



Math Connects

Concepts, Skills, and Problem Solving

Course 2

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STANDARDS	PAGE REFERENCES
Standard 1: Number and Operation	
Standard 1: Students understand and use basic and advanced concepts of number and number systems.	
Benchmark Expectations	
NUMBERS, NUMBER RELATIONSHIPS, AND NUMBER SYSTEMS	
7.1.1. Use ratios and proportions to represent relationships	Student Edition: 282-286, 287-292, 293-297, 298-303, 304-309, 310-315, 316, 317, 320-326, 327, 334-336, 337 <i>Mini Lab</i> 287, 304 <i>Spreadsheet Lab</i> 327 <i>Study Tip</i> 305, 306, 311 Teacher Edition: AE 283, 288-289, 293-294; ML 287, 304
7.1.2. Explain and use percents greater than 100	Student Edition: 328-331, 345-347, 353 #18, 355, 360, 368 #4, 684 Teacher Edition: AE 345; SQ 344, 355; TOD 360

STANDARDS	PAGE REFERENCES
7.1.3. Use prime factorization to determine the greatest common factor and least common multiple	<p>Student Edition: 181-184, 185, 186-189, 211-214, 222, 224, 225, 676, 678 <i>Mini Lab</i> 181, 211 <i>Reading to Solve Problems</i> 185 <i>Study Tip</i> 182, 187</p> <p>Teacher Edition: AE 181-182, 186-187, 212; KL 181a, 211a; SQ 181, 186, 211</p>
7.1.4. Use integers to represent and compare quantities	<p>Student Edition: 80-83, 84-87, 92, 93-94, 95-99, 100, 101-102, 103-106, 107-111, 114-118, 120-122, 123 <i>Algebra Lab</i> 93-94, 101-102 <i>Mini Lab</i> 103, 107, 114 <i>Study Tip</i> 81</p> <p>Teacher Edition: AE 81, 84-85, 94-97; ML 103, 107, 114</p>
OPERATIONS AND THEIR PROPERTIES	
7.1.5. Explain the effects of arithmetic operations on fractions, decimals, and integers	<p>Student Edition: 93-94, 95-99, 100, 101-102, 103-106, 107-111, 114-118, 120-122, 123, 236-241, 242-246, 247, 250-251, 252-257, 265-270 <i>Algebra Lab</i> 93-94, 101-102 <i>Mini Lab</i> 103, 107, 114</p> <p>Teacher Edition: ML 103, 107, 114</p>
7.1.6. Use order of operations (i.e., parentheses and operations) to simplify numeric expressions	<p>Student Edition: 38-41, 45-47, 48, 52, 53-56, 72, 75, 133, 669, 670 <i>Study Tip</i> 39</p> <p>Teacher Edition: AE 39, 45; ASU 38a; EC 38a; FMC 39; FTE 41; OO 40; SC 40; SQ 38</p>

STANDARDS	PAGE REFERENCES
COMPUTATIONAL FLUENCY AND ESTIMATION	
7.1.7. Add, subtract, multiply, and divide fractions and terminating decimals	<p>Student Edition: 236-241, 242-246, 247, 250-251, 252-257, 265-270, 271-274, 275 <i>Math Lab</i> 250-251 <i>Mini Lab</i> 265 <i>Study Tip</i> 237, 238, 243, 251, 252, 253, 254</p> <p>Teacher Edition: AE 237-238, 242-244, 253-254, 266-267; SQ 236, 242, 252, 265</p>
7.1.8. Solve real-world problems using integers, fractions, decimals, and percents	<p>Student Edition: 80-83, 85-86, 97-98, 104-105, 109-111, 112-113, 116-117, 187-188, 190-191, 193-194, 198-199, 203-204, 207-209, 212-213, 216-219, 345-347, 352-353, 355-358, 363-364, 370-373, 375-377, 379-382, 383 <i>Spreadsheet Lab</i> 383</p>
7.1.9. Estimate the results of problems involving fractions, decimals, and percents	<p>Student Edition: 230-235, 271, 272, 275, 355-360, 385, 389, 685, 679 <i>Study Tip</i> 231, 232, 356</p> <p>Teacher Edition: AE 231-232, 355-357; CB 235; E 358; EF 231; EMN 230; FMC 231, 356; SQ 230, 355; TOD 360</p>
7.1.10. Use proportions to solve problems	<p>Student Edition: 310-315, 316, 317, 320-326, 327, 335-336, 337, 350-354, 540-545 <i>Math Lab</i> 316 <i>Mini Lab</i> 320 <i>Reading Math</i> 311 <i>Spreadsheet Lab</i> 327 <i>Study Tip</i> 311, 321, 322</p> <p>Teacher Edition: AE 311-312, 321-322, 350-352; PP 314, 351; ML 320</p>

