



Math Connects

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STANDARDS	PAGE REFERENCES
<p>STANDARD 4.1 (NUMBER AND NUMERICAL OPERATIONS) ALL STUDENTS WILL DEVELOP NUMBER SENSE AND WILL PERFORM STANDARD NUMERICAL OPERATIONS AND ESTIMATIONS ON ALL TYPES OF NUMBERS IN A VARIETY OF WAYS.</p>	
<p>By the end of Grade 2, students will:</p>	
<p>Number Sense</p>	
<ul style="list-style-type: none"> Use real-life experiences, physical materials, and technology to construct meanings for numbers. 	<p>Student Edition: 243-244, 245-246, 249-250, 419-422, 423-424, 429-432, 433-434, 461-462 <i>Math at Home</i> 15-16 <i>Practice with Technology</i> 435-436 Teacher Edition: A 244, 432; ATS 30, 250; I 419, 423; T 23, 420; WM 26, 462</p>
<ul style="list-style-type: none"> Construct and label sets of 20 	<p>This objective can be met through classroom discussion and activities.</p>
<ul style="list-style-type: none"> Recognize number words of sets through 20 	<p>Student Edition: 23-26, 27-28, 29-30 <i>Mid-Chapter Check</i> 31-32 #6, #9-#11 Teacher Edition: ATS 24; I 29; IWO 23B, 29B; T 23, 29; WM 26</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Identify number sense based on 100 	<p>Student Edition: 249-252 <i>Looking Ahead</i> LA7-LA8</p> <p>Teacher Edition: A 252; BMV 249A; DI LA7B; I LA7; RMV LA7A; SGO 249B; T 249, LA7; WM 252, LA8</p>
<ul style="list-style-type: none"> Understand base ten system: 10 ones = 1 ten 	<p>Student Edition: 419-422, 423-424, 429-432, 433-434 <i>Extra Practice</i> 425 <i>Game Time</i> 426 <i>Mid-Chapter Check</i> 437 <i>Practice with Technology</i> 435-436 <i>Test Practice</i> 451 #1-#4</p> <p>Teacher Edition: A 422, 424; ATS 430; BMV 423A; I 419, 423; SGO 419B; T 420, 423, 430; WM 432</p>
<ul style="list-style-type: none"> 10 tens = 100 	<p>Student Edition: LA7-LA8 <i>Talk About It</i> 420</p> <p>Teacher Edition: I LA7; IWO LA7B</p>
<ul style="list-style-type: none"> Count items up to 100 	<p>Student Edition: 25, 27-28, 29-30, 243-244, 245-246 <i>Are You Ready</i> 48 <i>Chapter Review/Test</i> 44 #6-#7 <i>Mid-Chapter Check</i> 31-32 <i>Test Practice</i> 45-46 #1-#2, #6, #11-#12</p> <p>Teacher Edition: A 26; ATS 30, 246, 250, 430; DI 27B; DR 33A; I 27; IWO 29B; SGO 23B, 243B; T 27</p>
<ul style="list-style-type: none"> Read and write numbers to 100 	<p>Student Edition: 23-26, 27-28, 29-30, 249-252, 429-432, 433-434 <i>Chapter Review/Test</i> 44 #6-#7 <i>Mid-Chapter Check</i> 253 <i>Test Practice</i> 45 #3</p> <p>Teacher Edition: A 28; ATS 24, 30; DI 29B; I 23, 29; IWO 23B; SGO 429B; T 23</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Compare and order whole numbers up to 100 	<p>Student Edition: 35-36, 39-40, 443-444, 445-446 <i>Chapter Review/Test 44 #8-#12</i> <i>Extra Practice 37</i> <i>Game Time 38</i></p> <p>Teacher Edition: A 36, 40, 444; ATS 36, 40, 444, 446; DI 443B, 445B; DR 39A; RMV 443A; T 443, 445</p>
<ul style="list-style-type: none"> Use the words higher, lower, greater, and less to compare two numbers 	<p>Student Edition: 35-36, 443-444 <i>Chapter Review/Test 44 #8-#9</i> <i>Extra Practice 37</i> <i>Game Time 266</i> <i>Test Practice 46 #7</i></p> <p>Teacher Edition: A 36, 444; ATS 36, 444; BMV 443A; DR 445A; I 443; SGO 443B; T 443</p>
<ul style="list-style-type: none"> Count money using coins 	<p>Student Edition: 351-352, 353-354, 355-356, 357-358, 363-364, 365-366, 371-372 <i>Extra Practice 373</i> <i>Chapter Review/Test 377-378</i> <i>Game Time 374</i> <i>Math at Home 349-350</i> <i>Mid-Chapter Check 361-362</i> <i>Practice with Technology 367-368</i> <i>Problem-Solving Investigation 369-370</i> <i>Problem-Solving Strategy 359-360</i> <i>Test Practice 379-380</i></p> <p>Teacher Edition: BMV 351A; DI 351B; PS 375-376</p>
<ul style="list-style-type: none"> Quickly count by 1's to 100 	<p>Student Edition: 249-252</p> <p>Teacher Edition: ATS 250; BMV 249A; DI 249B; T 249</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Quickly skip count by 10's to 100 	<p>Student Edition: 245-246, 259-260, 261-262 <i>Chapter Review/Test</i> 269-270 <i>Extra Practice</i> 265 <i>Problem-Solving Investigation</i> 257-258</p> <p>Teacher Edition: A 246; ATS 246; BMV 259A; DI 245B, 259B, 261B; PS 267-268; RMV 245A; T 245, 259, 261; WM 260</p>
<ul style="list-style-type: none"> Quickly skip count by 5's to 50 	<p>Student Edition: 259-260, 261-262 <i>Chapter Review/Test</i> 269-270 <i>Extra Practice</i> 265 <i>Problem-Solving Investigation</i> 257-258</p> <p>Teacher Edition: ATS 260; BMV 259A; DI 259B 261B; PS 267-268; RMV 261A; T 259, 261; WM 260</p>
<ul style="list-style-type: none"> Quickly skip count by 2's to 20 	<p>Student Edition: 259-260, 261-262 <i>Chapter Review/Test</i> 269-270 <i>Extra Practice</i> 265 <i>Problem-Solving Investigation</i> 257-258</p> <p>Teacher Edition: BMV 259A; DI 259B, 261B; T 259, 261; WM 260</p>
<ul style="list-style-type: none"> Count backwards from 20 to 1 	<p>The following references discuss counting backwards and can be used to meet this objective.</p> <p>Student Edition: <i>Problem Solving</i> 40 #15-#16 <i>Writing in Math</i> 252 #23</p>
<ul style="list-style-type: none"> Name the number before and after and between a given number 	<p>Student Edition: 39-40, 445-446 <i>Chapter Review/Test</i> 44 #10-#11, 450 #11-#16 <i>Test Practice</i> 45-46 #5, #10</p> <p>Teacher Edition: A 40, 446; ATS 40; BMV 39A; SGO 445B; T 445</p>
<ul style="list-style-type: none"> Recognize odd and even numbers 	<p>Student Edition: 263-264 <i>Chapter Review/Test</i> 270 #16-#17</p> <p>Teacher Edition: A 264; ATS 264; BMV 263A; DI 263B; T 263</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Identify and order ordinal positions first to 10th 	Ordinal numbers are introduced in <i>Math Connects K</i> © 2009.
<ul style="list-style-type: none"> Explore the relationship between addition and subtraction using real objects 	Teacher Edition: A 200; ATS 200; IWO 197B, 331B; T 197, 199, 331
Addition and Subtraction	
<ul style="list-style-type: none"> Demonstrate accuracy and fluency of addition and subtraction facts up to 12 	Student Edition: <i>Chapter Review/Test</i> 79-80, 115-116, 177-178, 205-206 <i>Mid-Chapter Check</i> 63, 99-100, 167 <i>Test Practice</i> 81-82, 117-118, 179-180, 207-208 Teacher Edition: A 60, 68, 72; DR 65A, 67A, 69A
Multiplication and Division	
Fractions	
<ul style="list-style-type: none"> Use real objects to see proper fractions with denominators of 2,3,4,8,10 	Student Edition: 457-458 <i>Math at Home</i> 455-456 <i>Problem-Solving Strategy</i> 459-460 Teacher Edition: A 458; ATS 458, 462, 470; DI 459B, 461B, 463B, 471B; DR 459A; T 461
NUMERICAL OPERATIONS	
ADDITION AND SUBTRACTION	
<ul style="list-style-type: none"> Develop the meanings of addition and subtraction by concretely modeling and discussing a large variety of problems 	Student Edition: 51-52, 53-54, 87-88, 89-90 <i>Extra Practice</i> 57 <i>Math at Home</i> 49-50, 85-86 Teacher Edition: A 54, 90; ATS 52, 54, 88, 90; DI 51B, 89B; DR 55A; IWO 53B; PD 51A; RMV 51A; WM 90
<ul style="list-style-type: none"> In the context of real word problems solve: Addition and subtraction word problems without regrouping 	Student Edition: <i>Problem-Solving Strategy</i> 61-62, 73-74, 97-98, 105-106, 161-162, 187-188, 193-194, 325-326, 333-334 Teacher Edition: A 62, 98; DR 53A, 61A, 89A; PD 51A, 67A, 91A; PS 113-114; WM 54, 56

