



MathScape

Seeing and Thinking Mathematically

Course 1

© 2005

STANDARDS	PAGE REFERENCES
<p>Standard 1: Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.</p>	
<p>Benchmark 1: Number Sense – The student demonstrates number sense for rational numbers and simple algebraic expressions in one variable in a variety of situations.</p>	
<p>The student...</p>	
<p>1. knows, explains, and uses equivalent representations for rational numbers expressed as fractions, terminating decimals, and percents; positive rational number bases with whole number exponents; time; and money (2.4.K1a-c) (\$).</p>	<p>Student Edition: 72-73, 74-75, 88, 89, 112-113, 120-121, 149, 152, 210-211, 212-213, 232-233, 234-235, 256, 257, 265, 266</p> <p>Teacher Guide: 74A, 74, 75A, 112A, 113A, 210A, 211A, 232A, 233A</p>
<p>2. ▲ compares and orders (2.4.K1a-c) (\$):</p> <ul style="list-style-type: none"> a. integers; b. fractions greater than or equal to zero, c. decimals greater than or equal to zero through thousandths place. 	<p>Student Edition: 112-113, 114-115, 148, 149, 214-215, 216-217, 244-245, 258, 259, 266, 268, 270</p> <p>Teacher Guide: 111A, 111, 112A, 113A, 115A, 214A, 214, 216A, 217A</p>
<p>3. explains the relative magnitude between whole numbers, fractions greater than or equal to zero, and decimals greater than or equal to zero (2.4.K1a-c).</p>	<p>Student Edition: 112-113, 114-115, 148, 149, 214-215, 216-217, 258, 259</p> <p>Teacher Guide: 112A, 113A, 115A, 214A, 214, 216A, 217A</p>

STANDARDS	PAGE REFERENCES
<p>4. knows and explains numerical relationships between percents, decimals, and fractions between 0 and 1 (2.4.K1a,c), e.g., recognizing that percent means out of a 100, so 60% means 60 out of 100, 60% as a decimal is .60, and 60% as a fraction is 60/100.</p>	<p>Student Edition: 232-233, 234-235, 265, 266</p> <p>Teacher Guide: 233A, 234A, 235A, 235</p>
<p>5. uses equivalent representations for the same simple algebraic expression with understood coefficients of 1 (2.4.K1a), e.g., when students are developing their own formula for the perimeter of a square, they combine $s + s + s + s$ to make $4s$.</p>	<p>Student Edition: 332-333, 334-335, 357, 358</p> <p>Teacher Guide: 332A, 333A, 334A</p>
<p>Benchmark 2: Number Systems and Their Properties – The student demonstrates an understanding of the rational number system and the irrational number π; recognizes, uses, and describes their properties; and extends these properties to algebraic expressions in one variable.</p>	
<p>The student...</p>	
<p>1. classifies subsets of the rational number system as counting (natural) numbers, whole numbers, integers, fractions (including mixed numbers), or decimals (2.4.K1a,c,k).</p>	<p>The following references in <i>MathScape: Seeing and Thinking Mathematically, Course 2</i> © 2005 can be used to meet this objective.</p> <p>Student Edition: 26, 186-187, 213</p> <p>Teacher Guide: 24, 27A, 93E, 186A</p>
<p>2. identifies prime and composite numbers and explains their meaning (2.4.K1d).</p>	<p>Student Edition: 98-99, 100-101, 143, 144</p> <p>Teacher Guide: 98A, 99A, 101A</p>

STANDARDS	PAGE REFERENCES
<p>3. uses and describes these properties with the rational number system and demonstrates their meaning including the use of concrete objects (2.4.K1a) (\$):</p> <p>a. commutative and associative properties of addition and multiplication (commutative – changing the order of the numbers does not change the solution; associative – changing the grouping of the numbers does not change the solution);</p> <p>b. identity properties for addition and multiplication (additive identity – zero added to any number is equal to that number; multiplicative identity – one multiplied by any number is equal to that number);</p> <p>c. symmetric property of equality, e.g., $24 \times 72 = 1,728$ is the same as $1,728 = 24 \times 72$;</p> <p>d. zero property of multiplication (any number multiplied by zero is zero);</p> <p>e. distributive property (distributing multiplication or division over addition or subtraction), e.g., $26(9 + 15) = 26(9) + 26(15)$;</p> <p>f. substitution property (one name of a number can be substituted for another name of the same number), e.g., if $a = 3$ and $a + 2 = b$, then $3 + 2 = b$;</p> <p>g. addition property of equality (adding the same number to each side of an equation results in an equivalent equation – an equation with the same solution), e.g., if $a = b$, then $a + 3 = b + 3$;</p> <p>h. multiplication property of equality (for any equation, if the same number is multiplied to each side of that equation, then the new statement describes an equation equivalent to the original), e.g., if $a = b$, then $a \times 7 = b \times 7$;</p> <p>i. additive inverse property (every number has a value known as its additive inverse and when the original number is added to that additive inverse, the answer is zero), e.g., $+5 + (-5) = 0$.</p>	<p>Student Edition: 104-105, 146, 252-253</p> <p>Teacher Guide: 104A, 252A</p>
<p>4. recognizes and explains the need for integers, e.g., with temperature, below zero is negative and above zero is positive; in finances, money in your pocket is positive and money owed someone is negative.</p>	<p>Student Edition: 244-245, 246-247, 270, 271</p> <p>Teacher Guide: 244A, 245A, 246A</p>

