comparing the solution to appropriate graphical or numerical estimates or by recognizing the feasibility of a solution in a given context.</p>	<p>Student Edition: 6-9, 37 #44, 47 #25, 86-89, 95 #14, 116-119, 223-225 <i>Problem-Solving Strategy</i> 54-55, 125-126, 156-157 <i>Spreadsheet Investigation</i> 60-61 <i>Hands-on Mini Lab</i> 62 <i>Hands-on Lab</i> 407-408, 480-481</p> <p>Teacher Wraparound Edition: A 225, 258; ICE 87-88</p> <p>Teacher Resources: <i>Practice Skills</i> 2, 97 <i>Practice: Word Problems</i> 3, 33, 98 <i>Student Guide and Intervention</i> 96</p>

STANDARDS	PAGE REFERENCES
<p>2. Appropriately use examples and counterexamples to make and test conjectures, justify solutions and explain results.</p>	<p>Student Edition: 16 #47, 111, 135, 180 #31 <i>Problem-Solving Strategy</i> 32-33 <i>Hands-on Lab</i> 100-101, 139-140, 260-261, 464, 524 #18 <i>Hands-on Mini Lab</i> 144 <i>Spreadsheet Investigation</i> 469 Teacher Wraparound Edition: DI 207</p>
<p>3. Translate a problem described verbally or by tables, diagrams or graphs, into suitable mathematical language, solve the problem mathematically and interpret the result in the original context.</p>	<p>Student Edition: 6-9, 21 #40-#41, 27 #36, #37, 66-69, 86-89 <i>Problem-Solving Strategy</i> 54-55 <i>Spreadsheet Investigation</i> 60-61, 79 Teacher Wraparound Edition: DI 29; ICE 87, 88 Teacher Resources: <i>Practice Skills</i> 77 <i>Practice: Word Problems</i> 78</p>
<p>4. Support mathematical results by explaining why the steps in a solution are valid and why a particular solution method is appropriate.</p>	<p>Student Edition: 6-9, 24-27, 124 #38-#39, 221 #31-#35, 497 #37 <i>Problem-Solving Strategy</i> 156-157, 280-281 Teacher Wraparound Edition: A 9; DI 142 Teacher Resources: <i>Practice Skills</i> 22 <i>Practice: Word Problems</i> 23 <i>Study Guide and Intervention</i> 21</p>
<p>5. Determine whether or not relevant information is missing from a problem.</p>	<p>Student Edition: 6-9, 86-89, 95 #14 <i>Problem-Solving Strategy</i> 54-55, 192-193 <i>Hands-on Lab</i> 437 Teacher Wraparound Edition: ICE 87-88 Teacher Resources: <i>Practice Skills</i> 562 <i>Practice: Word Problems</i> 563 <i>Study Guide and Intervention</i> 561</p>

STANDARDS	PAGE REFERENCES
<p>6. Use accurately common logical words and phrases such as “and,” “or,” “if ... then ...,” “unique,” “only if.”</p>	<p>Student Edition: 241 ex 3 <i>Study Tip 7</i> <i>Problem-Solving Strategy</i> 32-33, 314-315 <i>Hands-on Lab</i> 100-101, 139-140, 181</p>
<p>II. NUMBER SENSE, COMPUTATION AND OPERATIONS</p>	
<p>A. Number Sense</p>	
<p>Standard: Use positive and negative rational numbers, represented in a variety of ways, to quantify information and to solve real-world and mathematical problems.</p>	
<p>1. Order and compare integers, fractions, decimals and mixed numbers with $>$, $<$, and $=$.</p>	<p>Student Edition: 108-110, 113 #30-32, 198-201, 205 #37-40, 209 #34-38 <i>The Game Zone</i> 115 Teacher Wraparound Edition: A 110, 201; B 108; DI 108, 199; I-CE 109, 199 Teacher Resources: <i>Practice Skills</i> 129, 242 <i>Practice: Word Problems</i> 130, 243 <i>Study Guide and Intervention</i> 128, 241</p>
<p>2. Locate and compare positive and negative rational numbers on a number line.</p>	<p>Student Edition: 294-298, 303 #46-48, 307 #43 Teacher Wraparound Edition: I-CE 295 Teacher Resources: <i>Practice Skills</i> 384 <i>Practice: Word Problems</i> 385 <i>Study Guide and Intervention</i> 383</p>
<p>3. Use rounding and estimation with integers, decimals and fractions to solve real-world and mathematical problems.</p>	<p>Student Edition: 111-113, 116-119, 219-222, 223-225, 256-258 <i>Problem-Solving Strategy</i> 32-33, 125-126 <i>Prerequisite Skills</i> 592-593 Teacher Wraparound Edition: A 119, 143; B 111, 116, 223; DI 116, 136, 223; I-CE 117, 220, 224, 257 Teacher Resources: <i>Practice Skills</i> 134, 252, 278, 283 <i>Practice: Word Problems</i> 135, 253, 279 <i>Study Guide and Intervention</i> 133, 251, 277, 282</p>