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Understand and use the inverse relationship between addition and subtraction 	<p>Student Edition: 197-198, 199-200, 331-332, 335-336 <i>Extra Practice</i> 201 <i>Game Time</i> 202 <i>Practice with Technology</i> 337-338</p> <p>Teacher Edition: A 198, ATS 200; BMV 199A; DI 197B; DR 199A, 333A; IWO 197B, 331B; T 197, 199, 331, 335; WM 200</p>
<ul style="list-style-type: none"> Check the reasonableness of results of computations 	<p>Student Edition: <i>Problem-Solving Investigation</i> 73, 105, 141, 173, 193, 333, 369, 503 <i>Problem-Solving Strategy</i> 61, 97, 161, 187, 325, 489</p> <p>Teacher Edition: A 506</p>
<ul style="list-style-type: none"> Read and write in order numbers 0 -20 	<p>Student Edition: 23-26, 27-28, 29-30</p> <p>Teacher Edition: A 26, 28, 30; ATS 24, 28, 30; BMV 23A; DI 23B, 27B, 29B; DR 27A, 29A; RMV 27A, 29A</p>
<ul style="list-style-type: none"> Use both horizontal and vertical formats in addition and subtraction 	<p>Student Edition: 75-76, 111-112, 320</p> <p>Teacher Edition: A 76, 112; ATS 76, 112; DI 75B, 111B; T 75, 111; WM 76, 112</p>
<ul style="list-style-type: none"> Insert correct operation signs (+ -) in vertical and horizontal number sentences 	<p>Student Edition: <i>Test Practice</i> 81 #3, #4, 271 #5-#6</p>
<ul style="list-style-type: none"> Identify and supply missing addends and subtrahends up to 12 	<p>Student Edition: 89-90 <i>H.O.T. Problems</i> 54, 170, 320 <i>Looking Ahead</i> LA3-LA4</p> <p>Teacher Edition: ATS LA4; BMV LA3A; FMC 73A; IWO 193B, LA3B; SGO 65B, 91B, 329B, LA3B; T LA3</p>

STANDARDS	PAGE REFERENCES
Multiplication and Division	
Estimation	
<ul style="list-style-type: none"> Judge without counting whether a set of objects has less than, more than, or the same number of objects as a reference set. 	<p>The following references discuss estimating how many objects in a set without counting and can be used to meet this objective.</p> <p>Student Edition: 255-256, 439-440</p> <p>Teacher Edition: ATS 256, 440; BMV 255A; DR 257A; RMV 439A, 505A; SGO 495B; T 439</p>
<ul style="list-style-type: none"> Determine the reasonableness of an answer by estimating the result of computations (e.g. $15+16$ is not 211) 	<p>The following references discuss estimating sums and can be used to meet this objective.</p> <p>Student Edition: 495-496, 505-506 <i>Chapter Review/Test</i> 509-510 #8-#9, #14-#17 <i>Mid-Chapter Check</i> 497 #9 <i>Test Practice</i> 511 #4</p> <p>Teacher Edition: A 496, 506; T 495, 505</p>
<ul style="list-style-type: none"> Explore a variety of strategies for estimating both quantities (e.g. the number of marbles in a jar?) and results of computation jar and results of computation 	<p>Student Edition: 439-440</p> <p>Teacher Edition: A 256; ATS 256, 440; BMV 255A; DI 255B; SGO 495B; T 255, 439, 495, 505</p>
<ul style="list-style-type: none"> Determine when estimation is appropriate and explain the usefulness of an estimate as distinct form an exact answer 	<p>Teacher Edition: A 506; RMV 495A</p>
<ul style="list-style-type: none"> Estimate answers to computational type problems to determine reasonableness of an answer 	<p>The following references discuss estimating sums and differences and can be used to meet this objective.</p> <p>Student Edition: 495-496, 505-506 <i>Chapter Review/Test</i> 509-510 #8-#9, #14-#17 <i>Mid-Chapter Check</i> 497 #9 <i>Test Practice</i> 511 #4</p> <p>Teacher Edition: A 496, 506; T 495, 505</p>