STANDARDS	PAGE REFERENCES
5. recognizes that the irrational number pi can be represented by an approximate rational value, e.g., 22/7 or 3.14.	The following references in <i>MathScape: Seeing and Thinking Mathematically, Course 2</i> © 2005 can be used to meet this objective. Student Edition: 294-295, 310 Teacher Guide: 292-293
Benchmark 3: Estimation – The student uses computational estimation with rational numbers and the irrational number pi in a variety of situations. The student...	
1. estimates quantities with combinations of rational numbers and/or the irrational number pi using various computational methods including mental math, paper and pencil, concrete objects, and/or appropriate technology (2.4.K1a-c) (\$).	Student Edition: 134-135, 138-139, 158, 160, 182, 216-217, 236-237, 259, 267, 284-285 Teacher Guide: 134A, 138A, 216A, 234A
2. uses various estimation strategies and explains how they were used to estimate rational number quantities or the irrational number pi (2.4.K1a-c) (\$)	Student Edition: 134-135, 138-139, 158, 160, 182, 216-217, 236-237, 259, 267, 284-285 Teacher Guide: 134A, 138A, 216A, 234A
3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c).	Student Edition: 134-135, 138-139, 158, 160, 182, 216-217, 236-237, 259, 267, 284-285 Teacher Guide: 134A, 138A, 216A, 234A
4. determines the appropriateness of an estimation strategy used and whether the estimate is greater than (overestimate) or less than (underestimate) the exact answer and its potential impact on the result (2.4.K1a).	Student Edition: 282-283, 284-285 Teacher Guide: 220A, 282A, 284A

STANDARDS	PAGE REFERENCES
Benchmark 4: Computation – The student models, performs, and explains computation with positive rational numbers and integers in a variety of situations.	
The student...	
<p>1. computes with efficiency and accuracy using various computational methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.K1a).</p>	<p>Student Edition: 98-99, 102-103, 118-119, 120-121, 122-123, 124-125, 126-127, 132-133, 134-135, 136-137, 140-141, 145, 151, 152, 153, 154, 157, 158, 159, 161, 220-221, 222-223, 224-225, 226-227, 260, 261, 262, 263</p> <p>Teacher Guide: 98A, 102A, 103A, 118A, 120A, 121A, 122A, 123A, 124A, 126A, 132A, 134A, 135A, 222A, 223A, 224A, 226A, 227A</p>
<p>2. performs and explains these computational procedures:</p> <p>a. N divides whole numbers through a two-digit divisor and a four-digit dividend and expresses the remainder as a whole number, fraction, or decimal (2.4.K1a-b), e.g., $7452 \div 24 = 310 \text{ r } 12$, $310 \frac{12}{24}$, $310 \frac{1}{2}$, or 310.5;</p> <p>b. N adds and subtracts decimals from millions place through thousandths place (2.4.K1c);</p> <p>c. N multiplies and divides a four-digit number by a two-digit number using numbers from thousands place through hundredths place (2.4.K1a-b), e.g., $4,350 \div 1.2 = 3,625$;</p> <p>d. N multiplies and divides using numbers from thousands place through thousandths place by 10; 100; 1,000; .1; .01; .001; or single-digit multiples of each (2.4.K1a-c); e.g., $54.2 \div .002$ or 54.3×300;</p>	<p>Student Edition: 98-99, 102-103, 118-119, 120-121, 122-123, 124-125, 126-127, 132-133, 134-135, 136-137, 140-141, 145, 151, 152, 153, 154, 157, 158, 159, 161, 220-221, 222-223, 224-225, 226-227, 246-247, 248-249, 260, 261, 262, 263, 271, 272</p> <p>Teacher Guide: 98A, 102A, 103A, 118A, 120A, 121A, 122A, 123A, 124A, 126A, 132A, 134A, 135A, 222A, 223A, 224A, 226A, 227A, 246A, 247A, 248A, 249A</p>