STANDARDS	PAGE REFERENCES
B. Computation and Operation	
Standard: Compute fluently and make reasonable estimates with positive and negative rational numbers in real-world and mathematical problems. Understand the meanings of arithmetic operations and factorization, and how they relate to one another. Appropriately use calculators and other technologies to solve problems.	
<p>1. Determine the prime factorization of positive integers.</p>	<p>Student Edition: 14-17, 19-21, 27 #42-45, 189 #59-62 <i>Hands-on Mini-Lab</i> 18 <i>Mid-Chapter Practice Test</i> 22 #10-13 <i>The Game Zone</i> 23 <i>Study Guide and Review</i> 43 #22-23</p> <p>Teacher Wraparound Edition: B 14; I-CE 15 #1-2</p> <p>Teacher Resources: <i>Practice Skills</i> 12 <i>Practice: Word Problems</i> 13 <i>Study Guide and Intervention</i> 11</p>
<p>2. Determine the least common multiple and the greatest common divisor of whole numbers.</p>	<p>Student Edition: 177-180, 185 #42-44, 189 #55-58, 194-197, 201 #34-37 <i>Mid-Chapter Practice Test</i> 190 #3-5 <i>The Game Zone</i> 191</p> <p>Teacher Wraparound Edition: A 179, 197; DI 178, 195; I-CE 178, 195; TNT 178</p> <p>Teacher Resources: <i>Practice Skills</i> 222, 237 <i>Practice: Word Problems</i> 223, 238 <i>Study Guide and Intervention</i> 221, 236</p>
<p>3. Use addition, subtraction, multiplication and division of multi-digit whole and decimal numbers to solve multi-step real-world and mathematical problems.</p>	<p>Student Edition: 121-124, 135-138, 141-143, 144-147, 152-155 <i>Study Guide and Review</i> 128 #28-32 <i>Practice Test</i> 129 #22-24 <i>Hands-on Lab</i> 134, 139-140, 150-151 <i>Mid-Chapter Practice Test</i> 148 <i>The Game Zone</i> 149</p> <p>Teacher Wraparound Edition: A 123, 143, 147; B 121; I-CE 122, 142</p> <p>Teacher Resources: <i>Practice: Word Problems</i> 145, 171, 181, 186</p>

STANDARDS	PAGE REFERENCES
<p>4. Multiply and divide, without a calculator, numbers containing up to three digits by numbers containing up to two digits, such as $347 \div 83$ or 4.91×9.2.</p>	<p>Student Edition: 135-138, 141-143, 144-147, 152-155 <i>Hands-on Lab</i> 134, 139-140, 150-151 <i>Mid-Chapter Practice Test</i> 148 <i>The Game Zone</i> 149 <i>Prerequisite Skills</i> 590</p> <p>Teacher Wraparound Edition: A 143, 147, 155; B 135, 144; DU 142; I-CE 136, 142, 145</p> <p>Teacher Resources: <i>Practice Skills</i> 170, 175, 180, 185 <i>Practice: Word Problems</i> 171, 176, 181, 186 <i>Study Guide and Intervention</i> 169, 174, 179, 184</p>
<p>5. Find quotients with remainders and be able to express the remainder in various ways depending on the context of the problem.</p>	<p>Student Edition: 144-147, 152-155, 206-209, 272-275, 276-279 <i>Mid-Chapter Practice Test</i> 148 #13-18 <i>The Game Zone</i> 149 <i>Hands-on Lab</i> 150-151, 270-271</p> <p>Teacher Wraparound Edition: A 275; I-CE 207, 273, 277</p> <p>Teacher Resources: <i>Practice Skills</i> 185, 343, 348 <i>Practice: Word Problems</i> 186, 344, 349 <i>Study Guide and Intervention</i> 184, 342, 347</p>
<p>6. Use the relationship between moving the decimal point and the operations of multiplication or division by powers of 10 to simplify calculations.</p>	<p>Student Edition: 136 #5, 138 #36-41, 404-407, 409-412 <i>Study Tip</i> 404, 405</p> <p>Teacher Wraparound Edition: I-CE 405</p> <p>Teacher Resources: <i>Practice Skills</i> 517 <i>Practice: Word Problems</i> 518 <i>Study Guide and Intervention</i> 516</p>