STANDARDS	PAGE REFERENCES
<p>STANDARD 4.2 (GEOMETRY AND MEASUREMENT) ALL STUDENTS WILL DEVELOP SPATIAL SENSE AND THE ABILITY TO USE GEOMETRIC PROPERTIES, RELATIONSHIPS, AND MEASUREMENT TO MODEL, DESCRIBE AND ANALYZE PHENOMENA.</p>	
<p>Geometric Properties</p>	
<ul style="list-style-type: none"> Identify and describe spatial relationships among objects in space and their relative shapes and sizes. Inside/outside, left/right, above/below, between 	<p>Student Edition: <i>Get Ready</i> 401-402, 403-404 Teacher Edition: A 404; ATS 402; BMV 401A; DI 401B; T 402</p>
<ul style="list-style-type: none"> Use concrete objects, drawings and computer graphics to identify, classify and describe standard 3D and 2D shapers: 	<p>Student Edition: <i>Math at Home</i> 383-384 Teacher Edition: A 386; ATS 386, 388, 392; BMV 385A; DI 385B, 391B; I 385, 387, 391, 395; IWO 387B; LS 381H; T 387</p>
<ul style="list-style-type: none"> 3D figures – cube, rectangular prism, sphere, cone, cylinder and pyramid 	<p>Student Edition: 385-386, 387-388, 391-392 <i>Chapter Review/Test</i> 411-412 <i>Extra Practice</i> 393 <i>Game Time</i> 394 <i>Mid-Chapter Check</i> 397 <i>Standards Practice</i> 413 Teacher Edition: A 386, 392; ATS 386; BMV 385A, 387A; DI 385B, 387B; DR 387A; I 385; T 385, 387; WM 386</p>
<ul style="list-style-type: none"> 2D figures – square, rectangle, circle, triangle 	<p>Student Edition: 391-392, 395-396, 405-406 <i>Chapter Review/Test</i> 411-412 <i>Math at Home</i> 383-384 <i>Mid-Chapter Check</i> 397 #6 <i>Problem-Solving Investigation</i> 399-400 Teacher Edition: A 396, 406; ATS 396, 406; BMV 395A; DI 391B, 395B; I 395, 405; RMV 405A; T 395; WM 396</p>
<ul style="list-style-type: none"> Study the relationships between 3D and 2D shapes (e.g. the face of a 3D shape is a 2D shape) 	<p>Student Edition: 391-392 <i>Extra Practice</i> 393 <i>Mid-Chapter Check</i> 397 #5 Teacher Edition: ATS 392; I 391; T 391; WM 392</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Describe, identify and create instances of line symmetry 	<p>Student Edition: <i>Concepts and Skills Bank CS5-CS6</i></p> <p>Teacher Edition: APK CS5</p>
<ul style="list-style-type: none"> Determine whether one is on/off/left/right, above/under/another object 	<p>Student Edition: <i>Get Ready 401-402, 403-404</i></p> <p>Teacher Edition: A 404; ATS 402; BMV 401A; DI 401B; T 402</p>
<ul style="list-style-type: none"> Using concrete objects determine whether two objects are larger/smaller where shape does not matter 	<p>Teacher Edition: ATS 303; BMV 305A; SGO 305B; T 302</p>
Geometry	
<ul style="list-style-type: none"> Compare symmetry and congruence 	<p>Student Edition: <i>Concepts and Skills Bank CS5-CS6</i></p> <p>Teacher Edition: APK CS5</p>
<ul style="list-style-type: none"> Draw congruent shapes 	<p>The following references discuss drawing 2- and 3-dimensional figures and may be used to meet this objective.</p> <p>Student Edition: 396, 405-406</p> <p>Teacher Edition: ATS 406; DR 389A; PD 387A; SGO 389B, 399B</p>
Transforming Shapes	
<ul style="list-style-type: none"> Use simple shapes to make designs, patterns and pictures 	<p>Student Edition: 19-20, 396</p> <p>Teacher Edition: DI 21B, 389B; DR 21A; 399A; FMC 399A; I 19; IWO 405B; T 19; WM 20, 390</p>
<ul style="list-style-type: none"> Combine and subdivide simple shapes to make other shapes 	<p>Student Edition: 405-406</p> <p>Teacher Edition: A 406; ATS 406; DI 405B; FMC 407A; I 405; T 405</p>
<ul style="list-style-type: none"> Predict outcome of putting two shapes together 	<p>The following references discuss putting shapes together to make other shapes and may be used to meet this objective.</p> <p>Student Edition: 405-406</p> <p>Teacher Edition: A 406; ATS 406; DI 405B; FMC 407A; I 405; T 405</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Determine congruence and similarity of various objects in different positions 	<p>The following references discuss congruence and can be used to meet this objective.</p> <p>Student Edition: <i>Concepts and Skills Bank CS5-CS6</i></p> <p>Teacher Edition: APK CS5</p>
<ul style="list-style-type: none"> Perform a left/right turn as a preface to right angles 	<p>This objective may be met through classroom activities.</p>
<ul style="list-style-type: none"> Determine if a positional change is a flip, slide or turn 	<p>Transformations are introduced in <i>Math Connects 4</i> © 2009.</p>
<p>Coordinate Geometry</p>	
<ul style="list-style-type: none"> Give and follow directions for getting from one point to another on a map or grid 	<p>Student Edition: 407-408 <i>Chapter Review/Test 412 #14-#17</i></p> <p>Teacher Edition: A 408; ATS 408; DI 407B; I 407; T 407; WM 408</p>
<ul style="list-style-type: none"> If given two locations, tell how to get from one to another; transform this to a simple grid 	<p>Student Edition: 407-408 <i>Chapter Review/Test 412 #14-#17</i></p> <p>Teacher Edition: A 408; ATS 408; DI 407B; I 407; T 407; WM 408</p>
<ul style="list-style-type: none"> Create a number path by following dots to a specific location 	<p>The following references in <i>Math Connects K</i> © 2009 discuss object dot paths.</p> <p>Teacher Edition: CCL 149G(M); DI 215B(AL)</p>
<p>Units of Measurement</p>	
<ul style="list-style-type: none"> Directly compare and order objects according to measurable attributes 	<p>Student Edition: 277-278, 285-288, 291-294, 295-298, 301-304, 305-306 <i>Are You Ready?</i> 274 <i>Chapter Review/Test</i> 309-310 <i>Mid-Chapter Check</i> 289 <i>Test Practice</i> 311-312</p> <p>Teacher Edition: ATS 287, 297, 303; BMV 285A; I 277, 291, 301; T 286, 292, 305</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Attributes – length, weight, capacity, time, temperature 	<p>Student Edition: 215-216, 217-218, 223-226, 277-278, 279-280, 285-288, 291-294, 295-298 <i>Extra Practice</i> 283 <i>Mid-Chapter Check</i> 289 <i>Problem-Solving Strategy</i> 281-282</p> <p>Teacher Edition: BMV 279A; DI 277B, 279B, 285B; DR 279A, 285A; T 215, 224, 279</p>
<ul style="list-style-type: none"> Recognize the need for a uniform unit of measure 	<p>Teacher Edition: SGO 281B; WM 280</p>
<ul style="list-style-type: none"> Select and use appropriate standard and non-standard units of measure and standard measurement tools to solve real-life problems 	<p>Student Edition: 279-280 <i>Extra Practice</i> 283 <i>Math at Home</i> 275-276 <i>Problem-Solving Strategy</i> 281-282</p> <p>Teacher Edition: A 280; ATS 287, 293; BMV 279A; DI 277B, 285B, 291B; IWO 279B; T 279, 292; WM 280</p>
<p>Units of Measurements: Lengths</p>	
<ul style="list-style-type: none"> Use a ruler to measure inches to 12 for length 	<p>Student Edition: <i>Looking Ahead</i> LA11-LA12</p> <p>Teacher Edition: BMV LA11A; DI LA11B; I LA11; T LA11</p>
<ul style="list-style-type: none"> Use a ruler to measure centimeters to 20 	<p>Student Edition: <i>Looking Ahead</i> LA13-LA14</p> <p>Teacher Edition: BMV LA13A; DI LA13B; I LA13; T LA13</p>
<ul style="list-style-type: none"> Use non-standard units to compare height and length 	<p>Student Edition: 279-280 <i>Extra Practice</i> 283 <i>Game Time</i> 284 <i>Problem-Solving Strategy</i> 281-282</p> <p>Teacher Edition: BMV 279A; DI 279B; DR 281A; I 279; SGO 281B; T 279; WM 280</p>