STANDARDS	PAGE REFERENCES
<p>Continued from cell above.</p> <p>d. N adds integers (2.4.K1a); e.g., $+6 + -7 = -1$</p> <p>e. ▲N adds, subtracts, and multiplies fractions (including mixed numbers) expressing answers in simplest form (2.4.K1c); e.g., $5\frac{1}{4} \cdot \frac{1}{3} = \frac{21}{4} \cdot \frac{1}{3} = \frac{7}{4}$ or $1\frac{3}{4}$</p> <p>f. N finds the root of perfect whole number squares (2.4.K1a);</p> <p>g. N uses basic order of operations (multiplication and division in order from left to right, then addition and subtraction in order from left to right) with whole numbers;</p> <p>h. adds, subtracts multiplies, and divides rational numbers using concrete objects.</p>	<p>Student Edition: 98-99, 102-103, 118-119, 120-121, 122-123, 124-125, 126-127, 132-133, 134-135, 136-137, 140-141, 145, 151, 152, 153, 154, 157, 158, 159, 161, 220-221, 222-223, 224-225, 226-227, 246-247, 248-249, 260, 261, 262, 263, 271, 272</p> <p>Teacher Guide: 98A, 102A, 103A, 118A, 120A, 121A, 122A, 123A, 124A, 126A, 132A, 134A, 135A, 222A, 223A, 224A, 226A, 227A, 246A, 247A, 248A, 249A</p>
<p>3. recognizes, describes, and uses different representations to express the same computational procedures, e.g., $\frac{3}{4} = 3 \div 4 = 4\overline{)3}$.</p>	<p>Student Edition: 212-213, 226-227, 332-333, 334-335, 357, 358</p> <p>Teacher Guide: 212A, 226A, 332A, 334A</p>
<p>4. identifies, explains, and finds the prime factorization of whole numbers (2.4.K1d).</p>	<p>Student Edition: 98-99, 100-101, 143, 144</p> <p>Teacher Guide: 98A, 99A, 101A</p>
<p>5. finds prime factors, greatest common factor, multiples, and the least common multiple (2.4.K1d).</p>	<p>Student Edition: 98-99, 100-101, 114-115, 143, 144, 150, 309</p> <p>Teacher Guide: 98A, 99A, 99, 100A, 101A, 101</p>
<p>6. finds a whole number percent (between 0 and 100) of a whole number (2.4.K1a,c) (\$), e.g., 12% of 40 is what number?</p>	<p>Student Edition: 236-237, 266, 267</p> <p>Teacher Guide: 236A</p>

STANDARDS	PAGE REFERENCES
<p>Standard 2: Algebra – The student uses algebraic concepts and procedures in a variety of situations.</p>	
<p>Benchmark 1: Patterns – The student recognizes, describes, extends, develops, and explains the general rule of a pattern in variety of situations.</p>	
<p>The student...</p>	
<p>1. identifies, states, and continues a pattern presented in various formats including numeric (list or table), visual (picture, table, or graph), verbal (oral description), kinesthetic (action), and written using these attributes include:</p> <ul style="list-style-type: none"> a. counting numbers including perfect squares, and factors and multiples (number theory) (2.4.K1a); b. positive rational numbers limited to two operations (addition, subtraction, multiplication, division) including arithmetic sequences (a sequence of numbers in which the difference of two consecutive numbers is the same) (2.4.K1a); c. geometric figures through two attribute changes (2.4.K1g); d. measurements (2.4.K1a); e. things related to daily life (2.4.K1a) (\$), e.g., time (a full moon every 28 days), tide, calendar, traffic, or appropriate topics across the curriculum. 	<p>Student Edition: 324-325, 326-327, 332-333, 334-335, 336-337, 342-343, 348-349, 350-351, 352-353, 357, 358, 359, 361, 363, 364, 365</p> <p>Teacher Guide: 333A, 334A, 335A, 337A, 342A, 343A, 349A</p>
<p>2. generates a pattern (repeating, growing) (2.4.K1a).</p>	<p>Student Edition: 324-325, 326-327, 328-329, 332-333, 334-335, 336-337, 344-345, 348-349, 350-351, 354, 355, 356, 357, 358, 359,</p> <p>Teacher Guide: 323, 324A, 325A, 326A, 346, 347</p>
<p>3. extends a pattern when given a rule of one or two simultaneous operational changes (addition, subtraction, multiplication, division) between consecutive terms (2.4.K1a), e.g., find the next three numbers in a pattern that starts with 3, where you double and add 1 to get the next number; the next three numbers are 7, 15, and 31.</p>	<p>Student Edition: 332-333, 334-335, 336-337, 357, 358, 359</p> <p>Teacher Guide: 332A, 333A, 334A, 335A, 337A</p>

