

A Correlation of

Scott Foresman • Addison Wesley

en**Vision**MATH™

to the

Kansas

**Curricular Standards for Mathematics
Knowledge Base & Application Indicators**

Grade Six

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G/M-258_G6

INTRODUCTION

This correlation is designed to show the close alignment between Scott Foresman-Addison Wesley enVisionMATH and the Kansas Curricular Standards for Mathematics. Correlation page references are to the Teacher’s Edition and Student Edition.

The en**Vision**MATH™ program is based around scientific research on how children learn mathematics as well as on classroom-based evidence that validates proven reliability.

Personalized Curriculum

en**Vision**MATH™ provides 20 (16 in Kindergarten) focused topics that are coherent, digestible groups of lessons focusing on one or a few related content areas. A flexible sequence of topics is small enough for a district to rearrange into a personalized curriculum that matches the sequence preferred by the district. The curriculum is designed so that all standards can be taught before the major mathematics testing.

Instructional Design

en**Vision**MATH™ teaches for deep conceptual understanding using research-based best practices. Essential understandings connected by Big Ideas are explicitly stated in the Teacher’s Edition. Daily Spiral Review and the Problem of the Day focus foundational skills and allow for ongoing practice with a variety of problem types. Daily interactive concept development encourages students to interact with teachers and other students to develop conceptual understanding.

Visual Learning allows students to benefit from seeing math ideas portrayed pictorially as well as being able to see connections between ideas. en**Vision**MATH™ created a Visual Learning Bridge which is a step-by-step bridge between the interactive learning activity and the lesson exercises to help students focus on one idea at a time and see the connections within the sequence of ideas. The strong sequential visual/verbal connections deepen conceptual understanding for students of all learning modalities and are particularly effective with English language learners and struggling readers. Guiding questions in blue type help the teacher guide students through the examples, ask probing questions to stimulate higher order thinking, and allow for checking of understanding.

Differentiated Instruction

en**Vision**MATH™ engages and interests all students with leveled activities for ongoing differentiated instruction. A Teacher-Directed Intervention activity at the end of every lesson provides immediate opportunities to get students on track. In addition, ready made leveled learning centers for each lesson allow different students to do the same activity at different levels at the same time giving the teacher uninterrupted time to focus on reteaching students who require intervention. All centers can be used repeatedly due to the inclusion of a “Try Again” at the end. They can also be used for ongoing review and they can be used year after year. Topic-specific considerations for EL, Special Education, At-Risk, and Advanced students enable the teacher to accommodate the diverse learners in the classroom.

**Scott Foresman – Addison Wesley enVisionMATH
to the
Kansas Curricular Standards for Mathematics**

Knowledge Base Indicators

Grade Six

Standard 1: Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 1: Number Sense – The student demonstrates number sense for rational numbers and simple algebraic expressions in one variable in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
The student... 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) (\$).	Topic 1: 10A-12, 13A-13B, 14A-16, 17A-17B Topic 3: 82A-83B Topic 5: 128A-130, 131A-131B, 132A-133B, 134A-135B Topic 6: 146A-147B, 148A-149B, 150A-152, 153A-153B Topic 14: 344A-347B, 348A-349B
2. ▲ compares and orders (2.4.K1a-c) (\$):	
a. integers;	Topic 1: 8A-9A, 27A, 28 Topic 10: 222A-223B, 224A-225B, 226A, 254-257
b. fractions greater than or equal to zero,	Topic 6: 148B-149B Topic 10: 226A-228, 229A-229B

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
c. decimals greater than or equal to zero through thousandths place.	Topic 1: 22A-23B, 24A, 26, 27A, 28 Topic 6: 150 Topic 10: 226A-228, 229A-229B, 230A
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).	Topic 1: 8A-9A, 22A-23B Topic 6: 142A-142F, 143, 146A-147B, 148A-149B, 150A-152, 153A-153B, 156-159 Topic 10: 222A-223B, 224A-225B, 226A-228, 229A-229B, 230A, 254-257
4. ▲ N 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.	Topic 6: 142A-142F, 143, 146A-147B, 148A-149B, 150A-152, 153A-153B, 156-159 Topic 14: 342A-342F, 343, 344A-347B, 348A-349B, 350A-351B, 352A-353B, 354A-357B, 358A-361B
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 $4s$.	Topic 2: 34B Topic 4: 110, 114, 115A Topic 17: 426B, 426, 438-439, 443