STANDARDS	PAGE REFERENCES
Units of Measurement: Weight	
<ul style="list-style-type: none"> Use a balance scale to measure a pound 	<p>The following references use a pan balance and nonstandard units to measure objects and may be used to meet this objective.</p> <p>Teacher Edition: ATS 287; DI 285B</p>
Units of Measurements: Capacity	
<ul style="list-style-type: none"> Recognize a cup, pint, quart, gallon 	<p>Teacher Edition: DI 291B; SGO 291B</p>
Units of Measurements: Temperature	
<ul style="list-style-type: none"> Judge whether the temperatures are hot, warm, cool and cold 	<p>Student Edition: 295-298</p> <p>Teacher Edition: ATS 297; DI 295B; I 295; T 296</p>
Units of Measurements: Money	
<ul style="list-style-type: none"> Identify and compare penny, nickel, dime, quarter and dollar 	<p>Student Edition: 351-352, 353-354, 365-366 <i>Are You Ready?</i> 348 <i>Practice with Technology</i> 367-368</p> <p>Teacher Edition: ATS 354, 366; BMV 353A, 365A; DI 353B, 365B; I 351, 353, 365; T 351, 353, 365; WM 354</p>
<ul style="list-style-type: none"> Count and make change to \$1.00 	<p>Student Edition: 351-352, 353-354, 355-356, 357-358, 363-364, 365-366, 371-372 <i>Extra Practice</i> 373 <i>Game Time</i> 374 <i>Math at Home</i> 349-350 <i>Mid-Chapter Check</i> 361 <i>Practice with Technology</i> 367-368 <i>Problem-Solving Investigation</i> 369-370 <i>Problem-Solving Strategy</i> 359-360</p> <p>Teacher Edition: A 358, 372; DI 351B; PS 375-376; T 357, 371</p>
<ul style="list-style-type: none"> Add and subtract money 	<p>Student Edition: <i>Concepts and Skills Bank</i> CS3-CS4</p> <p>Teacher Edition: AAC CS4; APK CS3</p>

STANDARDS	PAGE REFERENCES
Units of Measurements: Time	
<ul style="list-style-type: none"> Identify days of the week, months of the year, seasons 	These concepts are introduced in Math Connects K © 2009.
<ul style="list-style-type: none"> Tell time on both a digital and analog clock to the hour and half hour 	Student Edition: 215-216, 217-218, 223-226 <i>Chapter Review/Test</i> 235-236 <i>Game Time</i> 230 <i>Math at Home</i> 211-212 <i>Mid-Chapter Check</i> 221 <i>Test Practice</i> 237 Teacher Edition: A 216, 226; ATS 216, 224; BMV 223A; DI 223B; I 215; IWO 217B; T 215, 224; WM 216, 226
Measuring Geometric Objects	
<ul style="list-style-type: none"> Directly measure the perimeter of simple two-dimensional shapes 	Student Edition: <i>Math at Home</i> 275-276
<ul style="list-style-type: none"> Describe different ways to measure two dimensional objects 	This objective may be met through classroom discussions and activities.
<ul style="list-style-type: none"> Find area of items using informal measurement instruments 	Teacher Edition: ATS 303, 306; I 305; IWO 301B; SGO 305B; T 305
STANDARD 4.3 (PATTERNS AND ALGEBRA) ALL STUDENTS WILL REPRESENT AND ANALYZE RELATIONSHIPS AMONG VARIABLE QUANTITIES AND SOLVE PROBLEMS INVOLVING PATTERNS, FUNCTIONS, AND ALGEBRAIC CONCEPTS AND PROCESSES.	
Patterns	
<ul style="list-style-type: none"> Recognize, describe, extend and create patterns 	Student Edition: 17-18, 19-20, 21-22 <i>Chapter Review/Test</i> 43 <i>Mid-Chapter Check</i> 31-32 #1-#3, #7-#8 <i>Problem-Solving Strategy</i> 21-22, 247-248, 389-390 <i>Test Practice</i> 45-46 #4, #9 Teacher Edition: A 18, 22, 248; ATS 20, 248; BMV 17A; DI 19B, 21B; DR 19A; PD 17A; RMV 19A

