



Mathematics

**Applications and Concepts
Course 1
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STANDARDS		PAGE REFERENCES
Standard 1: Number and Operation		
Students in Grade 6 read, write, compare, and order whole numbers, fractions, and decimals. Students explain the use of fractions and decimals and their interrelationship. Students add, subtract, multiply, and divide whole numbers and decimals and students add and subtract fractions with unlike denominators and simplify as necessary. Students estimate to predict computation results.		
Goal 1.1: Understand and use numbers.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.1.1.1	Compare magnitudes and relative magnitudes of positive rational numbers, including whole numbers through billions, fractions, and decimals. (317.01.a, 317.01.d)	Student Edition: 108-110, 113 #30-32, 198-201, 205 #27-40, 209 #50 <i>Mid-Chapter Practice Test</i> 114 #5-9 <i>The Game Zone</i> 115 <i>Study Guide and Review</i> 127 #10-13, 212 #35-38 <i>Prerequisite Skills</i> 588 Teacher Wraparound Edition: A 110; DI 108, 199; I-CE 109, 199
6.M.1.1.2	Explain the interrelationship of fractions, decimals, and percents. (317.01.b)	Student Edition: 400-403, 404-406, 412 #43-47, 417 #30-33 <i>Study Guide and Review</i> 420 #32-51 <i>Practice Test</i> 421 #10-18 Teacher Wraparound Edition: A 403, 406; B 400, 404; DI 401, 404; I-CE 401, 405

STANDARDS		PAGE REFERENCES
6.M.1.1.3	Locate the position of integers on a number line.	<p>Student Edition: 294-298, 303 #46-48, 307 #43, 319 #39-42 <i>Mid-Chapter Practice Test</i> 308 #4-6 <i>Study Guide and Review</i> 324 #8-17</p> <p>Teacher Wraparound Edition: A 298; B 294; DI 295; I-CE 295</p>
6.M.1.1.4	Convert between decimals and fractions. (317.01.b)	<p>Student Edition: 202-205, 206-209 <i>Study Guide and Review</i> 212 #42-57</p> <p>Teacher Wraparound Edition: A 205, 209; B 202, 206; DI 203, 207; I-CE 203, 207</p>
6.M.1.1.5	Apply number theory concepts (prime, composite, prime factorization) and identify common factors and common multiples. (317.01.e)	<p>Student Edition: 10-13, 14-17, 177-180, 194-197 <i>Mid-Chapter Practice Test</i> 22 <i>The Game Zone</i> 23</p> <p>Teacher Wraparound Edition: A 13, 179, 197; B 10, 14, 194; DI 11, 15, 178, 195; I-CE 11, 15</p>
6.M.1.1.6	Solve problems using the 4-step process of problem solving (explore, plan, solve, and examine). (318.01.b)	<p>Student Edition: 6-9, 13 #47-48, 17 #60, 27 #47 <i>Mid-Chapter Practice Test</i> 22 #1, 3, 16 <i>Problem-Solving Strategy</i> 32, 54, 125, 156 <i>Study Guide and Review</i> 42 #8-9</p> <p>Teacher Wraparound Edition: A 9; B 6, 28; I-CE 7-8</p>
6.M.1.1.7	Describe the use of integers in real-world situations. (317.01.f)	<p>Student Edition: 292, 294-298, 303 #37-41, 311 Ex. 5 <i>Mid-Chapter Practice Test</i> 308 #11, 20</p> <p>Teacher Wraparound Edition: A 298; B 294, 300; DI 295</p>
6.M.1.1.8	Use appropriate vocabulary.	<p>Student Edition: 8 #2, 13 #42-44, 298 #54-55, 60 <i>Hands-on Lab</i> 299</p> <p>Teacher Wraparound Edition: A 9, 17, 298; B 6, 14, 18, 28, 294, 310; DI 311; I-CE 15</p>