STANDARDS	PAGE REFERENCES
<p>4. ▲ states the rule to find the next number of a pattern with one operational change (addition, subtraction, multiplication, division) to move between consecutive terms (2.4.K1a), e.g., given 4, 8, and 16, double the number to get the next term, multiply the term by 2 to get the next term, or add the number to itself for the next term.</p>	<p>Student Edition: 324-325, 326-327, 328-329, 332-333, 334-335, 336-337, 344-345, 348-349, 350-351, 354, 355, 356, 357, 358, 359, Teacher Guide: 323, 324A, 325A, 326A, 346, 347</p>
<p>Benchmark 2: Variables, Equations, and Inequalities – The student uses variables, symbols, positive rational numbers, and algebraic expressions in one variable to solve linear equations and inequalities in a variety of situations.</p>	
<p>The student...</p>	
<p>1. explains and uses variables and/or symbols to represent unknown quantities and variable relationships (2.4.K1a), e.g., $x < 2$.</p>	<p>Student Edition: 332-333, 334-335, 336-337, 357, 358, 359 Teacher Guide: 332A, 333A, 334A, 337A</p>
<p>2. uses equivalent representations for the same simple algebraic expression with understood coefficients of 1 (2.4.K1a), e.g., when students are developing their own formula for the perimeter of a square they combine $s + s + s + s$ to make $4s$.</p>	<p>Student Edition: 332-333, 334-335, 357, 358 Teacher Guide: 332A, 333A, 334A</p>
<p>3. solves (2.4.K1a,e) (\$):</p> <p>a. one-step linear equations (addition, subtraction, multiplication, division) with one variable and whole number solutions, e.g., $2x = 8$ or $x + 7 = 12$</p> <p>b. one-step linear inequalities (addition, subtraction) in one variable with whole numbers, e.g., $x - 5 < 12$;</p>	<p>Student Edition: 332-333, 336-337, 357 Teacher Guide: 332A</p>
<p>4. explains and uses equality and inequality symbols ($=$, \neq, $<$, \leq, $>$, \geq) and corresponding meanings (is equal to, is not equal to, is less than, is less than or equal to, is greater than, is greater than or equal to) to represent mathematical relationships with positive rational numbers (2.4.K1a-b) (\$).</p>	<p>Student Edition: 112-113, 114-115, 149, 150, 214-215, 216-217, 258, 259 Teacher Guide: 112A, 113A, 114A, 214A, 215A, 216A, 217A</p>

STANDARDS	PAGE REFERENCES
5. knows and uses the relationship between ratios, proportions, and percents and finds the missing term in simple proportions where the missing term is a whole number (2.4.K1a,c), e.g., $\frac{1}{2} = x/4$, $\frac{2}{3} = 4/x$, $\frac{1}{4} = x/100$.	Student Edition: 236-237, 267 Teacher Guide: 236A, 237A
6. finds the value of algebraic expressions using whole numbers (2.4.Ka), e.g., If $x = 3$, then $5x = 5(3)$.	Student Edition: 334-335 Teacher Guide: 334A
Benchmark 3: Functions – The student recognizes, describes, and analyzes linear relationships in a variety of situations.	
The student...	
1. recognizes linear relationships using various methods including mental math, paper and pencil, concrete objects, and graphing utilities or appropriate technology (2.4.K1a).	Student Edition: 342-343, 344-345, 361, 362 Teacher Guide: 342A, 343A, 344A, 345A
2. finds the values and determines the rule with one operation using a function table (input/output machine, T-table) (2.4.K1f).	Student Edition: 326-327, 328-329, 355, 356 Teacher Guide: 326A, 327A, 328A, 329A
3. generalizes numerical patterns up to two operations by stating the rule using words (2.4.K1a), e.g., If the sequence is 2400, 1200, 600, 300, 150, ..., what is the rule? In words, the rule could be split the previous number in half or divide the previous number before by 2.	Student Edition: 324-325, 326-327, 328-329, 334-335, 354, 355, 356, 358 Teacher Guide: 324A, 325A, 326A, 327A, 328A, 329A, 334A, 335A
4. uses a given function table (input/output machine, T-table) to identify, plot, and label the ordered pairs using the four quadrants of a coordinate plane (2.4.K1a,f).	Student Edition: 340-341, 342-343, 344-345, 360, 361, 362 Teacher Guide: 340A, 341A, 342A, 343A, 344A, 345A