STANDARDS	PAGE REFERENCES
<p>7. Add, subtract, multiply and divide common fractions and mixed numbers as well as fractions where the common denominator equals one of the denominators.</p>	<p>Student Edition: 228-231, 235-238, 240-243, 244-247, 261-264, 265-267, 272-275, 276-279 <i>The Game Zone</i> 233, 269 <i>Hands-on Lab</i> 259-260, 270-271</p> <p>Teacher Wraparound Edition: DI 229, 266; I-CE 195, 273</p> <p>Teacher Resources: <i>Practice Skills</i> 237, 288, 293, 298 <i>Practice: Word Problems</i> 289, 294, 299, 334, 339 <i>Study Guide and Intervention</i> 236, 287, 292, 297, 332, 337</p>
<p>8. Find, represent and use percentages in real-world and mathematical problems, including percentages greater than 100% and less than 1%.</p>	<p>Student Edition: 404-406, 409-412</p> <p>Teacher Wraparound Edition: DI 404; I-CE 405; TNT 410</p> <p>Teacher Resources: <i>Practice Skills</i> 517, 522 <i>Practice: Word Problems</i> 518, 523 <i>Study Guide and Intervention</i> 516, 521</p>
<p>9. Apply the correct order of operations and grouping symbols when using calculators and other technologies.</p>	<p>Student Edition: 24-27, 28-31, 37 #46-49, 41 #27 <i>Study Guide and Review</i> 44 #32-47 <i>Hands-on Mini-Lab</i> 333</p> <p>Teacher Wraparound Edition: A 27, 31; B 24; I-CE 25, 29</p> <p>Teacher Resources: <i>Calculator Spreadsheet Masters</i> 14</p>
<p>10. Know, use and translate calculator notational conventions to mathematical notation.</p>	<p>Student Edition: <i>Study Tip</i> 19</p> <p>Teacher Wraparound Edition: DI 136</p> <p>Teacher Resources: <i>Calculator Spreadsheet Masters</i> 13</p>

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<p>11. Understand that use of a calculator requires appropriate mathematical reasoning and does not replace the need for mental computation.</p>	<p>Student Edition: 116-119, 206 ex. 1, 207 ex. 2, 3, 223-225, 415-417 <i>Problem-Solving Strategy</i> 32-33, 125-126, 156-157 <i>Hands-on Lab</i> 134 <i>Hands-on Mini-Lab</i> 152</p> <p>Teacher Wraparound Edition: A 119, 143; B 116, 223; DI 116, 136, 223; I-CE 117, 224</p>
<p>III. PATTERNS, FUNCTIONS AND ALGEBRA</p>	
<p>A. Patterns and Functions</p>	
<p><u>Standard:</u> Demonstrate understanding of the rectangular coordinate system.</p>	
<p>1. Demonstrate understanding of the four quadrants in a rectangular coordinate system by writing and plotting ordered pairs.</p>	<p>Student Edition: 320-323, 336 #48 <i>Study Guide and Review</i> 326 #66-73 <i>Practice Test</i> 327 #21-24 <i>Standardized Test Practice</i> 328-329 #10, 17-20, 375 #16</p> <p>Teacher Wraparound Edition: A 323; B 320; I-CE 321-322</p> <p>Teacher Resources: <i>Practice Skills</i> 409 <i>Practice: Word Problems</i> 410 <i>Study Guide and Intervention</i> 408</p>
<p>B. Algebra (Algebraic Thinking)</p>	
<p><u>Standard:</u> Apply arithmetic operations in the correct order to simplify and evaluate numeric expressions in real-world and mathematical problems.</p>	
<p>1. Apply the correct order of operations including addition, subtraction, multiplication, division and grouping symbols to simplify and evaluate numeric expressions.</p>	<p>Student Edition: 24-27, 28-31, 37 #46-49, 41 #27, 47 #15-20 <i>Study Guide and Review</i> 44 #32-47</p> <p>Teacher Wraparound Edition: A 27, 31; B 24; I-CE 25, 29</p> <p>Teacher Resources: <i>Practice Skills</i> 22 <i>Practice: Word Problems</i> 23 <i>Study Guide and Intervention</i> 21</p>