STANDARDS		PAGE REFERENCES
Goal 1.2: Perform computations accurately.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.1.2.1	Recall basic multiplication and division facts from 12 x 12 Times Table. (317.02.d)	Student Edition: 37 #50-53, 99 #13-14, 124 #51 <i>Hands-on Mini-Lab</i> 10
6.M.1.2.2	Add, subtract, multiply, and divide whole numbers, decimals, and simple fractions (including unlike denominators). (317.02.a, 317.02.b, 317.02.c, 317.02.g)	Student Edition: 121-124, 135-138, 141-143, 144-147, 152-155, 228-231, 235-238, 240-243, 244-247, 261-264, 265-267, 272-275, 276-279 <i>Hands-on Lab</i> 134, 139, 150-151, 259-260, 270-271 <i>Prerequisite Skills</i> 589, 590
6.M.1.2.3	Evaluate numerical expressions with whole numbers using the order of operations (excluding exponents). (317.02.e)	Student Edition: 24-27, 28-31, 37 #46-49, 41 #27 <i>Study Guide and Review</i> 44 #32-47 Teacher Wraparound Edition: A 27, 31; B 24; I-CE 25, 29
6.M.1.2.4	Select and use an appropriate method of computation from mental math, paper and pencil, calculator or a combination of the three. (317.02.h)	Student Edition: 116-119, 223-225, 415-417 <i>Problem-Solving Strategy</i> 32-33, 125-126, 156-157 Teacher Wraparound Edition: A 119; B 116, 223; DI 116, 136; I-CE 117
6.M.1.2.5	Use a variety of strategies to solve real life problems. (318.01.a)	Student Edition: 6-9 <i>Problem-Solving Strategy</i> 32-33, 54-55, 125-126, 156-157, 192-193, 226-227, 280-281, 314-315, 358-359, 413-414, 448-449, 488-489, 520-521, 568-569 Teacher Wraparound Edition: A 9, 33, 55; B 6; I-CE 7-8, 32
6.M.1.2.6	Use appropriate vocabulary and notations. (317.02.i)	Student Edition: 118 #1-2, 119 #37, 123 #1, 3 <i>Hands-on Lab</i> 139-140 Teacher Wraparound Edition: A 119, 143; B 24, 28, 116, 141; DI 25, 29, 125

STANDARDS		PAGE REFERENCES
Goal 1.3: Estimate and judge reasonableness of results.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.1.3.1	Estimate to predict computation results. (317.03.a)	Student Edition: 116-119, 223-225, 415-417 <i>Problem-Solving Strategy</i> 32-33, 125-126, 156-157 <i>Prerequisite Skills</i> 592-593 Teacher Wraparound Edition: A 119, 143; B 116, 223; DI 136, 223; I-CE 117, 224
6.M.1.3.2	Explain when estimation is appropriate. (317.03.b)	Student Edition: 116-119, 256-257 <i>Problem-Solving Strategy</i> 125-126 <i>Prerequisite Skills</i> 592-593 <i>Extra Practice</i> 600 Teacher Wraparound Edition: A 119, 126; DI 116; I-CE 117
6.M.1.3.3	Identify whether a given estimate is an overestimate or underestimate. (317.03.c)	Student Edition: 116-119, 219-222, 223-225 <i>Problem-Solving Strategy</i> 156-157 Teacher Wraparound Edition: A 157, 222, 225
6.M.1.3.4	Use a four-function calculator to solve complex grade-level problems.	Student Edition: 206-207 <i>Study Tip</i> 19, 409
6.M.1.3.5	Formulate conjectures and discuss why they must be or seem to be true. (318.02.c)	Student Edition: <i>Hands-on Lab</i> 100-101, 106-107, 218, 234 <i>Problem-Solving Strategy</i> 125-126 Teacher Wraparound Edition: A 119, 126
6.M.1.3.6	Use appropriate vocabulary. (317.03.d)	Student Edition: 112 #1, 116-119 <i>Problem-Solving Strategy</i> 125-126 Teacher Wraparound Edition: A 119, 126, 222; DI 223

STANDARDS		PAGE REFERENCES
Standard 2: Concepts and Principles of Measurement		
Students in Grade 6 select and use appropriate units and tools to make formal measurements in both systems. Students use given formulas for perimeter and area of triangles, circles, and parallelograms, and for circumference and area of circles. Students solve problems involving perimeter and area of rectangles. Students convert unit of measurement within each system in one-step problems.		
Goal 2.1: Understand and use U.S. customary and metric measurements.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.2.1.1	Select and use appropriate units and tools to make formal measurements in both systems. (319.01.a)	Student Edition: 465-468, 470-473, 476-479, 484-487 <i>Spreadsheet Investigation</i> 469 <i>Hands-on Lab</i> 474-475 <i>Mid-Chapter Practice Test</i> 482 <i>The Game Zone</i> 483 Teacher Wraparound Edition: A 487; B 465, 476; DI 466, 471
6.M.2.1.2	Apply estimation of measurement to real-world and content problems using standard measuring devices. (319.01.b)	Student Edition: 39-41, 158-160, 465-468, 477 Ex. 5, 484-487, 570-573 <i>Hands-on Lab</i> 480-481 Teacher Wraparound Edition: B 39; DI 485
6.M.2.1.3	Apply understanding of relationships to solve real-world problems related to elapsed time. (319.01.f)	Student Edition: 494-497 <i>Study Guide and Review</i> 500 #53-60 Teacher Wraparound Edition: A 497; B 494; I-CE 495
6.M.2.1.4	Given the formulas, find the perimeter or circumference and area of triangles, circles and parallelograms (all kinds). (319.01.c, 321.01.e)	Student Edition: 161-164, 180 #37, 546-549, 551-554, 556-559 <i>Study Guide and Review</i> 168 #48-53 <i>Practice Test</i> 169 #17-18 <i>Hands-on Lab</i> 550 Teacher Wraparound Edition: A 164, 549, 554; B 161, 546, 551; DI 162, 547; I-CE 162, 547, 552