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Use concrete materials (manipulatives), pictures, rhythms and whole numbers create patterns 	<p>Student Edition: 19-20, 21-22 <i>Chapter Review/Test 43</i> <i>Mid-Chapter Check 31-32 #1-#3, #7-#8</i></p> <p>Teacher Edition: A 22; ATS 20; BMV 17A; DI 17B, 21B, 247B, 389B; DR 19A, 21A; IWO 19B; RMV 19A; WM 390</p>
<ul style="list-style-type: none"> Use words and symbols (e.g., “add two” or +2) to create patterns 	<p>Student Edition: 17 #5, 19 #3, 20 #7</p> <p>Teacher Edition: PD 21A; WM 20</p>
<ul style="list-style-type: none"> Make repeating patterns 	<p>Student Edition: 19-20 <i>Chapter Review/Test 43 #4</i> <i>Mid-Chapter Check 31-32 #2, #8</i></p> <p>Teacher Edition: A 22, 390; ATS 390; BMV 17A; DI 21B, 389B; DR 19A, 21A; IWO 19B; RMV 19A; WIM 20</p>
<ul style="list-style-type: none"> Explore whole number patterns that grow or shrink as a result if repeatedly adding or subtracting a fixed number (e.g. skip counting forward or backward) 	<p>Student Edition: 259-260, 261-262 <i>Chapter Review/Test 270 #10-#15</i> <i>Extra Practice 265</i></p> <p>Teacher Edition: ATS 260; BMV 259A; DI 259B, 261B; DR 261A; I 259, 261; PS 267-268; RMV 261A; T 259, 261</p>
<ul style="list-style-type: none"> Find and describe patterns in real life 	<p>Student Edition: 18 #11</p> <p>Teacher Edition: BMV 17A; DI 19B; PS 41-42; WM 260</p>
<ul style="list-style-type: none"> Copy simple patterns using concrete materials 	<p>Student Edition: 14</p> <p>Teacher Edition: ATS 18, 20; PSP P3 Day 1</p>
<ul style="list-style-type: none"> Continue given patterns using concrete materials 	<p>Student Edition: 17-18</p> <p>Teacher Edition: ATS 20, 22; DI 21B; IWO 17B, 389B; P 22</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Continue and extend patterns forward, backward, horizontally, and vertically. (1,2,3,4;4,3,2,1;Sunday, Monday, Tuesday, Saturday, Friday, Thursday) 	<p>Student Edition: 40 #15-#16</p>
<ul style="list-style-type: none"> Identify missing numbers in sequence up to 100 	<p>Student Edition: 39-40, 251, 445-446 <i>Chapter Review/Test</i> 44 #10-#11, 450 #11-#16 <i>Mid-Chapter Check</i> 100 #22-#25</p> <p>Teacher Edition: A 446; SGO 445B</p>
<ul style="list-style-type: none"> Discover pattern of change in a given situation and tell the rule 	<p>The following references discuss patterns and can be extended to meet this objective.</p> <p>Student Edition: 17-18, 19-20. 21-22</p>
<ul style="list-style-type: none"> Create complex patterns using more than one attribute 	<p>The following references discuss patterns and can be extended to meet this objective.</p> <p>Student Edition: 17-18, 19-20. 21-22</p>
<ul style="list-style-type: none"> Find patterns of change in growth 	<p>The following references discuss patterns and can be extended to meet this objective.</p> <p>Student Edition: 17-18, 19-20. 21-22</p>
<p>Functions and Relationships</p>	
<ul style="list-style-type: none"> Use concrete and pictorial models of function machines to explore the basic concept of a function (In/Out) 	<p>See <i>Math Connects 3</i> © 2009.</p> <p>Student Edition: 348-351, 356-359 <i>Big Idea</i> 330 <i>Extra Practice</i> R23 <i>H.O.T. Problems</i> 351 <i>Mid-Chapter Check</i> 353 #11 <i>Real-World Example</i> 348, 349, 356, 357 <i>Study Guide and Review</i> 365 #15, 366 #19, #22 <i>Test Practice</i> 368 #1, #9</p> <p>Teacher Edition: AE 349, 357; ATS 350, 358; I 348, 356; IWO 356B; SGO 348B, 356B; T 348</p>

STANDARDS	PAGE REFERENCES
Modeling	
<ul style="list-style-type: none"> Recognize and describe changes over time (e.g. temperature, height) 	<p>See <i>Math Connects 1</i> © 2009.</p> <p>Student Edition: 193-194 <i>Problem Solving</i> 195-196</p> <p>Teacher Edition: DI 193B(AL, DL); MFF 4</p>
<ul style="list-style-type: none"> Construct and solve simple open sentences involving addition or subtraction ($8 + _ = 16$; $n - 4 =$) 	<p>Student Edition: 170 #22-#25, 200 #8, 320 #14, 331-332</p> <p>Teacher Edition: FMC 73A</p>
Procedures	
<ul style="list-style-type: none"> Understand and apply (but don't name) the following properties of addition: <ul style="list-style-type: none"> Commutative (e.g. $5 + 3 = 3 + 5$) Zero as the identity element (e.g. $7 + 0 = 7$) Associative (e.g. $7 + 3 + 2$ can be found by first adding either $7 + 3$ or $3 + 2$) 	<p>Student Edition: 59-60, 155-156, 335-336 <i>Practice with Technology</i> 337-338</p> <p>Teacher Edition: A 60, 156; ATS 156, 336; I 59, 155; IWO 155B; SGO 59B; T 59, 155, 335; WM 156</p>
<ul style="list-style-type: none"> Use symbols $>$ and $=$ when comparing given numbers to 100 	<p>Student Edition: 443-444 <i>Chapter Review/Test</i> 450 #8-#10</p> <p>Teacher Edition: PS 448; T 443; WM 444</p>
<ul style="list-style-type: none"> Compare sets $< > =$ 	<p>This objective may be met through classroom discussions and activities.</p>

STANDARDS	PAGE REFERENCES
<p>STANDARD 4.4 (DATA ANALYSIS, PROBABILITY, AND DISCRETE MATHEMATICS) ALL STUDENTS WILL DEVELOP AN UNDERSTANDING OF THE CONCEPTS AND TECHNIQUES OF DATA ANALYSIS, PROBABILITY, AND DISCRETE MATHEMATICS, AND WILL USE THEM TO MODEL SITUATIONS, SOLVE PROBLEMS, AND ANALYZE AND DRAW APPROPRIATE INFERENCES FROM DATA.</p>	
<p>Date Analysis</p>	
<ul style="list-style-type: none"> Collect, generate and organize data in response to questions, claims, or curiosity 	<p>Student Edition: 123-124, 129-130, 137-138 <i>Math at Home</i> 121-122 <i>Problem-Solving Strategy</i> 127-128</p> <p>Teacher Edition: A 130, 138; ATS 124; BMV 123A, 125A, 129A; DI 123B, 125A, 129B; I 123, 137; T 123, 129, 137; WM 138</p>
<ul style="list-style-type: none"> Date collected from student’s everyday experiences 	<p>Student Edition: 125, 129, 138 <i>Math at Home</i> 121-122</p> <p>Teacher Edition: A 134; ATS 134; BMV 125A, 129A; DI 123B; IWO 129B, 133B, 137B; SGO 125B, 127B; T 123, 125, 129, 133; WM 138</p>
<ul style="list-style-type: none"> Data generated form chance devices, such as spinners and dice 	<p>Teacher Edition: I 137</p>
<ul style="list-style-type: none"> Read, interpret, construct, and analyze displays of data 	<p>Student Edition: 125-126, 129-130, 133-134, 137-138 <i>Chapter Review/Test</i> 147-148 <i>Extra Practice</i> 135 <i>Math at Home</i> 121-122 <i>Practice with Technology</i> 139-140 <i>Problem-Solving Strategy</i> 127-128 <i>Test Practice</i> 149 #2-#3</p> <p>Teacher Edition: A 134, 138; BMV 125A, 129A; DI 129B, 133B; I 133; T 125, 133; WM 138</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Pictures, tally chart, pictograph, bar graph, Venn diagram 	<p>Student Edition: 123-124, 125-126, 129-130, 133-134, 137-138 <i>Chapter Review/Test</i> 147-148 <i>Extra Practice</i> 135 <i>Math at Home</i> 121-122 <i>Mid-Chapter Check</i> 131 <i>Practice with Technology</i> 139-140 <i>Problem-Solving Strategy</i> 127-128</p> <p>Teacher Edition: A 130, 138; BMV 125A, 129A; DI 123B, 133B; SGO 127B; T 123, 133</p>
<ul style="list-style-type: none"> Smallest to largest, most frequent (mode) 	<p>Student Edition: <i>Problem-Solving Projects</i> P4 #5, P7 #4, P12 #4</p>
<ul style="list-style-type: none"> Collect and organize information; tally the results and record them on a graph 	<p>Student Edition: 125, 138 <i>Math at Home</i> 121-122 <i>Problem-Solving Projects</i> P4, P7, P11</p> <p>Teacher Edition: BMV 125A; I 137; IWO 129B, 133B, 137B; SGO 125B, 127B; WM 138</p>
<ul style="list-style-type: none"> Read and interpret graphs using symbols 	<p>Student Edition: 125-126, 129-130, 133-134 <i>Extra Practice</i> 135</p> <p>Teacher Edition: A 134; FMC 127A; I 125, 133; SGO 133B; T 133</p>
<ul style="list-style-type: none"> Construct, read and interpret displays of data: pictographs, bar graphs, tables, lists 	<p>Student Edition: 125-126, 129-130, 133-134, 137-138 <i>Chapter Review/Test</i> 147-148 <i>Extra Practice</i> 135 <i>Math at Home</i> 121-122 <i>Practice with Technology</i> 139-140 <i>Problem-Solving Strategy</i> 127-128 <i>Test Practice</i> 149 #2-#3</p> <p>Teacher Edition: A 134, 138; BMV 125A, 129A; DI 129B, 133B; I 133; T 125, 133; WM 138</p>