STANDARDS	PAGE REFERENCES
<p>Benchmark 4: Models – The student generates and uses mathematical models to represent and justify mathematical relationships in a variety of situations.</p>	
<p>The student...</p>	
<p>1. knows, explains, and uses mathematical models to represent mathematical concepts, procedures, and relationships. Mathematical models include:</p> <ul style="list-style-type: none"> a. process models (concrete objects, pictures, diagrams, number lines, hundred charts, measurement tools, multiplication arrays, division sets, or coordinate planes/grids) to model computational procedures and mathematical relationships and to solve equations (1.1.K1-5, 1.2.K1, 1.3.K1-4, 1.4.K1, 1.4.K2a, 1.4.K2c-e, 1.4.K2g, 1.4.K2i, 1.4.K6, 2.1.K1a-b, 2.1.K1d-e, 2.1.K2-4, 2.2.K1-6, 2.3.K1, 2.3.K3-4, 3.2.K1-4, 3.2.K8, 3.3.K1-4, 3.4.K1-3, 4.2.K4) (\$); b. place value models (place value mats, hundred charts, base ten blocks, or unifix cubes) to compare, order, and represent numerical quantities and to model computational procedures (1.1.K1-4, 1.2.K1, 1.3.K1-3, 1.4.K2b, 1.4.K2c-d, 2.2.K4) (\$); c. fraction and mixed number models (fraction strips or pattern blocks) and decimal and money models (base ten blocks or coins) to compare, order, and represent numerical quantities (1.1.K1-4, 1.2.K1, 1.3.K1-3, 1.4.K2b, 1.4.K2d, 1.4.K2f, 1.4.K6, 2.2.K5, 4.1.K4, 4.2.K4) (\$); d. factor trees to find least common multiple and greatest common factor (1.4.K4-5); e. equations and inequalities to model numerical relationships (2.2.K3,) (\$); f. function tables (input/output machines, T-tables) to model numerical and algebraic relationships (2.3.K2, 2.3.K4) (\$); 	<p>Student Edition: 6-7, 8-9, 10-11, 14-15, 16-17, 22-23, 24-25, 30-31, 32-33, 34-35, 36, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 52-53, 54-55, 62-63, 68-69, 72-73, 80, 81, 84, 87, 112-113, 114-115, 118-119, 122, 130-131, 132-133, 136-137, 149, 151, 157, 159, 210-211, 212-213, 232-233, 234-235, 238-239, 246-247, 248-249, 256, 265, 271, 272, 273, 332-333, 334-335, 336-337, 355, 357, 358, 359</p> <p>Teacher Guide: 6A, 7A, 8A, 9A, 10A, 11A, 14A, 15A, 16A, 17A, 22A, 23A, 24A, 25A, 30A, 31A, 32A, 33A, 34A, 35A, 50-51, 52A, 53A, 54A, 55A, 62A, 63A, 68A, 69A, 70-71, 72A, 73A, 112A, 113A, 114A, 115A, 118A, 119A, 130A, 131A, 136A, 210A, 211A, 246A, 247A, 248A, 249A, 332A, 333A, 334A, 335A, 336A, 337A</p>

STANDARDS	PAGE REFERENCES
<p>Continued from cell above.</p> <ul style="list-style-type: none"> g. two-dimensional geometric models (geoboards or dot paper) to model perimeter, area, and properties of geometric shapes and three-dimensional geometric models (nets or solids) and real-world objects to model volume and to identify attributes (faces, edges, vertices, bases) of geometric shapes (2.1.K1c, 3.1.K1-5, 3.1.K7-10, 3.2.K7, 3.3.K1-4); h. tree diagrams to organize attributes and determine the number of possible combinations (4.1.K2); i. graphs using concrete objects, two- and three-dimensional geometric models (spinners or number cubes) and process models (concrete objects, pictures, diagrams, or coins) to model probability (4.1.K1-4) (\$). j. frequency tables, bar graphs, line graphs, circle graphs, Venn diagrams, line plots, charts, tables, single stem-and-leaf plots, and scatter plots to organize and display data (4.2.K1-3) (\$); k. Venn diagrams to sort data and to show relationships (1.2.K1). 	<p>Continued from cell above.</p> <p>Student Edition: 6-7, 8-9, 10-11, 14-15, 16-17, 22-23, 24-25, 30-31, 32-33, 34-35, 36, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 52-53, 54-55, 62-63, 68-69, 72-73, 80, 81, 84, 87, 112-113, 114-115, 118-119, 122, 130-131, 132-133, 136-137, 149, 151, 157, 159, 210-211, 212-213, 232-233, 234-235, 238-239, 246-247, 248-249, 256, 265, 271, 272, 273, 332-333, 334-335, 336-337, 355, 357, 358, 359</p> <p>Teacher Guide: 6A, 7A, 8A, 9A, 10A, 11A, 14A, 15A, 16A, 17A, 22A, 23A, 24A, 25A, 30A, 31A, 32A, 33A, 34A, 35A, 50-51, 52A, 53A, 54A, 55A, 62A, 63A, 68A, 69A, 70-71, 72A, 73A, 112A, 113A, 114A, 115A, 118A, 119A, 130A, 131A, 136A, 210A, 211A, 246A, 247A, 248A, 249A, 332A, 333A, 334A, 335A, 336A, 337A</p>
<p>2. uses one or more mathematical models to show the relationship between two or more things.</p>	<p>Student Edition: 52-53, 54-55, 62-63, 68-69, 72-73, 80, 81, 84, 87 112-113, 114-115, 118-119, 122, 130-131, 132-133, 136-137, 149, 151, 157, 159, 210-211, 212-213, 232-233, 234-235, 238-239, 246-247, 248-249, 256, 265, 271, 272, 273, 332-333, 334-335, 336-337, 355, 357, 358, 359</p> <p>Teacher Guide: 50-51, 52A, 53A, 54A, 55A, 62A, 63A, 68A, 69A, 70-71, 72A, 73A, 112A, 113A, 114A, 115A, 118A, 119A, 130A, 131A, 136A, 210A, 211A, 246A, 247A, 248A, 249A, 332A, 333A, 334A, 335A, 336A, 337A</p>