STANDARDS	PAGE REFERENCES
IV. DATA ANALYSIS, STATISTICS AND PROBABILITY	
A. Data and Statistics	
Standard: Represent data and use various measures associated with data to draw conclusions and identify trends.	
<p>1. Collect, organize and represent categorical and numerical data with tables and bar graphs.</p>	<p>Student Edition: 50-53, 56-59 <i>Problem-Solving Strategy</i> 54-55 <i>Spreadsheet Investigation</i> 60-61 <i>The Game Zone</i> 71 <i>Study Guide and Review</i> 90-91 Teacher Wraparound Edition: A 53, 59; B 50, 56; DI 51; I-CE 51-52, 57-58 Teacher Resources: <i>Practice Skills</i> 62, 67 <i>Practice: Word Problems</i> 63, 68 <i>Study Guide and Intervention</i> 61, 66</p>
<p>2. Understand the differences and appropriate use of mean, median and mode.</p>	<p>Student Edition: 76-78, 80-83, 89 #15-18 <i>Spreadsheet Investigation</i> 79, 84-85 <i>Study Guide and Review</i> 92 #17-21 <i>Practice Test</i> 93 #3-6 Teacher Wraparound Edition: DI 76; I-CE 77, 81; TNT 80 Teacher Resources: <i>Practice Skills</i> 87, 92 <i>Practice: Word Problems</i> 88, 93 <i>Study Guide and Intervention</i> 86, 91</p>
<p>3. Find the median and possible outliers.</p>	<p>Student Edition: 76-78, 80-83 <i>Practice Test</i> 93 #5-6 <i>Standardized Test Practice</i> 95 #13 Teacher Wraparound Edition: I-CE 77 Teacher Resources: <i>Practice Skills</i> 87, 92 <i>Practice: Word Problems</i> 88, 93 <i>Study Guide and Intervention</i> 91</p>

STANDARDS	PAGE REFERENCES
B. Probability	
Standard: Calculate and express probabilities numerically, and apply probability concepts to solve real-world and mathematical problems.	
1. Generate and display data in graphs and tables to estimate experimental probabilities.	Student Edition: 433-436, 457 #8-9 <i>Hands-on Lab</i> 426-427, 432 <i>Problem-Solving Strategy</i> 448-449 Teacher Wraparound Edition: DI 433, 438; I-CE 448
2. Represent all possible outcomes for a probability problem with tables, grids and tree diagrams to calculate probabilities and draw conclusions from the results.	Student Edition: 441 # 19, 433-436, 447 #21 <i>Hands-on Lab</i> 432 <i>Mid-Chapter Practice Test</i> 442 #7-9 <i>Problem-Solving Strategy</i> 448-449 Teacher Wraparound Edition: A 436; DI 433; I-CE 434 Teacher Resources: <i>Practice Skills</i> 557 <i>Practice: Word Problems</i> 558 <i>Study Guide and Intervention</i> 556
V. SPATIAL SENSE, GEOMETRY AND MEASUREMENT	
A. Spatial Sense	
Standard: Recognize the relationship between different representations of two- and three-dimensional shapes. Understand the effect of various transformations.	
1. Create models of three-dimensional geometric shapes from two-dimensional representations.	Student Edition: 544, 564-566, 575-578 <i>Hands-on Lab</i> 567, 574 Teacher Wraparound Edition: A 565, 574; DI 564; I-CE 565; PS 581; T 574; TNT 576 Teacher Resources: <i>Practice Skills</i> 715, 725 <i>Practice: Word Problems</i> 716, 726 <i>Study Guide and Intervention</i> 714, 724
2. Predict the position and orientation of simple geometric shapes under transformations such as reflections, rotations and translations.	Student Edition: <i>Hands-on Lab</i> 532-533, 537 Teacher Wraparound Edition: A 533; T 537