STANDARDS	PAGE REFERENCES
Probability	
<ul style="list-style-type: none"> Use chance devices like spinners and dice to explore concepts of probability: Certain, impossible more likely, less likely, equally likely 	<p>The following references discuss exploring concepts of probability and can be used to meet this objective.</p> <p>Student Edition: 143-144 <i>Chapter Review/Test 148 #10</i></p> <p>Teacher Edition: A 144; ATS 144; BMV 143A; DI 143B; I 143; T 143</p>
<ul style="list-style-type: none"> Provide probability of specific outcomes 	<p>The following references discuss exploring concepts of probability and can be used to meet this objective.</p> <p>Student Edition: 143-144 <i>Chapter Review/Test 148 #10</i></p> <p>Teacher Edition: A 144; ATS 144; BMV 143A; DI 143B; I 143; T 143</p>
<ul style="list-style-type: none"> Probability of getting specific outcome when coin is tossed, when die is rolled, when spinner is spun (e.g. if spinner has five equal sectors, then probability of getting a particular sector is one out of five) 	<p>The following references discuss exploring concepts of probability and can be used to meet this objective.</p> <p>Student Edition: 143-144 <i>Chapter Review/Test 148 #10</i></p> <p>Teacher Edition: A 144; ATS 144; BMV 143A; DI 143B; I 143; T 143</p>
<ul style="list-style-type: none"> When picking a marble from a bag with three red marbles and four blue marbles, the probability of getting a red marble is three out of seven 	<p>The following references discuss exploring concepts of probability and can be used to meet this objective.</p> <p>Student Edition: 143-144 <i>Chapter Review/Test 148 #10</i></p> <p>Teacher Edition: A 144; ATS 144; BMV 143A; DI 143B; I 143; T 143</p>
<ul style="list-style-type: none"> Make a prediction of the outcome of a sample probability activity 	<p>Teacher Edition: SGO 143B</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Perform a sample probability activity 	<p>The following references discuss exploring concepts of probability and can be used to meet this objective.</p> <p>Student Edition: 143-144 <i>Chapter Review/Test 148 #10</i></p> <p>Teacher Edition: A 144; ATS 144; BMV 143A; DI 143B; I 143; T 143</p>
<ul style="list-style-type: none"> Use real-life situations to make predictions and conclusions based on experiences 	<p>The following references discuss exploring concepts of probability and can be used to meet this objective.</p> <p>Student Edition: 143-144 <i>Chapter Review/Test 148 #10</i></p> <p>Teacher Edition: A 144; ATS 144; BMV 143A; DI 143B; I 143; T 143</p>
<p>Discrete Mathematics—Systematic Listing and Counting</p>	
<ul style="list-style-type: none"> Sort and classify objects according to attributes 	<p>Student Edition: 123-124, 387</p> <p>Teacher Edition: ATS 124; BMV 123A, 395A; DI 123B, 385B; I 123, 385, 395; T 123, 385, 391</p>
<ul style="list-style-type: none"> Use Venn diagrams to show number facts and families 	<p>Venn diagrams can be found on the following pages:</p> <p>Student Edition: 123-124</p> <p>Teacher Edition: ATS 124; BMV 123A; DI 123B; I 123; T 123</p> <p>Number facts and families can be found on the following pages:</p> <p>Student Edition: 199-200, 335-336 <i>Game Time 202</i> <i>Practice with Technology 337-338</i></p> <p>Teacher Edition: A 200, 336; ATS 200, 336; BMV 199A; DI 199B, 335B; I 199, 335; RMV 335A; T 199, 335; WM 336</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Generate all possibilities in simple counting situation (e.g. all outfits involving two shirts and three pants) 	<p>See <i>Math Connects 3</i> © 2009.</p> <p>Student Edition: 522-523 <i>Extra Practice</i> R33 <i>Mid-Chapter Check</i> 525 #6 <i>Study Guide and Review</i> 550</p> <p>Teacher Edition: A 523; ATS 523; ELL 522B, IWO 522B; SGO 522B; T 522</p>
Discrete Mathematics—Vertex-Edge Graphs and Algorithms	
<ul style="list-style-type: none"> Follow simple sets of directions (e.g. from one location to another or from a recipe) 	<p>Student Edition: 407-408 <i>Chapter Review/Test</i> 412 #14-#17</p> <p>Teacher Edition: A 408; ATS 408; DI 407B; I 407; T 407</p>
<ul style="list-style-type: none"> Color simple maps with a small number of colors 	<p>Student Edition: 407-408, 412</p>
<ul style="list-style-type: none"> Play simple two-person games (e.g. tic-tac-toe) and informally explore the idea of what the outcome should be 	<p>Student Edition: <i>Game Time</i> 38, 58, 94, 136, 160, 202, 230, 266, 284, 322, 374, 394, 426, 466, 494</p>
<ul style="list-style-type: none"> Explore concrete models of vertex-edge graphs (e.g. vertices as “island” and edges as “bridges”) 	<p>See <i>Math Connects 3</i> © 2009.</p> <p>Student Edition: 357-358</p>
<ul style="list-style-type: none"> Paths from one vertex to another 	<p>See <i>Math Connects 3</i> © 2009.</p> <p>Student Edition: 357-358</p>