STANDARDS		PAGE REFERENCES
6.M.2.1.5	Convert units of measurement within each system in one-step problems (e.g., quarts to gallons and gallons to quarts). (319.01.e)	Student Edition: 465-468, 470-473, 476-479, 484-487, 490-493 <i>Hands-on Lab</i> 474-475 <i>The Game Zone</i> 483 Teacher Wraparound Edition: A 468, 473; B 465; DI 471
6.M.2.1.6	Solve problems involving perimeter and area of rectangles. (321.01.d)	Student Edition: 39-41, 158-160 <i>Hands-on Lab</i> 464, 475 #5-7 <i>Spreadsheet Investigation</i> 469 Teacher Wraparound Edition: A 41, 160; B 39, 158; DI 40, 158; I-CE 159
6.M.2.1.7	Use appropriate vocabulary and notations. (319.01.g)	Student Edition: 161, 465, 470-471, 476, 484-485 <i>Hands-on Lab</i> 464, 474-475, 480-481 Teacher Wraparound Edition: A 41, 164, 472; B 470; DI 162
Goal 2.2: Apply the concepts of rates, ratios, and proportions.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.2.2.1	Identify and write ratios and scales (on a map). (319.03.a)	Student Edition: 380-383, 391-393, 397 #28 <i>Hands-on Lab</i> 394 Teacher Wraparound Edition: A 393; DI 391; I-CE 392
Goal 2.3: Apply dimensional analysis.		
No objectives at this grade level.		

STANDARDS		PAGE REFERENCES
Standard 3: Concepts and Language of Algebra and Functions		
Students in Grade 6 read and use symbols of “<,” “>,” and “=” to express relationships. Students evaluate simple algebraic expressions using substitution. Students extend simple patterns and state a rule that generates the pattern using whole numbers, decimals, fractions as inputs, and students use patterns and functions to represent and solve simple problems.		
Goal 3.1: Use algebraic symbolism as a tool to represent mathematical relationships.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.3.1.1	Discuss the meaning and use of variables in simple expressions and equations. (320.01.a)	Student Edition: 28-31, 34-37 <i>Problem-Solving Strategy</i> 358-359 Teacher Wraparound Edition: B 28, 358; DI 36
6.M.3.1.2	Translate simple word statements into algebraic equations. (320.01.b)	Student Edition: 28-31 <i>Problem-Solving Strategy</i> 358-359 Teacher Wraparound Edition: A 359; B 358; DI 29, 358
6.M.3.1.3	Read and use symbols of “<,” “>,” and “=” to express relationships. (320.01.c)	Student Edition: 37, 108-110, 113 #30-32, 198-201, 205 #37-40, 209 #34-38 <i>The Game Zone</i> 115 <i>Hands-on Lab</i> 354 Teacher Wraparound Edition: A 110, 201; B 108; DI 108, 199; I-CE 109, 199
Goal 3.2: Evaluate algebraic expressions.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.3.2.1	Use the following properties in evaluating numerical expressions: commutative, associative, identity, zero, inverse, and distributive. (320.02.a)	Student Edition: 333-336, 342 #42-43, 347 #42 <i>Hands-on Lab</i> 332 <i>Mid-Chapter Practice Test</i> 348 #7-10 Teacher Wraparound Edition: A 336; B 333; DI 334

