



# Math Connects

Concepts, Skills, and Problem Solving

Course 2

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STANDARDS	PAGE REFERENCES
<b>Number and Operations</b>	
<b>1. Understand numbers, ways of representing numbers, relationships among numbers and number systems</b>	
<b>A Read, write and compare numbers</b>	
compare and order all <u>positive rational numbers</u> and find their approximate location on a number line	<b>Student Edition:</b> 80-83, 84-87, 120, 215-220, 224, 235 #51-#54, LA2-LA5, 679, 707 #18 <i>Practice Test</i> 225 <b>Teacher Wraparound Edition:</b> A 220; AA 218, 219, 220; AE 216, 217; T 215
<b>B Represent and use rational numbers</b>	
recognize and generate equivalent forms of fractions, decimals and percents	<b>Student Edition:</b> 196-200, 202-205, 206-210, 223, 224, 328-332, 677, 678, 684, 707 <i>Mid-Chapter Quiz</i> 201 <i>Practice Test</i> 225 <b>Teacher Wraparound Edition:</b> AE 197, 203, 207; FMC 197, 203, 207; PA 200; T 328; TNT 199

STANDARDS	PAGE REFERENCES
<b>C Compose and decompose numbers</b>	
<p>*recognize equivalent representations for the same number and generate them by <u>decomposing and composing numbers</u>, including exponential notation</p>	<p><b>Student Edition:</b> 30-33, 34-37, 38-41, 53-56, 71, 72, 73, 181-184, LA2-LA5, 668, 669, 670, 676, 707 #1-#3, 720 #3, 724 #3, 737 <i>Practice Test 75</i></p> <p><b>Teacher Wraparound Edition:</b> AA 55; AE 31, 35, 39, 182; FMC 31, 35, 54; PA 33; TNT 40</p>
<b>D Classify and describe numeric relationships</b>	
<b>2. Understand meanings of operations and how they relate to one another</b>	
<b>A Represent operations</b>	
<b>B Describe effects of operations</b>	
<p>*describe the effects of all operations on <u>rational numbers</u> including integers</p>	<p><b>Student Edition:</b> 95-99, 103-106, 107-111, 114-118, 236-241, 242-246, 252-257, 265-270, 298-303, 304-309, 736, 737, 738 <i>Algebra Lab 93-94, 101-102</i> <i>Math Lab 250-251</i></p> <p><b>Teacher Wraparound Edition:</b> AE 97, 104, 108, 115, 238; PA 257</p>
<b>C Apply properties of operations</b>	
<p>apply <u>properties of operations</u> (including order of operations) to positive rational numbers and integers</p>	<p><b>Student Edition:</b> 38-41, 42-43, 44-47, 54-56, 72-73, 76-77, 156-161, LA6-LA9, 669, 670, 672 <i>Practice Test 75</i></p> <p><b>Teacher Wraparound Edition:</b> A LA9; AA 55, 56; AE 39, 45, 53, 54, 157, LA8; FMC 54, 108; T 53, 107; TNT 53</p>
<b>D Apply operations on real and complex numbers</b>	
<p>*approximate the value of square roots to the nearest whole number</p>	<p><b>Student Edition:</b> 30-33, 34-37, 41 #41, 71, 72, 668, 737 <i>Practice Test 75</i></p> <p><b>Teacher Wraparound Edition:</b> AE 31, 35; FMC 35; T 30, 34; TNT 35</p>

STANDARDS	PAGE REFERENCES
<b>3. Compute fluently and make reasonable estimates</b>	
<b>A Describe or represent mental strategies</b>	
<b>B Develop and demonstrate fluency</b>	
<b>C Compute problems</b>	
apply all operations on rational numbers including integers	<p><b>Student Edition:</b>  49-52, 53-56, 82-83, 86-87, 95-99, 103-105,  107-111, 112-113, 114-118, 124-125, 668, 669,  670, 705  <i>Algebra Lab</i> 101-102  <i>Practice Test</i> 123  <i>Study Guide and Review</i> 120-122</p> <p><b>Teacher Wraparound Edition:</b>  AA 111; AE 54, 96, 97, 104, 108; P 98; T 53, 95</p>
<b>D Estimate and justify solutions</b>	
*estimate and justify the results of all operations on rational numbers	<p><b>Student Edition:</b>  4-5, 230-235, 343, 355-360, 366-367, 377 #6-#17,  385, 386, 390 #4, 636-639, 679, 685, 686, 701, 735  <i>Practice Test</i> 389</p> <p><b>Teacher Wraparound Edition:</b>  AA 25, 46, 343, 360; FMC 356, 637; T 355;  TNT 230, 358</p>
<b>E Use proportional reasoning</b>	
solve problems involving proportions, such as scaling and finding equivalent ratios	<p><b>Student Edition:</b>  320-326, 336, 540-545, 551 #36, 557 #28, 565,  LA14-LA17, 684, 695, 724 #10, 732 #4  <i>Measurement Lab</i> 654-655  <i>Practice Test</i> 337  <i>Spreadsheet Lab</i> 327</p> <p><b>Teacher Wraparound Edition:</b>  A 545; AE 321, 322, 542; FMC 322</p>