STANDARDS	PAGE REFERENCES
Standard 2: Geometry and Spatial Sense	
Standard 2: Student understands and applies geometric concepts and spatial relationships to represent and solve problems in mathematical and nonmathematical situations.	
TWO- AND THREE-DIMENSIONAL SHAPES, GEOMETRIC PROPERTIES AND RELATIONSHIPS	
7.2.1. Make observations about relationships between two- and three-dimensional figures; e.g., a cube is made with six squares	<p>Student Edition: 572-576, 577, 589, 603-606, 607, 608-612, 613, 619, 629, 649, 656 <i>Geometry Lab</i> 607 <i>Mini Lab</i> 572, 589, 613, 619, 649, 656 <i>Measurement Lab</i> 577 <i>Study Tip</i> 609</p> <p>Teacher Edition: AE 609; ML 572, 589, 613, 619, 649, 656; PAA 606, 609</p>
7.2.2. Classify triangles based on side and angle measurements; i.e., scalene, isosceles, equilateral, acute, obtuse, and right	<p>Student Edition: 524-529, 538, 694 <i>Mini Lab</i> 524 <i>Study Tip</i> 525</p> <p>Teacher Edition: AE 525-526; AM 525; CT 526; FMC 525; NTM 529; PAA 529; SQ 524</p>
COORDINATE GEOMETRY	
7.2.3. Draw and label the components of the coordinate plane; i.e., coordinates, quadrants, origin, x- and y-axes	<p>Student Edition: 88-92, 99, 100, 119, 121, 123, 553-557, 558-562, 566, 567, 672, 696, 705, 713 <i>Reading Math</i> 89</p> <p>Teacher Edition: AE 89-90, 554-555, 559; KVL 88a; CB 92; CP 90; HHS 558a; SQ 88</p>
TRANSFORMATION AND SYMMETRY	
7.2.4. Identify relationships between congruent figures and similar figures	<p>Student Edition: 540-545, 553-557, 558-562, LA14-LA17 <i>Mini Lab</i> 540, 553, 558 <i>Reading Math</i> 541, 542 <i>Study Tip</i> 559</p> <p>Teacher Edition: AE 541-542, 554-555, 559, LA15; ML 540, 553, 558; SQ 540, 553, LA14; S LA16; TOD LA17</p>

STANDARDS	PAGE REFERENCES
7.2.5. Draw the result of a transformation in the coordinate plane; i.e., translation, reflection, and rotation	<p>Student Edition: 553-557, 558-562, 563, 566, 567, 576, 582 #27, 696, 713 <i>Mini Lab</i> 553, 558 <i>Reading Math</i> 554 <i>Study Tip</i> 554, 559</p> <p>Teacher Edition: AE 554-555, 559; CB 557; PAA 556; SQ 553, 558; Trf 554, 561; Trsl 554</p>
VISUALIZATION, SPATIAL REASONING, AND GEOMETRIC MODELING	
7.2.6. Build and sketch three-dimensional solids; e.g., using nets, manipulatives	<p>Student Edition: 600-601, 607, 608-612, 613, 629, 646, 649, 656, 659 #20, 664 <i>Geometry Lab</i> 607 <i>Measurement Lab</i> 600-601 <i>Mini Lab</i> 613, 649, 656 <i>Study Tip</i> 601, 609</p> <p>Teacher Edition: A 600, 607; AE 609; PAA 609, 611; SQ 608, 649</p>
<p>Standard 3: Data Analysis, Statistics, and Probability Standard 3: Students use data collection and analysis techniques, statistical methods, and probability to solve problems.</p>	
DATA COLLECTION, DISPLAY, AND INTERPRETATION	
7.3.1. Formulate a question; collect, organize, and display data using a bar, line, and circle graph	<p>Student Edition: 415-421, 422, 423, 425, 426-431, 432-433, 434-437, 438-443, 518-523 <i>Mini Lab</i> 426 <i>Spreadsheet Lab</i> 422, 432-433 <i>Study Tip</i> 427</p> <p>Teacher Edition: AE 416-417, 427-428, 519-520; CG 518; FMC 416, 427; ML 426; SQ 415, 426, 518</p>
PROBABILITY	
7.3.2. Determine possible outcomes using organized lists, tree diagrams, or Venn diagrams	<p>Student Edition: 465-470, 471-474, 478-479, 480, 481, 492, 497 #35, 499, 503, 505 #13, 691 <i>Mini Lab</i> 465, 481</p> <p>Teacher Edition: AE 466-467, 471-472; ML 465, 481; MRC 471a; SQ 465, 471; TD 467; UC 465a</p>