STANDARDS		PAGE REFERENCES
6.M.3.2.2	Evaluate simple algebraic expressions using substitution.	Student Edition: 28-31, 37 #46-48, 41 #27 <i>Study Guide and Review</i> 44 #38-47 <i>Practice Test</i> 45 #19-21 Teacher Wraparound Edition: A 31
Goal 3.3: Solve algebraic equations and inequalities.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.3.3.1	Solve one-step equations with whole numbers. (320.03.a)	Student Edition: 34-37, 339-342, 344-347, 350-353, 355-357 <i>Hands-on Lab</i> 354 Teacher Wraparound Edition: A 37, 347, 353; I-CE 35
Goal 3.4: Understand the concept of functions.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.3.4.1	Extend simple patterns and state a rule (function) that generates the pattern using whole numbers, decimals, and fractions as inputs. (323.01.a)	Student Edition: 362-365, 366-369 <i>Study Guide and Review</i> 372 #49-54 <i>Practice Test</i> 373 #20-24 Teacher Wraparound Edition: A 365; B 362; DI 363; I-CE 363
6.M.3.4.2	Describe and extend patterns by using manipulatives and pictorial representations. (323.01.b)	Student Edition: 27 #47, 282-284, 298 #63-65, 303 #49 <i>Problem-Solving Strategy</i> 33 #9, 280-281, 359 #10 Teacher Wraparound Edition: B 282
6.M.3.4.3	Use mathematical models to show change in a real-world context. (323.01.c)	Student Edition: 362-365, 366-369 <i>Hands-on Lab</i> 360-361 Teacher Wraparound Edition: A 361, 369; B 366; DI 363; TNT 367
6.M.3.4.4	Use appropriate vocabulary. (323.01.d)	Student Edition: 282, 362, 366 Teacher Wraparound Edition: A 284; B 282; DI 366; TNT 367

STANDARDS		PAGE REFERENCES
Goal 3.5: Represent equations, inequalities and functions in a variety of formats.		
No objectives at this grade level.		
Goal 3.6: Apply functions to a variety of problems.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.3.6.1	Use patterns to represent and solve simple problems.	Student Edition: 362-365, 366-369 <i>Study Guide and Review</i> 372 #49-54 <i>Practice Test</i> 373 #20-24 Teacher Wraparound Edition: A 365; B 362; DI 363; I-CE 363
Standard 4: Concepts and Principles of Geometry		
Students in Grade 6 describe and classify relationships among types of one-, two- and three-dimensional geometric figures using their defining properties. Students identify congruence, similarities, and symmetry of shapes and students identify and plot points in the first quadrant on a coordinate plane.		
Goal 4.1: Apply concepts of size, shape, and spatial relationships.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.4.1.1	Describe relationships among types of one- and two-dimensional geometric figures, using their defining properties. (321.01.a)	Student Edition: 522-525, 528-531 <i>Hands-on Lab</i> 526-527 Teacher Wraparound Edition: A 525, 527, 530; B 522; DI 523, 529
6.M.4.1.2	Draw and measure various angles and shapes using appropriate tools. (321.01.b)	Student Edition: 506-509, 510-512, 515-517 <i>Hands-on Lab</i> 513-514, 526-527 <i>Mid-Chapter Practice Test</i> 518 #3-12 <i>Study Guide and Review</i> 538-539 Teacher Wraparound Edition: A 509, 517; DI 40, 510; I-CE 507, 511; TNT 507
6.M.4.1.3	Apply fundamental concepts, properties, and relationships among points, lines, rays, and angles. (321.01.c)	Student Edition: 506-509, 528-531 <i>Hands-on Lab</i> 513-514 <i>Study Guide and Review</i> 538, 539 #17-21 Teacher Wraparound Edition: A 509; B 528; I-CE 507

STANDARDS		PAGE REFERENCES
6.M.4.1.4	Describe reflections, translations, and rotations on various shapes. (321.01.g)	Student Edition: 529-531 <i>Hands-on Lab</i> 532-533, 537 Teacher Wraparound Edition: A 533; TNT 528
6.M.4.1.5	Identify congruence, similarities, and line symmetry of shapes. (321.01.d)	Student Edition: 528-531, 534-536 <i>Study Guide and Review</i> 540 <i>Practice Test</i> 541 #13-15 Teacher Wraparound Edition: A 531, 536; B 528, 534; DI 529, 534; I-CE 529, 535
6.M.4.1.6	Discuss the spatial relationship between two- and three-dimensional objects. (321.01.f)	Student Edition: 564-566, 575-578 <i>Hands-on Lab</i> 574 #4 <i>Practice Test</i> 581 #8-10 Teacher Wraparound Edition: B 564; I-CE 565
6.M.4.1.7	Use appropriate vocabulary and symbols. (323.01.h)	Student Edition: 522-523, 528-529, 534-535 Teacher Wraparound Edition: A 525, 531, 536; B 522
Goal 4.2: Apply the geometry of right triangles.		
No objectives at this grade level.		
Goal 4.3: Apply graphing in two dimensions.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.4.3.1	Identify and plot points in the first quadrant on a coordinate plane. (321.02.a)	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 Teacher Wraparound Edition: A 323; B 320; I-CE 321-322