STANDARDS	PAGE REFERENCES
<b>Algebraic Relationships</b>	
<b>1. Understand patterns, relations and functions</b>	
<b>A Recognize and extend patterns</b>	
<b>B Create and analyze patterns</b>	
analyze patterns represented <u>graphically</u> or <u>numerically</u> with words or <u>symbolic rules</u> , including <u>recursive notation</u>	<b>Student Edition:</b> 27, 28 #7-#8, 57-61, 74, 77 #13, 112-113, 122, 146 #45, 149 #11, 670, 673, 704 #11, 705 #13 <i>Algebra Lab 62</i> <i>Mini Lab 44</i> <b>Teacher Wraparound Edition:</b> AE 58, 59, 112; EC 62; PA 61
<b>C Classify objects and representations</b>	
compare and contrast various forms of <u>representations</u> of patterns	<b>Student Edition:</b> 57-61, 74, 76 #3, 77 #13, 112-113, 122, 673, 704 #11 <i>Algebra Lab 62</i> <i>Mini Lab 44</i> <b>Teacher Wraparound Edition:</b> AE 59; EC 62; F 112; PA 61; T 62
<b>D Identify and compare functions</b>	
identify <u>functions</u> as <u>linear</u> or <u>nonlinear</u> from tables, graphs or equations	<b>Student Edition:</b> 63-67, 74, 163-167, 172, 671, 676, 706 <i>Graphing Calculator Lab 68-69, 168</i> <i>Practice Test 173 #22-#25</i> <b>Teacher Wraparound Edition:</b> A 69; AE 63, 165; FMC 64, 164; TNT 66, 166
<b>E Describe the effects of parameter changes</b>	

STANDARDS	PAGE REFERENCES
<b>2. Represent and analyze mathematical situations and structures using algebraic symbols</b>	
<b>A Represent mathematical situations</b>	
<p>use <u>symbolic algebra</u> to represent unknown quantities in expressions or equations and solve linear equations with one variable</p>	<p><b>Student Edition:</b>            44-47, 49-52, 73, 128-133, 136-141, 142-146, 151-155, 170, 171, 670, 674, 675, 706  <i>Algebra Lab</i> 134-135  <i>Practice Test</i> 173  <b>Teacher Wraparound Edition:</b>            AE 45, 50, 129, 138, 143, 152; FMC 45, 50; TNT 44, 151</p>
<b>B Describe and use mathematical manipulation</b>	
<p>use properties to generate equivalent forms for simple algebraic expressions that include positive rationals and integers</p>	<p><b>Student Edition:</b>            136-141, 142-146, 151-155, 161 #45-#49, 170, 171, 674, LA6-LA9  <i>Algebra Lab</i> 134-135  <i>Mid-Chapter Quiz</i> 147  <b>Teacher Wraparound Edition:</b>            AA 135; AE 137, 143, 152; FMC 143; T 136; TNT 136</p>
<b>C Utilize equivalent forms</b>	
<b>D Utilize systems</b>	
<b>3. Use mathematical models to represent and understand quantitative relationships</b>	
<b>A Use mathematical models</b>	
<p><u>model</u> and solve problems, using multiple representations such as graphs, tables, expressions, and linear equations</p>	<p><b>Student Edition:</b>            136, 148-149, 156-161, 163-167, 318-319, 320-326, 366-367  <i>Algebra Lab</i> 134-135  <i>Graphing Calculator Lab</i> 168  <i>Math Lab</i> 342-343  <i>Mini Lab</i> 142, 151  <i>Spreadsheet Lab</i> 327  <b>Teacher Wraparound Edition:</b>            AA 134; AE 321, 325, 345</p>