STANDARDS	PAGE REFERENCES
<p>STANDARD 4.5 (MATHEMATICAL PROCESSES) ALL STUDENTS WILL USE MATHEMATICAL PROCESSES OF PROBLEM SOLVING, COMMUNICATION, CONNECTIONS, REASONING, REPRESENTATIONS, AND TECHNOLOGY TO SOLVE PROBLEMS AND COMMUNICATE MATHEMATICAL IDEAS</p>	
<p>At each grade level, with respect to content appropriate for that grade level, students will:</p>	
<p>PROBLEM SOLVING</p>	
<ul style="list-style-type: none"> Learn mathematics through problem solving, inquiry, and discovery. 	<p>Student Edition: <i>Math at Home</i> 49-50, 121-122 <i>Problem-Solving Investigation</i> 33-34, 333-334, 503-504</p> <p>Teacher Edition: ATS 170, 287, 430; IWO 51B, 193B, 461B; SGO 19B, 29B, 163B; T 95, 245, 277, 355; WM 138, 357</p>
<ul style="list-style-type: none"> Solve problems that arise in mathematics and in other contexts (cf. workplace readiness standard 8.3). <ul style="list-style-type: none"> Open-ended problems Non-routine problems Problems with multiple solutions Problems that can be solved in several ways 	<p>Student Edition: 52 #7, 124 #4, 464 #12 <i>H.O.T. Problem</i> 66, 324 <i>Math at Home</i> 49-50 <i>Writing in Math</i> 130, 196</p> <p>Teacher Edition: A 52, 458; ATS 142; LS 47H, 119H; SGO 19B; WM 20, 30, 66, 170, 246, 422</p>
<ul style="list-style-type: none"> Select and apply a variety of appropriate problem-solving strategies (e.g., “try a simpler problem” or “make a diagram”) to solve problems. 	<p>Student Edition: <i>Problem-Solving Investigation</i> 73-74, 105-106, 173-174, 193-194, 231-232, 257-258, 299-300, 333-334, 399-400, 473-474, 503-504 <i>Problem-Solving Strategy</i> 21-22, 97-98, 187-188, 359-360, 459-460</p> <p>Teacher Edition: A 34; ATS 142 ; IWO 281B, 441B</p>
<ul style="list-style-type: none"> Pose problems of various types and levels of difficulty. 	<p>Student Edition: <i>Writing in Math</i> 364</p> <p>Teacher Edition: A 22; IWO 127B, 141B, 299B; SGO 51B, 91B, 185B, 423B; WM 144, 282, 320, 336, 422, 444, 446, 506</p>
<ul style="list-style-type: none"> Monitor their progress and reflect on the process of their problem solving activity. 	<p>Student Edition: <i>Problem-Solving Investigation</i> 33, 73, 299, 441 <i>Problem-Solving Strategy</i> 61, 97, 325 <i>Talk About It</i> 51, 319, 323, 439</p> <p>Teacher Edition: A 34, 52, 74, 88, 428; ATS 34; T 33, 61, 73</p>

STANDARDS	PAGE REFERENCES
COMMUNICATION	
<ul style="list-style-type: none"> Use communication to organize and clarify their mathematical thinking. Reading and writing Discussions, listening, and questioning 	<p>Student Edition: <i>Problem Solving</i> 124 <i>Talk About It</i> 24, 185, 292, 323, 329</p> <p>Teacher Edition: A 34, 88, 200; IWO 185B, 281B, 299B; SGO 281B; T 277, 363; WM 92, 164, 252, 288, 324</p>
<ul style="list-style-type: none"> Communicate their mathematical thinking coherently and clearly to peers, teachers, and others, both orally and in writing. 	<p>Student Edition: <i>Math at Home</i> 315-316 <i>Problem Solving</i> 124 <i>Talk About It</i> 24, 39, 129, 245, 329 <i>Writing in Math</i> 56</p> <p>Teacher Edition: A 34, 52, 298, 360; IWO 33B, 73B, 281B; SGO 423B; WM 92, 164, 288, 334</p>
<ul style="list-style-type: none"> Analyze and evaluate the mathematical thinking and strategies of others. 	<p>Student Edition: <i>H.O.T. Problem</i> 60, 66, 76, 102, 260, 324, 406, 422, 464, 488 <i>Problem Solving</i> 462</p> <p>Teacher Edition: IWO 27B; SGO 61B</p>
<ul style="list-style-type: none"> Use the language of mathematics to express mathematical ideas precisely. 	<p>Student Edition: <i>Math at Home</i> 315-316 <i>Talk About It</i> 24, 55, 129, 185, 329 <i>Writing in Math</i> 56</p> <p>Teacher Edition: A 34, 52, 200, 298; IWO 73B, 299B; SGO 281B, 365B; WM 92, 252, 288, 324, 334</p>
CONNECTIONS	
<ul style="list-style-type: none"> Recognize recurring themes across mathematical domains (e.g., patterns in number, algebra, and geometry). 	<p>See <i>Math Connects K</i> © 2009.</p> <p>Student Edition: <i>Problem Solving Strategy</i> 83-84, 136-137, 161-162</p> <p>Teacher Edition: CCL 251G(T); FMC 111A, 207A, 255A, 283A, 287A, LA13A</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Use connections among mathematical ideas to explain concepts (e.g., two linear equations have a unique solution because the lines they represent intersect at a single point). 	<p>The following references in <i>Math Connects 3</i> © 2009 can be used in classroom discussion and activities to meet this objective.</p> <p>Student Edition: 258-260 <i>Big Idea</i> 598 <i>Explore</i> 256-257, 601-602, 616-617 <i>Game Time</i> 607</p> <p>Teacher Edition: ATS 259; IWO 258B, 608B; SGO 258B, 603B</p>
<ul style="list-style-type: none"> Recognize that mathematics is used in a variety of contexts outside of mathematics. 	<p>Student Edition: <i>Data File</i> 164 <i>H.O.T. Problem</i> 36, 244 <i>Math at Home</i> 49, 121, 349, 455 <i>Problem Solving</i> 88, 502</p> <p>Teacher Edition: ATS 386; IWO 385B, 391B; LS 83G-83H, 239G-239H, 453G-453H; PS 41-42, 77-78, 341-342, 447-448, 507-508</p>
<ul style="list-style-type: none"> Apply mathematics in practical situations and in other disciplines. 	<p>Student Edition: <i>Math at Home</i> 211-212, 349-350 <i>Problem Solving</i> 18, 458 <i>Problem-Solving Investigation</i> 105-106, 173-174, 333-334 <i>Problem-Solving Strategy</i> 21-22, 61-62, 359-360, 427-428 <i>Talk About It</i> 292, 351</p> <p>Teacher Edition: PS 41-42, 145-146; SGO 331B, 365B; WM 20, 196, 288</p>
<ul style="list-style-type: none"> Trace the development of mathematical concepts over time and across cultures (cf. world languages and social studies standards). 	<p>This objective can be met through classroom discussion and activities. Also see Scope and Sequence for references (ie.) Pythagorean Theorem, Course #2.</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Understand how mathematical ideas interconnect and build on one another to produce a coherent whole. 	<p>Student Edition: 197-198, 199-200, 331-332, 335-336, 391-392 <i>Extra Practice</i> 201 <i>Game Time</i> 202 <i>Practice with Technology</i> 337-338</p> <p>Teacher Edition: A 200, 486, 506; ATS 392; BMV 199A; DI 197B; DR 333A; I 391, 485; T 197, 391; WM 486</p>
REASONING	
<ul style="list-style-type: none"> Recognize that mathematical facts, procedures, and claims must be justified. 	<p>The following references discuss justifying the answer and can be used to meet this objective.</p> <p>Teacher Edition: A 318, 332, 336, 390; IWO 443B; WM 324, 330, 424, 458</p>
<ul style="list-style-type: none"> Use reasoning to support their mathematical conclusions and problem solutions. 	<p>Student Edition: <i>H.O.T. Problem</i> 140, 156, 304 <i>Problem Solving</i> 256, 358 <i>Talk About It</i> 35, 89, 169, 245, 317, 469 <i>Writing in Math</i> 90, 386</p> <p>Teacher Edition: A 60, 174, 264, 356; T 257; WM 76, 262</p>
<ul style="list-style-type: none"> Select and use various types of reasoning and methods of proof. 	<p>The following references discuss justifying the answer and can be used to meet this objective.</p> <p>Teacher Edition: A 318, 332, 336, 390; IWO 443B; WM 324, 330, 424, 458</p>
<ul style="list-style-type: none"> Rely on reasoning, rather than answer keys, teachers, or peers, to check the correctness of their problem solutions. 	<p>Student Edition: <i>Problem-Solving Investigation</i> 73, 173, 231, 299, 399, 441, 473, 503 <i>Problem-Solving Strategy</i> 21, 97, 127, 187, 219, 359, 427, 489</p> <p>Teacher Edition: A 332; WM 324, 330, 424</p>
<ul style="list-style-type: none"> Make and investigate mathematical conjectures. 	<p>Temperature is discussed in the following references in <i>Math Connects 4</i> © 2009 and can be used to meet this objective.</p> <p>Student Edition: <i>Explore</i> 406-407 <i>Writing in Math</i> 407 #6</p> <p>Teacher Edition: A 407; I 408</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Counterexamples as a means of disproving conjectures. 	See <i>Math Connects 3</i> © 2009. Teacher Edition: SGO 124B, 184B, 234B
<ul style="list-style-type: none"> Verifying conjectures using informal reasoning or proofs. 	See <i>Math Connects 3</i> © 2009. Teacher Edition: ELL 430B; E 396B; IWO 124B, 450B; SGO 234B
<ul style="list-style-type: none"> Evaluate examples of mathematical reasoning and determine whether they are valid. 	The following references discuss justifying the answer and can be used to meet this objective. Teacher Edition: A 318, 332, 336, 390; IWO 443B; WM 324, 330, 424, 458
REPRESENTATIONS	
<ul style="list-style-type: none"> Create and use representations to organize, record, and communicate mathematical ideas. 	Student Edition: 51-52, 53-54, 89-90, 125-126, 129-130, 133-134, 137-138, 339-340 <i>Problem-Solving Investigation</i> 141-142 <i>Problem-Solving Strategy</i> 127-128 Teacher Edition: A 90; ATS 52, 340; IWO 89B, 129B; SGO 89B, 125B, 127B, 133B, 137B
<ul style="list-style-type: none"> Concrete representations (e.g., base-ten blocks or algebra tiles) 	Student Edition: 51-52, 53-54, 89-90, 339-340 Teacher Edition: A 54, 90; ATS 52, 138; IWO 53B, 61B, 65B; SGO 59B, 65B, 133B, 137B, 325B; T 51, 53, 89, 339
<ul style="list-style-type: none"> Pictorial representations (e.g., diagrams, charts, or tables) 	Student Edition: 129-130 <i>Mid-Chapter Check</i> 131 #2-#4 <i>Problem-Solving Investigation</i> 142 <i>Problem-Solving Strategy</i> 127-128 Teacher Edition: A 128, 130; IWO 127B, 129B; SGO 129B, 141B; T 129; WM 90
<ul style="list-style-type: none"> Symbolic representations (e.g., a formula) 	See <i>Math Connects K</i> © 2009. Teacher Edition: CP 15; DI 81B(BL); Manip; 17A, 27A, 31A, 83A, 163A