STANDARDS	PAGE REFERENCES
Standard 5: Data Analysis, Probability, and Statistics	
Students in Grade 6 read and interpret tables, charts and graphs, including line graphs, bar graphs, frequency line or line plot, and circle graph. Students collect, organize, and display the data with appropriate notation in tables, charts, and graphs, including line graphs, bar graphs, and frequency line or line plot. Students find measures of central tendency – mean, median, and mode – with simple sets of data and students calculate the range of a set of data. Students predict, perform, and record results of simple probability experiments.	
Goal 5.1: Understand data analysis.	
Objective(s): By the end of Grade 6, the student will be able to:	
6.M.5.1.1 Read and interpret tables, charts, and graphs, including broken line graphs, bar graphs, frequency tables, line plots, and circle graphs. (322.01.a)	Student Edition: 50-53, 56-59, 62-65, 72-75 <i>Spreadsheet Investigation</i> 60-61 <i>Mid-Chapter Practice Test</i> 70 Teacher Wraparound Edition: A 53; B 72; DI 54, 63
6.M.5.1.2 Explain and justify stated conclusions drawn from tables, charts, and graphs. (322.01.b)	Student Edition: 66-69, 75 #30-32, 78 #23, 86-89 <i>Mid-Chapter Practice Test</i> 70 #8-9 Teacher Wraparound Edition: A 69; B 66; DI 68; I-CE 67
6.M.5.1.3 Use appropriate vocabulary and notations. (322.01.c)	Student Edition: 50, 56, 66-69, 72, 76, 80 Teacher Wraparound Edition: A 53, 65, 69; B 56, 76; DI 63
Goal 5.2: Collect, organize, and display data.	
Objective(s): By the end of Grade 6, the student will be able to:	
6.M.5.2.1 Collect, organize, and display the data with appropriate notation in tables, charts, and graphs, including broken line graphs, bar graphs, frequency tables and line plots. (322.02.a)	Student Edition: 50-53, 56-59, 72-75, 76-78, 80-83 <i>Problem-Solving Strategy</i> 54-55 <i>The Game Zone</i> 71 Teacher Wraparound Edition: A 53, 59; B 50, 56, 72; DI 51, 73; I-CE 51-52, 57-58, 73

STANDARDS		PAGE REFERENCES
Goal 5.3: Apply simple statistical measurements.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.5.3.1	Find measures of central tendency – mean, median, and mode – with simple sets of data. (322.03.a)	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
6.M.5.3.2	Calculate the range of a set of data. (322.03.b)	Student Edition: 82-83, 84, 89 #15 <i>Study Guide and Review</i> 92 #20-21 Teacher Wraparound Edition: A 83; I-CE 82 #4
Goal 5.4: Understand basic concepts of probability.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.5.4.1	Predict, perform, and record results of simple probability experiments. (322.04.a)	Student Edition: 428-431, 433-436, 438-441, 444-447, 450-453 <i>Hands-on Lab</i> 426-427 <i>Mid-Chapter Practice Test</i> 442 #3-6 <i>The Game Zone</i> 443 <i>Study Guide and Review</i> 454-456 <i>Practice Test</i> 457 Teacher Wraparound Edition: I-CE 441, 445
6.M.5.4.2	Use the language of probability. (322.04.b)	Student Edition: 428-431, 433-436, 438-441, 444-447, 450-453 <i>Hands-on Lab</i> 426-427 <i>Mid-Chapter Practice Test</i> 442 #3-6 <i>The Game Zone</i> 443 <i>Study Guide and Review</i> 454-456 <i>Practice Test</i> 457 Teacher Wraparound Edition: I-CE 441, 445

STANDARDS		PAGE REFERENCES
Goal 5.5: Make predictions or decisions based on data.		
Objective(s): By the end of Grade 6, the student will be able to:		
6.M.5.5.1	Make predictions based on data. (318.01.c)	Student Edition: 66-69, 75 #30-32, 78 #23, 438-441 <i>Mid-Chapter Practice Test</i> 70 #8-9 <i>Study Guide and Review</i> 455 #22-24 Teacher Wraparound Edition: A 69, 441; B 66, 438; DI 68, 438; I-CE 67, 439