Benchmark 2: Number Systems and Their Properties – The student demonstrates an understanding of the whole number system; recognizes, uses, and explains the concepts of properties as they relate to the whole number system; and extends these properties to integers, fractions (including mixed numbers), and decimals.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<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>Topic 5: 128A-130, 131A-131B Topic 6: 142B, 150A-152, 153A-153B Topic 10: 220B, 222A-223B, 226A-228, 229A-229B</p>
<p>2. identifies prime and composite numbers and explains their meaning (2.4.K1d).</p>	<p>Topic 5: 124A-125B, 126A, 126-127, 127A-127B, 138-141</p>
<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>Topic 2: 30B, 34A-35B, 42-43, 45A, 56 Topic 10: 239</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>Topic 2: 30B, 34A-35B, 56 Topic 10: 239</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>Topic 4: 101</p>

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
d. zero property of multiplication (any number multiplied by zero is zero);	Topic 10: 239 (notes to teacher in page margin)
e. distributive property (distributing multiplication or division over addition or subtraction), e.g., $26(9 + 15) = 26(9) + 26(15)$;	Topic 2: 30B, 40A-41B, 42A Topic 4: 102A (Daily Spiral Review) Topic 8: 192A-192 Topic 10: 239
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 $3 + 2 = b$;	Topic 2: 46A-47B Topic 10: 242-243
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 $a + 3 = b + 3$;	Topic 4: 96A-97B, 98A-100, 101A-101B, 102A-105B, 113, 114-117 Topic 15: 372A-375B
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 $a \times 7 = b \times 7$;	Topic 4: 96A-97B, 106A-108, 109A-109B, 110A-113B, 114-117 Topic 15: 372A-375B
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., $+5 + (-5) = 0$.	Topic 10: 222A-223B, 224A, 256

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<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>Topic 10: 220A-220F, 221, 222A-223B, 224A-225B, 230A-233B, 234A-237B, 238A-239B, 240A-241B, 242A-244, 245A-245B, 246A-249B, 250A-253B, 254-257</p>
<p>5. recognizes that the irrational number pi can be represented by an approximate rational value, e.g., 22/7 or 3.14.</p>	<p>Topic 17: 424B, 424D, 438A-441B, 442A-443B, 444A, 447, 448-451 Topic 18: 464A-465B, 466A, 469, 470-473</p>

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>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) (\$).</p>	<p>Topic 1: 25 Topic 3: 62A-63B, 66A-69B, 74, 77, 81 Topic 10: 244 Topic 12: 312 Topic 13: 325, 327 Topic 17: 436, 440 Topic 18: 469 Topic 19: 482 Topic 20: 523</p>

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<p>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) (\$)</p>	<p>Topic 1: 25 Topic 3: 62A-63B, 66A-69B, 74, 77, 81 Topic 10: 244 Topic 12: 312 Topic 13: 325, 327 Topic 17: 436, 440 Topic 18: 469 Topic 19: 482 Topic 20: 523</p>
<p>3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c).</p>	<p>Topic 1: 25 Topic 3: 62A-63B, 66A-69B, 74, 77, 81 Topic 10: 244 Topic 12: 312 Topic 13: 325, 327 Topic 16: 411 Topic 17: 436, 440 Topic 19: 482 Topic 20: 523</p>
<p>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).</p>	<p>Topic 1: 25 Topic 3: 62A-63B, 66A-69B, 74, 77, 81 Topic 10: 244 Topic 12: 312 Topic 13: 325, 327 Topic 17: 436, 440 Topic 18: 469 Topic 19: 482 Topic 20: 523</p>

Benchmark 4: Computation – The student models, performs, and explains computation with whole numbers, fractions including mixed numbers, and decimals including the use of concrete objects in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <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>Topic 3: 64A-65B, 70A-72, 73A-73B, 74A-75B, 76A-77B, 78A-79B Topic 7: 162A-163B, 166A-169B, 172A-173B, 174A-176, 177A-B Topic 8: 230A-233B, 234A-237B, 238A-239B, 240A-241B</p>
<p>2. performs and explains these computational procedures:</p>	
<p>a. Δ 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>Topic 1: 18A-20, 21A-21B, 28-29 Topic 3: 68-69, 74A-75B, 76A-77B, 79, 88-91 Topic 4: 108</p>
<p>b. N adds and subtracts decimals from millions place through thousandths place (2.4.K1c);</p>	<p>Topic 3: 62A-63B, 64A-65B, 66A, 70A, 88-91</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>Topic 1: 10A-12, 13A-13B, 18A-20, 21A-21B, 28-29 Topic 2: 34-35B, 36A-39B, 40A-41B, 56-58 Topic 3: 68-69, 74A-75B, 76A-77B, 79, 88-91 Topic 4: 106-108</p>