STANDARDS	PAGE REFERENCES
7.3.3. Formulate hypotheses, conduct probability experiments, and draw conclusions from results	<p>Student Edition: 465-470, 471-474, 479, 484-485, 486-490, 491, 497, 499, 502, 503 <i>Mini Lab</i> 465, 486 <i>Probability Lab</i> 491</p> <p>Teacher Edition: AE 467, 487-488; DI 491; FMC 487; ML 465, 486; PAA 474; PG 467; SQ 465, 486</p>
7.3.4. Compute probabilities for simple events	<p>Student Edition: 460-464, 467-470, 472-474, 476-478, 479, 481-483, 485, 486-490, 491, 499-502, 503, 504-505, 690 <i>Probability Lab</i> 491 <i>Study Tip</i> 462</p> <p>Teacher Edition: AE 461-462, 481; DI 464, 491; FMC 461; FO 460; SQ 460; TOD 464</p>
STATISTICAL METHODS	
7.3.5. Calculate and compare information provided by the mean, median, mode, and range of a set of data	<p>Student Edition: 117#39, 402-408, 409, 414, 451, 455, 687, 711 <i>Graphing Calculator Lab</i> 409 <i>Mini Lab</i> 402 <i>Study Tip</i> 405 <i>Test-Taking Tip</i> 404</p> <p>Teacher Edition: A 409; AE 403-405; FCA 409; FMC 403, 404; M 409; ML 402; NTM 408; PAA 407; SQ 402</p>
PREDICTIONS, DATA ANALYSIS, AND INFERENCES	
7.3.6. Describe how scale can make graphs, tables, and charts appear misleading	<p>Student Edition: 440, 444-449, 454, 455 #10, 464 #37, 690 <i>Study Tip</i> 440, 445</p> <p>Teacher Edition: AE 445-446; CD 444a; FMC 445; S 444; SQ 444; US 448; WG 444a</p>

STANDARDS	PAGE REFERENCES
7.3.7. Explain inferences made from statistical information	<p>Student Edition: 422, 423, 424-425, 426-431, 434-437, 438-443, 453-454, 470, 688-690, 711 <i>Mini Lab</i> 426 <i>Spreadsheet Lab</i> 422</p> <p>Teacher Edition: A 422; AE 427-428, 435, 439-440; FMC 427, 435; P 428; S 440; SP 428; SQ 426, 434, 438</p>
<p>Standard 4: Measurement Standard 4: Students use concepts and tools of measurement to describe and quantify the world.</p>	
<p>MEASURABLE ATTRIBUTES, MEASUREMENT SYSTEMS AND UNITS</p>	
7.4.1. Estimate a measurement to the degree of precision that the tool provides	<p>Student Edition: 158, 520, 580-581, 584-588, 589-593, 599, 619-623, 656-659 <i>Mini Lab</i> 619, 656 <i>Study Tip</i> 158, 520, 585</p> <p>Teacher Edition: A 587; AA 584a; AE 580, 585, 590, 657; FMC 585, 590; ML 619, 656</p>
7.4.2. Convert unit measurements within the same system (metric and standard) when solving problems	<p>Student Edition: 160, 298-303, 304-309, 333, 335, 337, 682-683, 709 <i>Mini Lab</i> 304 <i>Study Tip</i> 299, 305, 306</p> <p>Teacher Edition: AE 299-300, 305-307, CU 305; FMC 299, 305; ML 304; PAA 302; SQ 298, 304; TOD 303</p>
7.4.3. Select the appropriate measure of perimeter, area, surface area, or volume to solve a problem	<p>Student Edition: 156-161, 162, 589, 594-595, 600-601, 613-618, 619-623, 629, 646-647, 649-653, 654-655, 665 #8 <i>Measurement Lab</i> 600-601, 654-655 <i>Mini Lab</i> 589, 613, 619, 649 <i>Study Tip</i> 157, 615, 630</p> <p>Teacher Edition: AU 614; FMC 614, 620; ML 589, 613, 619, 649</p>