STANDARDS	PAGE REFERENCES
<p>Standard 3: Geometry – The student uses geometric concepts and procedures in a variety of situations.</p>	
<p>Benchmark 1: Geometric Figures and Their Properties – The student recognizes geometric figures and compares their properties in a variety of situations.</p>	
<p>The student...</p>	
<p>1. recognizes and compares properties of plane figures and solids using concrete objects, constructions, drawings, and appropriate technology (2.4.K1g).</p>	<p>Student Edition: 176-177, 178-179, 180-181, 182-183, 186-187, 188-189, 198, 199, 200, 201, 202, 203</p> <p>Teacher Guide: 176A, 179A, 180A, 183A, 186A, 187A, 188A, 189A</p>
<p>2. recognizes and names regular and irregular polygons through 10 sides including all special types of quadrilaterals: squares, rectangles, parallelograms, rhombi, trapezoids, kites (2.4.K1g).</p>	<p>Student Edition: 176-177, 178-179, 180-181, 182-183, 198, 199, 200, 201</p> <p>Teacher Guide: 176A, 179A, 180A, 183A</p>
<p>3. names and describes the solids [prisms (rectangular and triangular), cylinders, cones, spheres, and pyramids (rectangular and triangular)] using the terms faces, edges, vertices, and bases (2.4.K1g).</p>	<p>Student Edition: 186-187, 188-189, 202, 203</p> <p>Teacher Guide: 186A, 187A, 188A, 189A,</p>
<p>4. recognizes all existing lines of symmetry in two-dimensional figures (2.4.K1g).</p>	<p>See <i>MathScape: Seeing and Thinking Mathematically, Course 2 2005</i></p> <p>Student Edition: 278-279, 290-291, 304, 309</p>
<p>5. recognizes and describes the attributes of similar and congruent figures (2.4.K1g).</p>	<p>Student Edition: 186-187, 188-189, 282-283, 300, 301</p> <p>Teacher Guide: 188A</p>
<p>6. recognizes and uses symbols for angle (find symbol for), line(\leftrightarrow), line segment ($—$), ray (\rightarrow), parallel (\parallel), and perpendicular (\perp).</p>	<p>Student Edition: 176-177, 178-179, 186-187</p> <p>Teacher Guide: 176A, 177A, 187A</p>
<p>7. ▲ classifies (2.4.K1g):</p> <p>a. angles as right, obtuse, acute, or straight;</p> <p>b. triangles as right, obtuse, acute, scalene, isosceles, or equilateral.</p>	<p>Student Edition: 178-179, 180-181, 199</p> <p>Teacher Guide: 178A, 179A, 180A</p>

STANDARDS	PAGE REFERENCES
<p>8. identifies and defines circumference, radius, and diameter of circles and semicircles.</p>	<p>See <i>Math Connects: Concepts, Skills, and Problem Solving, Course 1</i> © 2009.</p> <p>Student Edition: 528-530 <i>Check Your Understanding</i> 531 #1-#10 <i>Mid Chapter Quiz</i> 545 #4-#11 <i>Practice and Problem Solving</i> 531-533 #11-#37 <i>Spiral Review</i> 538 #26-#28, 544 #31 <i>Test Practice</i> 533 #38-#39</p> <p>Teacher Wraparound Edition: A 533; AE 529, 530; FA 531</p>
<p>9. recognize that the sum of the angles of a triangle equals 180° (2.4.K1g).</p>	<p>See <i>Math Connects: Concepts, Skills, and Problem Solving, Course 1</i> © 2009.</p> <p>Student Edition: 486-488 <i>Check Your Understanding</i> 489 #1-#7 <i>Geometry Lab</i> 485 <i>Mini-Lab</i> 486 <i>Practice and Problem Solving</i> 489-491 #8-#36 <i>Study Guide and Review</i> 512 #22-#26 <i>Test Practice</i> 491 #37-#38</p> <p>Teacher Wraparound Edition: A 491; AE 486, 488; FA 489</p>
<p>10. determines the radius or diameter of a circle given one or the other.</p>	<p>See <i>Math Connects: Concepts, Skills, and Problem Solving, Course 1</i> © 2009.</p> <p>Student Edition: 528-530 <i>Check Your Understanding</i> 531 #1-#10 <i>Mid-Chapter Quiz</i> 545 #8-#9 #11 <i>Practice and Problem Solving</i> 531 #11-#26, 532 #30 <i>Spiral Review</i> 538 #26-#28 <i>Study Guide and Review</i> 561, 562 #11-#17 <i>Test Practice</i> 533 #38-#39</p> <p>Teacher Wraparound Edition: A 533; AE 529, 530; FA 531</p>