STANDARDS	PAGE REFERENCES
<b>4. Analyze change in various contexts</b>	
<b>A Analyze change</b>	
compare situations with constant or varying rates of change	<b>Student Edition:</b> 287-292, 293-297, 303 #47, 334, 682, 709 #6, 724 #5, 729 #18 <i>Mid-Chapter Quiz</i> 317 <i>Practice Test</i> 337 <i>Real World Example</i> 144 <b>Teacher Wraparound Edition:</b> AE 288, 293, 294; FMC 294; T 287; TNT 144, 288
<b>Geometric and Spatial Relationships</b>	
<b>1. Analyze characteristics and properties of two-and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships</b>	
<b>A Describe and use geometric relationships</b>	
*identify the 2-dimensional cross-section of a 3-dimensional shape	<b>Student Edition:</b> 745-746 <b>Teacher Wraparound Edition:</b> PA 609
<b>B Apply geometric relationships</b>	
describe relationships between <u>corresponding sides</u> , <u>corresponding angles</u> and corresponding perimeters of <u>similar polygons</u>	<b>Student Edition:</b> 540-545, 546-551, 557 #28, 565, LA14-LA17, 695 <i>Geometry Lab</i> 552 <i>Practice Test</i> 567 #10 <b>Teacher Wraparound Edition:</b> AA LA17; AE 541, 542, LA15; DI 545; FMC 541; TNT 542, LA16
<b>C Compose and decompose shapes</b>	
<b>2. Specify locations and describe spatial relationships using coordinate geometry and other representational systems</b>	
<b>A Use coordinate systems</b>	
use coordinate geometry to construct and identify geometric shapes in the <u>coordinate plane</u> using their properties	<b>Student Edition:</b> 553-557, 558-562, 566, 696, 713 #12-#13, 721 #9, 724 #11, 729 #13, 743-744 <b>Teacher Wraparound Edition:</b> AA 554, 555, 559, 561; AE 555, 559; FMC 554

STANDARDS	PAGE REFERENCES
<b>3. Apply transformations and use symmetry to analyze mathematical situations</b>	
<b>A Use transformations on objects</b>	
<b>B Use transformations on functions</b>	
describe the relationship between the scale factor and the perimeter of the image using a dilation (contractions-magnifications) (stretching/ shrinking)	<b>Student Edition:</b> 320-326, 336, 684, 709 #14 <i>Practice Test</i> 337 #15-#16 <i>Spreadsheet Lab</i> 327 <b>Teacher Wraparound Edition:</b> AA 325; AE 321, 322; EC 327; FMC 322; T 320; TNT 321
<b>C Use symmetry</b>	
*determine all lines of symmetry of polygons	<b>Student Edition:</b> 558-562, 696 <i>Practice Test</i> 567 #15-#16 <b>Teacher Wraparound Edition:</b> AA 560; AE 559
<b>4. Use visualization, spatial reasoning and geometric modeling to solve problems</b>	
<b>A Recognize and draw three-dimensional representations</b>	
*use spatial visualizations to identify various 2-dimensional views of <u>isometric drawings</u>	<b>Student Edition:</b> 603-606, 608-612, 629, 699, 700, 714 #8-#9, 745-746 <i>Geometry Lab</i> 607 <i>Measurement Lab</i> 600-601 <b>Teacher Wraparound Edition:</b> AA 601, 611, 629; AE 604, 609; FMC 604; PA 609, 611
<b>B Draw and use visual models</b>	
draw or use <u>visual models</u> to represent and solve problems	<b>Student Edition:</b> 510, 513 #18-#19, 518-523, 524-529, 530, 546-551, 553-557, 558-562, 603-606, 608-612 <i>Geometry Lab</i> 532, 552, 607 <b>Teacher Wraparound Edition:</b> AA 527, 561; AE 519, 520, 526; TNT 518, 519, 550

STANDARDS	PAGE REFERENCES
<b>Measurement</b>	
<b>1. Understand measurable attributes of objects and the units, systems and processes of measurement</b>	
<b>A Determine unit of measurement</b>	
<p>*identify and justify the unit of measure for volume (customary and metric)</p>	<p><b>Student Edition:</b> 298-303, 304-309, 315 #52, 317 #15, 335, 613-618, 619-623, 627, 628, 683, 700, 733 #7, 747 <i>Practice Test</i> 631, 663</p> <p><b>Teacher Wraparound Edition:</b> AA 302; AE 300, 615; DI 308, 622; FMC 299, 305; TNT 305, 614</p>
<b>B Identify equivalent measures</b>	
<p>identify the equivalent area and volume measures within a system of measurement e.g., sq ft. to sq in, m<sup>3</sup> to cm<sup>3</sup>)</p>	<p><b>Student Edition:</b> 572-576, 578-582, 589-593, 594, 596-601, 613-618, 619-623, 656-659, 697, 700, 703 <i>Measurement Lab</i> 601 <i>Practice Test</i> 631, 663</p> <p><b>Teacher Wraparound Edition:</b> A 593; AA 581, 617; AE 573, 579, 580, 590, 597, 657; TNT 614</p>
<b>C Tell and use units of time</b>	
<p>*solve problems involving addition and subtraction of time (hours, minutes and seconds)</p>	<p><b>Student Edition:</b> 149 #6, 194 #27, 205 #50, 245 #34</p>
<b>D Count and compute money</b>	
<b>2. Apply appropriate techniques, tools and formulas to determine measurements</b>	
<b>A Use standard or nonstandard measurement</b>	
<b>B Use angle measurement</b>	
<p>*use tools to measure angles to the nearest degree and classify the angle as acute, obtuse, right, straight, or reflex</p>	<p><b>Student Edition:</b> 510-513, 514-517, 518, 523 #29-#30, 524-529, 530, 531 #3, 564, 693, 713 #1-#2 <i>Geometry Lab</i> 532 <i>Mini Lab</i> 524 <i>Practice Lab</i> 567</p> <p><b>Teacher Wraparound Edition:</b> AA 515; AE 511; FMC 511, 515; PA 529; T 510, 518, 532; TNT 512</p>