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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 ;	Topic 1: 18A-20, 21A-21B, 28-29 Topic 3: 76A-77B, 78A-78B, 79, 82A-83B
e. N adds integers (2.4.K1a); e.g., $+6 + -7 = -1$	Topic 10: 220A, 220F, 230A-233B, 234A-237B, 242A-245B, 254-257
f. ▲ 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 $1\frac{3}{4}$	Topic 7: 162A-163B, 164A-165B, 166A-169B, 170A-171B, 172A-173B, 174A-177B, 180-183 Topic 8: 184A-184F, 186A-187B, 188A-189B, 190A-191B, 192A-193B, 196-199
g. N finds the root of perfect whole number squares (2.4.K1a);	Topic 4: 109
h. 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;	Topic 2: 30B, 36A-39B, 50A, 54-57 Topic 3: 80A-81B, 82A
i. adds, subtracts multiplies, and divides rational numbers using concrete objects.	Topic 3: 64A-65B, 70A-73B, 74A-75B, 76A-77B, 78A-79B Topic 7: 162A-163B, 166A-169B, 172A-173B, 174A-177B Topic 8: 190A-191B, 192A-193B Topic 9: 202A-203B, 204A-205B, 206A-207B, 210A-211B
3. recognizes, describes, and uses different representations to express the same computational procedures, e.g., $\frac{3}{4} = 3 \div 4 = 4\sqrt{3}$.	Topic 3: 64A-65B, 70A-73B, 74A-75B, 76A-77B, 78A-79B Topic 7: 162A-163B, 166A-169B, 172A-173B, 174A-177B Topic 8: 190A-191B, 192A-193B Topic 9: 202A-203B, 204A-205B, 206A-207B, 210A-211B

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4. identifies, explains, and finds the prime factorization of whole numbers (2.4.K1d).	Topic 5: 118A, 124A-125B, 126A-127B, 138-141
5. finds prime factors, greatest common factor, multiples, and the least common multiple (2.4.K1d).	Topic 5: 118A, 124A-125B, 126A-127B, 138-141 Topic 7: 164A-165B, 180-183
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?	Topic 14: 342C, 354A-357B, 358A-361B, 362A-363B, 364-367

Standard 2: Algebra – The student uses algebraic concepts and procedures in a variety of situations.

Benchmark 1: Patterns – The student recognizes, describes, extends, develops, and explains relationships in patterns in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p><i>The student...</i></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>	
<p>a. counting numbers including perfect squares, and factors and multiples (number theory) (2.4.K1a);</p>	<p>Topic 1: 11, 13B (Enrichment), 48A-49B Topic 11: 290A-291B, 292-293, 296-297 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397 Topic 20: 527</p>

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<p>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);</p>	<p>Topic 6: 153 Topic 9: 214A-215B Topic 11: 290A-291B, 292-293, 296-297 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397 Topic 20: 527</p>
<p>c. geometric figures through two attribute changes (2.4.K1g);</p>	<p>Topic 3: 87 Topic 11: 290-291B, 292-293, 296-297 Topic 15: 279B Topic 18: 468 Topic 19: 509B (Enrichment)</p>
<p>d. measurements (2.4.K1a);</p>	<p>Topic 6: 154B Topic 9: 214B-215A Topic 18: 468 Topic 20: 527</p>
<p>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>	<p>Topic 9: 214B-215A Topic 15: 378B-379B Topic 20: 527</p>

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<p>2. generates a pattern (repeating, growing) (2.4.K1a).</p>	<p>Topic 1: 11, 13B (Enrichment), 48A-49B Topic 3: 87 Topic 9: 214B-215A Topic 11: 290A-291B, 292-293, 296-297 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397 Topic 18: 468 Topic 20: 527</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>Topic 1: 11, 13B (Enrichment), 48A-49B Topic 6: 153 Topic 9: 214B-215A Topic 11: 290A-291B, 292-293, 296-297 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397 Topic 18: 468 Topic 20: 527</p>
<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>Topic 1: 11, 13B (Enrichment), 48A-49B Topic 6: 153 Topic 9: 214B-215A Topic 11: 290A-291B, 292-293, 296-297 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397 Topic 18: 468 Topic 20: 527</p>