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Graphical representations (e.g., a line graph) 	<p>Student Edition: 125-126, 133-134, 137-138 <i>Extra Practice</i> 135 <i>Mid-Chapter Check</i> 132 #12-#15 <i>Practice with Technology</i> 139-140</p> <p>Teacher Edition: A 134, 138; ATS 134; SGO 125B, 127B, 133B, 137B; IWO 125B, 133B, 137B; T 125, 133, 137; WM 138</p>
<ul style="list-style-type: none"> Select, apply, and translate among mathematical representations to solve problems. 	<p>Student Edition: <i>Math at Home</i> 121-122 <i>Problem-Solving Investigation</i> 141-142</p> <p>Teacher Edition: ETL 140; GBB 139; IWO 129B; SGO 125B</p>
<ul style="list-style-type: none"> Use representations to model and interpret physical, social, and mathematical phenomena. 	<p>Student Edition: 125, 129, 138 <i>Math at Home</i> 121-122</p> <p>Teacher Edition: A 134; IWO 129B, 137B; LS 119G-119H; SGO 125B, 127B; T 125, 129, 133; WM 138</p>
TECHNOLOGY	
<ul style="list-style-type: none"> Use technology to gather, analyze, and communicate mathematical information. 	<p>Student Edition: <i>Practice with Technology</i> 139-140, 337-338, 367-368, 435-436</p> <p>Teacher Edition: ETL 140, 338, 368, 436</p>
<ul style="list-style-type: none"> Use computer spreadsheets, software, and graphing utilities to organize and display quantitative information (cf. workplace readiness standard 8.4-D). 	<p>Student Edition: <i>Practice with Technology</i> 139-140, 337-338, 367-368, 435-436</p> <p>Teacher Edition: ETL 140, 338, 368, 436</p>
<ul style="list-style-type: none"> Use graphing calculators and computer software to investigate properties of functions and their graphs. 	<p>See <i>Math Connects K</i> © 2009.</p> <p>Teacher Edition: DI ST 57B, 213B, 325B; TH T30, T31; TT 17A, 19A, 47A, 255A, 325A</p>
<ul style="list-style-type: none"> Use calculators as problem-solving tools (e.g., to explore patterns, to validate solutions). 	<p>See <i>Math Connects K</i> © 2009.</p> <p>Teacher Edition: TH T30</p>

STANDARDS	PAGE REFERENCES
<ul style="list-style-type: none"> Use computer software to make and verify conjectures about geometric objects. 	<p>See <i>Math Connects 3</i> © 2009. Student Edition: <i>Extend</i> 491</p>
<ul style="list-style-type: none"> Use computer-based laboratory technology for mathematical applications in the sciences (cf. science standards) 	<p>This objective can be met through classroom activities and assignments.</p>