STANDARDS	PAGE REFERENCES
MEASUREMENT TOOLS, TECHNIQUES, AND FORMULAS	
7.4.4. Select and use appropriate tools and units to determine the measurements needed for calculating perimeter, circumference, area, surface area, and volume	<p>Student Edition: 156-161, 162, 596-599, 600-601, 613-618, 619-623, 629, 630, 649-653, 654-655, 665 #8 <i>Measurement Lab</i> 600-601, 654-655 <i>Mini Lab</i> 613, 619, 649 <i>Study Tip</i> 157, 158, 615, 630</p> <p>Teacher Edition: AU 614; FMC 614, 620</p>
7.4.5. Solve problems involving scale factors, using ratio and proportion	<p>Student Edition: 654-655, 320-326, 327 <i>Measurement Lab</i> 654-655 <i>Mini Lab</i> 320 <i>Spreadsheet Lab</i> 327 <i>Study Tip</i> 321, 322</p> <p>Teacher Edition: A 327; AE 321-322; ETC 327; FCA 327; FMC 322; ML 320; NTM 326; PAA 325; SD 320a; SQ 320; TT 327</p>
7.4.6. Use formulas to determine the perimeter and area of trapezoids	<p>Student Edition: 578-582, 588 #45, 593 #38 <i>Measurement Lab</i> 577</p> <p>Teacher Edition: A 577; AE 579-580; AP 578a; AT 580; DI 582; ETC 577; MMAT 577; VS 578a</p>
7.4.7. Use area formulas to determine the surface area of right cylinders	<p>Student Edition: 656-659, 660, 662, 663, 703, 715, 725 #18, 729 #17, 748-749, <i>Mini Lab</i> 656</p> <p>Teacher Edition: AE 657; CBLC 656a; DI 659; FMC 657; ML 656; SQ 656; TOD 659</p>
7.4.8. Use formulas to determine the volume of right cylinders	<p>Student Edition: 619-623, 630, 631, 633 #12, 653 #26, 701, 714, 733 #7, 748-749 <i>Mini Lab</i> 619</p> <p>Teacher Edition: AE 620; DI 620, 622; FMC 620; ML 619; SQ 619; ST 619a; TOD 623</p>

STANDARDS	PAGE REFERENCES
7.4.9. Determine the area of irregularly shaped objects	<p>Student Edition: 580-581, 592, 594-595, 596-599, 606, 612, 628, 629 #3-#4, 633 #8, 647, 653 #20, 699, 714, 749</p> <p>Teacher Edition: ACF 597; AE 580, 597; FMC 597; MA 596a; SQ 596; TOD 599</p>
Standard 5: Algebra, Functions and Patterns	
Standard 5: Students use algebraic concepts, functions, patterns, and relationships to solve problems.	
PATTERNS, RELATIONS, AND FUNCTIONS	
7.5.1. Create tables and graphs to analyze and describe patterns	<p>Student Edition: 57-61, 62, 63-67, 68-69, 74, 112-113, 163-167, 168, 172, 173, 263 #66, 293-297, 303, 304, 309 #47, 316, 317 #8, 318, 334, 337, 338 #6 <i>Graphing Calculator Lab</i> 68-69, 168 <i>Math Lab</i> 316 <i>Mini Lab</i> 57, 304 <i>Study Tip</i> 164</p>
NUMERIC AND ALGEBRAIC REPRESENTATIONS	
7.5.2. Create algebraic expressions and equations to represent word phrases and sentences	<p>Student Edition: 63-67, 74, 75 #24, 76, 128-133, 170, 173 <i>Reading Math</i> 129</p> <p>Teacher Edition: AE 63-74, 128-130; FMC 129; FTE 132; L 129; SQ 128; TOD 133; WAE 131</p>
7.5.3. Apply the order of operations and the commutative, associative, and distributive properties to evaluate numeric expressions	<p>Student Edition: 38-41, 45-47, 48, 52, 53-56, 61, 70, 72, 75, 96, 108, 669, 670, <i>Study Tip</i> 39, 54</p> <p>Teacher Edition: AE 39, 45, 53-54; FMC 39, 54, 96, 108; PAA 54, 61; SQ 38, 53</p>
7.5.4. Use inverse operations and properties of equality to solve one-step equations and inequalities in one variable	<p>Student Edition: 134-135, 136-141, 142-146, 147, 170-171, 173 <i>Algebra Lab</i> 134-135 <i>Mini Lab</i> 142 <i>Study Tip</i> 137, 138</p> <p>Teacher Edition: AE 137-138, 143-144; CYM 144; FMC 137, 143; ML 142; PAA 138; SE 143; SQ 136, 142; T 134-135</p>

STANDARDS	PAGE REFERENCES
MATHEMATICAL MODELING	
7.5.5. Write one-step equations and inequalities to represent problem situations	<p>Student Edition: 57-61, 63-67, 75 #24, 80-83, 128-133, 170, 173 <i>Mini Lab</i> 57 <i>Reading Math</i> 129 <i>Study Tip</i> 59, 64, 81</p> <p>Teacher Edition: AE 58-59, 63-64, 81, 128-130; FMC 129; L 129; ML 57; PAA 61; SQ 57, 63, 128; TOD 133; WAE 131</p>
RATES OF CHANGE	
7.5.6. Graph change over time; e.g., growth, distance, population	<p>Student Edition: 316, 424-425, 426-421, 443, 444-449, 453-454, 455, 457 #13, 688-690, 711 <i>Math Lab</i> 316 <i>Mini Lab</i> 426 <i>Study Tip</i> 427, 444</p> <p>Teacher Edition: AE 424, 427-428, 445-446; FMC 427, 445; ML 427; P 428; SP 428; SQ 424, 426; WIP 424a</p>