Benchmark 2: Variables, Equations, and Inequalities – The student uses variables, symbols, whole numbers, and algebraic expressions in one variable to solve linear equations in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p><i>The student...</i></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>Topic 2: 30A-30F, 31, 32A-33B, 34A-35B, 36A-39B, 40A-41B, 42A-45B, 46A-47B, 48A-49B, 50A-53B, 54-59 Topic 6: 153 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397</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>Topic 2: 32-33 Topic 17: 426B, 438-439, 443</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>Topic 4: 94A-94F, 95, 96A-97B, 98A-101B, 102A-105B, 106A-109B, 110A-113B, 114-117B</p>

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b. one-step linear inequalities(addition, subtraction) in one variable with whole numbers, e.g., $x - 5 < 12$;	Topic 15: 389
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) (\$).	Topic 1: 8A-9A, 22A-23B, 24A, 26, 27A, 28 Topic 6: 148B-149B, 150 Topic 10: 222A-223B, 224A-225B, 226A-228, 229A-229B, 230A, 254-257 Topic 15: 389
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., $\frac{1}{2} = \frac{x}{4}$, $\frac{2}{3} = \frac{4}{x}$, $\frac{1}{4} = \frac{x}{100}$.	Topic 12: 300A-301B, 302A-305B, 306A-307B, 308A-309B, 310A-313B Topic 13: 322A-323B, 324A-325B, 326A-327B, 328A-329B, 330A-333B Topic 14: 344A-347B, 348A-349B, 350A-351B, 352A-353B, 354A-357B
6. finds the value of algebraic expressions using whole numbers (2.4.Ka), e.g., If $x = 3$, then $5x = 5(3)$.	Topic 2: 30A-30F, 31, 46A-47B, 48A-49B, 50A-53B, 54-59 Topic 17: 427, 429, 430-431, 434B, 435 Topic 18: 452F, 458-459, 461A, 462-463

Benchmark 3: Functions – The student recognizes, describes, and examines whole number relationships in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>1. recognizes linear relationships using various methods including mental math, paper and pencil, concrete objects, and graphing utilities or appropriate technology (2.4.K1a).</p>	<p>Topic 15: 370A-370F, 371, 372A-375B, 376A-377B, 378A-379B, 380A-381B, 382A-385B, 386A-389B, 390A-391B, 392-397B</p>
<p>2. finds the values and determines the rule with one operation using a function table (input/output machine, T-table) (2.4.K1f).</p>	<p>Topic 6: 153 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 380A, 380-381B, 382-383, 385A-385B, 386A-388, 389A-389B, 390B-391, 392-397 Topic 18: 461, 468</p>
<p>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.</p>	<p>Topic 1: 11, 13B (Enrichment), 48A-49B Topic 6: 153 Topic 9: 214B-215A Topic 11: 290A-291B, 292-293, 296-297 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397 Topic 18: 468 Topic 20: 527</p>
<p>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).</p>	<p>Topic 10: 246A-249B, 250A, 254 Topic 15: 380A-381B, 382A-385B, 386A-388, 389A-389B, 391-391B, 392-397B Topic 19: 478B-479B</p>

Benchmark 4: Models – The student develops and uses mathematical models including the use of concrete objects to represent and explain mathematical relationships in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student... 1. knows, explains, and uses mathematical models to represent mathematical concepts, procedures, and relationships. Mathematical models include:</p>	
<p>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) (\$);</p>	<p>Topic 4: 102-103, 110-111 Topic 5: 130 Topic 7: 168 Topic 8: 190-191 Topic 9: 202-203, 205, 209 Topic 10: 237 Topic 11: 288, 290-291 Topic 12: 314-315 Topic 13: 336 Topic 14: 346 Topic 19: 488-491</p>
<p>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, 2.2K4) (\$);</p>	<p>Topic 1: 2B, 2F, 3, 4-5, 10-11, 14-16 Topic 3: 60B, 64B, 70B-72, 74B-75, 78B-78</p>