STANDARDS	PAGE REFERENCES
<b>C Apply geometric measurements</b>	
solve problems involving circumference and/or area of a circle and surface area/volume of a rectangular or triangular prism, or cylinder	<b>Student Edition:</b> 584-588, 589-593, 595 #9, 613-618, 619-623, 627, 628, 630, 697, 698, 700, 714 <i>Measurement Lab</i> 583 <i>Practice Test</i> 631 <b>Teacher Wraparound Edition:</b> AE 585, 590, 614, 620; DI 590, 615, 622; TNT 587
<b>D Analyze precision</b>	
<b>E Use relationships within a measurement system</b>	
*convert from one unit to another within a system of measurement (capacity) and convert square or cubic units within the same system of measurement	<b>Student Edition:</b> 572-576, 578-582, 589-593, 594, 596-601, 613-618, 619-623, 656-659, 697, 700, 703 <i>Measurement Lab</i> 601 <i>Practice Test</i> 631, 663 <b>Teacher Wraparound Edition:</b> A 593; AA 581, 617; AE 573, 579, 580, 590, 597, 657; TNT 614
<b>Data and Probability</b>	
<b>1. Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them</b>	
<b>A Formulate questions</b>	
<b>B Classify and organize data</b>	
<b>C Represent and interpret data</b>	
select, create and use appropriate graphical representation of data, including circle graphs, <u>histograms</u>	<b>Student Edition:</b> 408 #36, 410-414, 415-421, 423, 424-425, 426-431, 434-437, 444-449, 518-523, 688 <i>Practice Test</i> 455 <i>Spreadsheet Lab</i> 422, 432-433 <b>Teacher Wraparound Edition:</b> AA 421, 425; AE 411, 416, 428, 435; FMC 412, 416, 427; T 422; TNT 410

STANDARDS	PAGE REFERENCES
<b>2. Select and use appropriate statistical methods to analyze data</b>	
<b>A Describe and analyze data</b>	
find, use and interpret <u>measures of center</u> and spread, including ranges	<p><b>Student Edition:</b>  396-401, 402-408, 410-414, 421 #33-#34, 451, LA21-LA25, 687, 711 #1-#5, 725 #19-#21  <i>Graphing Calculator Lab</i> 409  <i>Mid-Chapter Quiz</i> 423  <i>Practice Test</i> 455</p> <p><b>Teacher Wraparound Edition:</b>  AE 398, 403, 405, 411, LA22; FMC 397, 404; PA 407</p>
<b>B Compare data and representations</b>	
<b>C Represent data algebraically</b>	
<b>3. Develop and evaluate inferences and predictions that are based on data</b>	
<b>A Develop and evaluate inferences</b>	
use observations about differences between samples to make <u>conjectures</u> about the populations from which the samples were taken	<p><b>Student Edition:</b>  426-431, 434-437, 438-443, 444-449, 454, 464 #37, 690, 711 #11-#12, 733 #8  <i>Practice Test</i> 455  <i>Spreadsheet Lab</i> 432-433</p> <p><b>Teacher Wraparound Edition:</b>  AE 435, 439, 440, 445, 446; FMC 439, 445; PA 437; T 438; TNT 428, 440</p>
<b>B Analyze basic statistical techniques</b>	

STANDARDS	PAGE REFERENCES
<b>4. Understand and apply basic concepts of probability</b>	
<b>A Apply basic concepts of probability</b>	
<p>use models to compute the probability of an event and make conjectures (based on theoretical probability) about the results of experiments</p>	<p><b>Student Edition:</b>  460-464, 465-470, 479, 480-483, 484-485, 486-490, 492-497, 513 #23-#26, 690, 693, 712, 725 #22-#23  <i>Practice Test</i> 503  <i>Probability Lab</i> 491  <i>Study Guide and Review</i> 499-502</p> <p><b>Teacher Wraparound Edition:</b>  A 483; AE 461, 462, 466, 467; DI 464; FMC 466, 487; TNT 460, 467, 486</p>
<b>B Use and describe compound events</b>	