STANDARDS	PAGE REFERENCES
3. Identify symmetries in three-dimensional shapes.	<p>Student Edition: This concept is implied on pages 512 #22, 528-531</p> <p>Teacher Resources: <i>Practice Skills</i> 670 <i>Study Guide and Intervention</i> 669</p>
B. Geometry	
Standard: Identify a variety of simple geometric figures by name, calculate various quantities associated with them and use appropriate tools to draw them.	
1. Use facts about angles including the relationship between complementary angles, supplementary angles and the angles within triangles to solve real-world and mathematical problems.	<p>Student Edition: 506-509, 510-612 <i>Hands-on Lab</i> 526-527</p> <p>Teacher Wraparound Edition: A 509; B 506, 510; DI 507; I-CE 507</p> <p>Teacher Resources: <i>Practice: Word Problems</i> 651, 656 <i>Study Guide and Intervention</i> 649, 654</p>
2. Classify triangles as equilateral, isosceles or scalene, and right, acute or obtuse.	<p>Student Edition: 522-525 <i>Hands-on Lab</i> 526-527</p> <p>Teacher Wraparound Edition: A 527; B 522</p> <p>Teacher Resources: <i>Practice Skills</i> 665</p>
3. Find the area and circumference of a circle given the radius or diameter using common approximations of pi where appropriate.	<p>Student Edition: 161-164, 556-559, 566 #18-20 <i>Study Guide and Review</i> 168 #48-53 <i>Practice Test</i> 169 #17-18 <i>Mid-Chapter Practice Test</i> 562 #8-10 <i>The Game Zone</i> 563 <i>Study Guide and Review</i> 580 #10-12</p> <p>Teacher Wraparound Edition: A 164, 556; B 161; DI 162, 557; I-CE 162, 557</p> <p>Teacher Resources: <i>Practice Skills</i> 195, 710 <i>Practice: Word Problems</i> 196, 711 <i>Study Guide and Intervention</i> 194, 709</p>

STANDARDS	PAGE REFERENCES
<p>4. Measure, identify, and draw perpendicular and parallel lines, angles and rectangles by using appropriate tools such as straightedge, ruler, compass, protractor or software.</p>	<p>Student Edition: 507-509, 510-512, 515-517 <i>Hands-on Lab</i> 513-514, 526-527 <i>Practice Test</i> 518 #3-12 <i>Study Guide and Review</i> 538-539</p> <p>Teacher Wraparound Edition: A 509, 517; I-CE 507, 511; DI 40, 510; TNT 507</p> <p>Teacher Resources: <i>Practice Skills</i> 650, 660 <i>Practice: Word Problems</i> 651, 661 <i>Study Guide and Intervention</i> 649, 659</p>
<p>C. Measurement</p>	
<p>Standard: Make calculations of time, length, area and volume within standard measuring systems, using good judgment in choice of units.</p>	
<p>1. Solve problems requiring conversion of units within the U.S. customary system, and within the metric system.</p>	<p>Student Edition: 465-468, 470-473, 476-479, 484-487, 490-493 <i>Hands-on Lab</i> 474-475 <i>Mid-Chapter Practice Test</i> 482 #3-17</p> <p>Teacher Wraparound Edition: A 473, 479, 493; B 470; I-CE 466, 471</p> <p>Teacher Resources: <i>Practice Skills</i> 600, 605, 610, 615, 620 <i>Practice: Word Problems</i> 601, 606, 611, 616, 621 <i>Study Guide and Intervention</i> 599, 604, 609, 614, 619</p>
<p>2. Express measures of time and distance as fractions, mixed numbers and decimals to solve real-world and mathematical problems.</p>	<p>Student Edition: 131 #15, 189 #49-50, 243 #36, 278 #35-36, 465-468, 476-479, 494-497 <i>Hands-on Lab</i> 474-475 <i>Mid-Chapter Practice Test</i> 482 #6-10</p> <p>Teacher Wraparound Edition: DI 466, 477; I-CE 466 #3-4</p> <p>Teacher Resources: <i>Practice: Word Problems</i> 601, 611, 626 <i>Study Guide and Intervention</i> 624</p>

STANDARDS	PAGE REFERENCES
<p>3. Find the area and perimeter of rectangles, squares, triangles and parallelograms by measuring, using a grid or using a formula.</p>	<p>Student Edition: 39-41, 158-160, 546-549, 551-554 <i>Hands-on Lab</i> 464, 550 <i>Spreadsheet Investigation</i> 469</p> <p>Teacher Wraparound Edition: A 41, 549, 554; B 39, 158, 546, 551; DI 40, 158, 547; I-CE 40, 159, 547, 552</p> <p>Teacher Resources: <i>Practice Skills</i> 37, 190, 700, 705 <i>Practice: Word Problems</i> 38, 191, 701, 706 <i>Study Guide and Intervention</i> 36, 189, 699, 704</p>