STANDARDS	PAGE REFERENCES
<p>Benchmark 2: Measurement and Estimation – The student estimates, measures, and uses measurement formulas in a variety of situations.</p>	
<p>The student...</p>	
<p>1. determines and uses whole number approximations (estimations) for length, width, weight, volume, temperature, time, perimeter, and area using standard and nonstandard units of measure (2.4.K1a) (\$).</p>	<p>Student Edition: 182-183, 201, 284-285, 286-287, 294-295, 313, 314, 334-335, 358 Teacher Guide: 182A, 183A, 284A, 285A, 286A, 287A, 294A, 295A,</p>
<p>2. selects, explains the selection of, and uses measurement tools, units of measure, and level of precision appropriate for a given situation to find accurate rational number representations for length, weight, volume, temperature, time, perimeter, area, and angle measurements (2.4.K1a) (\$).</p>	<p>Student Edition: 282-283, 284-285, 286-287 Teacher Guide: 281A, 282A, 283A, 287A</p>
<p>3. converts (2.4.K1a):</p> <ol style="list-style-type: none"> within the customary system, e.g., converting feet to inches, inches to feet, gallons to pints, pints to gallons, ounces to pounds, or pounds to ounces; ▲ within the metric system using the prefixes: kilo, hecto, deka, deci, centi, and milli; e.g., converting millimeters to meters, meters to millimeters, liters to kiloliters, kiloliters to liters, milligrams to grams, or grams to milligrams. 	<p>Student Edition: 149, 259 #28-#30, 292-293, 313 Teacher Guide: 292A, 293A</p>
<p>4. uses customary units of measure to the nearest sixteenth of an inch and metric units of measure to the nearest millimeter (2.4.K1a).</p>	<p>Student Edition: 286-287, 290-291, 292-293 Teacher Guide: 290A</p>
<p>5. recognizes and states perimeter and area formulas for squares, rectangles, and triangles (2.4.K1g).</p> <ol style="list-style-type: none"> uses given measurement formulas to find perimeter and area of: squares and rectangles, figures derived from squares and/or rectangles. 	<p>Student Edition: 158, 182-183, 201, 262 #21-#22, 284-285, 294-295, 310, 314, 319 #9 Teacher Guide: 182A, 183A, 284A, 285A, 294A, 295A</p>

STANDARDS	PAGE REFERENCES
6. describes the composition of the metric system (2.4.K1a): <ol style="list-style-type: none"> meter, liter, and gram (root measures); kilo, hecto, deka, deci, centi, and milli (prefixes). 	Student Edition: 292-293, 296-297, 313, 315 Teacher Guide: 292A, 293A
7. finds the volume of rectangular prisms using concrete objects (2.4.K1g).	Student Edition: 284-285, 294-295, 296-297, 304-305, 310, 314, 318 Teacher Guide: 284A, 285A, 294A, 295A, 296A, 297A, 304A, 305A
1. estimates an approximate value of the irrational number pi (2.4.K1a).	The following references in <i>MathScape: Seeing and Thinking Mathematically, Course 2</i> © 2005 can be used to meet this objective. Student Edition: 294-295, 310 Teacher Guide: 292-293
Benchmark 3: Transformational Geometry – The student recognizes and performs transformations on two- and three-dimensional geometric figures in a variety of situations.	
The student...	
1. ▲ ■ identifies, describes, and performs one or two transformations (reflection, rotation, translation) on a two-dimensional figure (2.4.K1a).	Student Edition: 168-169, 176-177, 195, 198 Teacher Guide: 168A, 169A
2. reduces (contracts/shrinks) and enlarges (magnifies/grows) simple shapes with simple scale factors (2.4.K1a), e.g., tripling or halving.	Student Edition: 280-281, 282-283, 284-285, 286-287, 290-291, 300-301, 302-303, 304-305, 306-307, 308, 309, 310, 311, 312, 316, 317, 318 Teacher Guide: 280A, 281A, 282A, 283A, 285A, 288-289, 290A, 298-299, 301A, 302A
3. recognizes three-dimensional figures from various perspectives (top, bottom, sides, corners) (2.4.K1a).	Student Edition: 166-167, 168-169, 170-171, 172-173, 194, 195, 196, 197 Teacher Guide: 166A, 167A, 168A, 169A, 170A, 171A, 172A, 173A

STANDARDS	PAGE REFERENCES
4. recognizes which figures will tessellate (2.4.K1a).	The following references can be expanded to meet this objective. Student Edition: 334-335, 336-337, 350-351
Benchmark 4: Geometry From An Algebraic Perspective – The student relates geometric concepts to a number line and a coordinate plane in a variety of situations.	
The student...	
1. uses a number line (horizontal/vertical) to order integers and positive rational numbers (in both fractional and decimal form) (2.4.K1a).	Student Edition: 340-341, 342-343, 348-349, 360-364 Teacher Guide: 340A, 342A
2. organizes integer data using a T-table and plots the ordered pairs in all four quadrants of a coordinate plane (coordinate grid) (2.4.K1a).	Student Edition: 340-341, 342-343, 344-345, 360, 361, 362 Teacher Guide: 340A, 341A, 342A, 343A, 344A,
3. ▲ uses all four quadrants of the coordinate plane to (2.4.K1a): a. identify the ordered pairs of integer values on a given graph; b. plot the ordered pairs of integer values.	Student Edition: 340-341, 342-343, 344-345, 360, 361, 362 Teacher Guide: 340A, 341A, 342A, 343A, 344A,
Standard 4: Data – The student uses concepts and procedures of data analysis in a variety of situations.	
Benchmark 1: Probability – The student applies the concepts of probability to draw conclusions and to make predictions and decisions including the use of concrete objects in a variety of situations.	
The student...	
1. recognizes that all probabilities range from zero (impossible) through one (certain) and can be written as a fraction, decimal, or a percent (2.4.K1i) (\$), e.g., when you flip a coin, the probability of the coin landing on heads (or tails) is $\frac{1}{2}$, .5, or 50%. The probability of flipping a head on a two-headed coin is 1. The probability of flipping a tail on a two-headed coin is 0.	Student Edition: 30-31, 32-33, 34-35, 45, 46, 47 Teacher Guide: 28-29, 30A, 31A, 32A, 33A, 34A, 35A

STANDARDS	PAGE REFERENCES
<p>2. ▲ ■ lists all possible outcomes of an experiment or simulation with a compound event composed of two independent events in a clear and organized way (2.4.K1h-j), e.g., use a tree diagram or list to find all the possible color combinations of pant and shirt ensembles, if there are 3 shirts (red, green, blue) and 2 pairs of pants (black and brown).</p>	<p>Student Edition: 30-31, 32-33, 45, 46 Teacher Guide: 30A, 32A, 35A</p>
<p>3. recognizes whether an outcome in a compound event in an experiment or simulation is impossible, certain, likely, unlikely, or equally likely (2.4.K1i).</p>	<p>Student Edition: 30-31, 32-33, 45, 46 Teacher Guide: 30A, 32A, 35A</p>
<p>4. ▲ represents the probability of a simple event in an experiment or simulation using fractions and decimals (2.4.K1c,i), e.g., the probability of rolling an even number on a single number cube is represented by $\frac{1}{2}$ or .5.</p>	<p>Student Edition: 30-31, 32-33, 34-35, 45, 46, 47 Teacher Guide: 28-29, 30A, 31A, 32A, 33A, 34A, 35A</p>
<p>Benchmark 2: Statistics – The student collects, organizes, displays, and explains numerical (rational numbers) and non-numerical data sets in a variety of situations with a special emphasis on measures of central tendency.</p>	
<p>The student...</p>	
<p>1. organizes, displays, and reads quantitative (numerical) and qualitative (non-numerical) data in a clear, organized, and accurate manner including a title, labels, categories, and rational number intervals using these data displays (2.4.K1j) (\$):</p> <ol style="list-style-type: none"> graphs using concrete objects; frequency tables and line plots; bar, line, and circle graphs; Venn diagrams or other pictorial displays; charts and tables; single stem-and-leaf plots; scatter plots; 	<p>Student Edition: 6-7, 10-11, 14-15, 16-17, 18-19, 22-23, 24-25, 26-27, 36, 38, 39, 40, 41, 42, 43, 44 Teacher Guide: 6A, 7A, 10A, 11A, 15A, 15A, 16A, 17A, 22A</p>
<p>2. selects and justifies the choice of data collection techniques (observations, surveys, or interviews) and sampling techniques (random sampling, samples of convenience, or purposeful sampling) in a given situation (2.4.K1j).</p>	<p>Student Edition: 6-7, 10-11, 14-15, 16-17, 18-19, 22-23, 24-25, 26-27, 36, 38, 39, 40, 41, 42, 43, 44 Teacher Guide: 6A, 7A, 10A, 11A, 15A, 15A, 16A, 17A, 22A</p>

STANDARDS	PAGE REFERENCES
3. uses sampling to collect data and describe the results (2.4.K1j) (\$).	Student Edition: 6-7, 8-9, 10-11, 18-19, 22-23, 24-25, 26-27, 30-31, 36, 37, 38, 41, 42, 43, 44 Teacher Guide: 6A, 8A
4. determines mean, median, mode, and range for (2.4.K1a,c) (\$): a. a whole number data set, b. a decimal data set with decimals greater than or equal to zero.	Student Edition: 6-7, 8-9, 10-11, 18-19, 22-23, 24-25, 26-27, 30-31, 36, 37, 38, 41, 42, 43, 44 Teacher Guide: 6A, 8A