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<p>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) (\$):</p>	<p>Topic 5: 128A-131B, 132A-133B, 134A-135B Topic 6: 142C, 144A-145B, 146A-147B, 148A-149B Topic 7: 160C-160D, 162A-163B, 166A-169B, 172A-173B, 174A-177B Topic 8: 186A-187B, 190A-191B, 192A-193B</p>
<p>d. factor trees to find least common multiple and greatest common factor (1.4.K4-5);</p>	<p>Topic 5: 118A, 124A-125B, 126A-127B, 138-141 Topic 7: 164A-165B, 180-183</p>
<p>e. equations and inequalities to model numerical relationships (2.2.K3,) (\$);</p>	<p>Topic 15: 370A-370F, 371, 372A-375B, 376A-377B, 378A-379B, 380A-381B, 382A-385B, 386A-389B, 390A-391B, 392-397B</p>
<p>f. function tables (input/output machines, T-tables) to model numerical and algebraic relationships (2.3.K2, 2.3.K4) (\$);</p>	<p>Topic 6: 153 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 380A, 380-381B, 382-383, 385A-385B, 386A-388, 389A-389B, 390B-391, 392-397 Topic 18: 461, 468</p>
<p>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);</p>	<p>Topic 11: 274A-277B, 278A-281B, 282A-283B, 284A-287B, 288A-289B Topic 17: 426A-429B, 430A-433B, 434A-437B, 438A-441B, 442A-443B Topic 18: 454A-457B, 458A-461B, 462A-463B, 464A-465B, 466A-469B</p>

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
h. tree diagrams to organize attributes and determine the number of possible combinations (4.1.K2);	Topic 20: 518B, 520B, 521, 522, 523A-523B, 540-541
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) (\$).	Topic 20: 518A-518F, 519, 520A-523B, 524A-527B, 528A-529B, 530A-533B, 534A-535B, 536A-537B, 538-541
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) (\$);	Topic 19: 474A-474F, 475, 476A-479B, 480A-483B, 484A-487B, 488A-489B, 493B, 494A-497B, 498A-499B, 512-515 Topic 20: 530B
k. Venn diagrams to sort data and to show relationships (1.2.K1).	Topic 5: 122-123, 127 Topic 11: 260B
2. uses one or more mathematical models to show the relationship between two or more things.	Topic 6: 153 Topic 12: 300A-301B, 302A-305B, 310A-313B Topic 15: 370A-370F, 371, 372A-375B, 376A-377B, 378A-379B, 380A-381B, 382A-385B, 386A-389B, 390A-391B, 392-397B Topic 18: 468

Standard 3: Geometry – The student uses geometric concepts and procedures in a variety of situations.

Benchmark 1: Geometric Figures and Their Properties – The student recognizes geometric shapes and compares their properties in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<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>Topic 11: 274A-277B, 278A-281B, 282A-283B, 284A-287B, 288A-289B Topic 17: 426A-429B, 430A-433B, 434A-437B, 438A-441B, 442A-443B Topic 18: 454A-457B, 458A-461B, 462A-463B, 464A-465B, 466A-469B</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>Topic 11: 260B-260F, 274A-277B, 278A-281B, 282A, 284A-287B, 288A-289B, 290-291, 292-295 Topic 17: 424D, 426A-429B, 430A-433B, 434A-437B, 448-449</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>Topic 18: 452A-452F, 453, 454A-457B, 458A-461B, 462A-463B, 464A-465B, 466A-469B, 470-473</p>
<p>4. recognizes all existing lines of symmetry in two-dimensional figures (2.4.K1g).</p>	<p>Topic 11: 288A-289B, 292-293</p>
<p>5. recognizes and describes the attributes of similar and congruent figures (2.4.K1g).</p>	<p>Topic 11: 284A-287B, 292-293</p>

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
6. recognizes and uses symbols for angle (find symbol for), line(\leftrightarrow), line segment (—), ray (\rightarrow), parallel (\parallel), and perpendicular (\perp).	Topic 11: 260A, 260C-260D, 260F, 262A-265B, 266A-269B, 270A-273B, 274A, 292-293
7. \blacktriangle classifies (2.4.K1g):	
a. angles as right, obtuse, acute, or straight;	Topic 11: 260A, 260C-260D, 260F, 266A-269B, 270A-273B, 274A, 292-293
b. triangles as right, obtuse, acute, scalene, isosceles, or equilateral.	Topic 11: 274A-277B, 278A, 292-293
8. identifies and defines circumference, radius, and diameter of circles and semicircles.	Topic 11: 260B, 282A-283B, 292-293 Topic 17: 438A-441B, 442A-443B
9. recognize that the sum of the angles of a triangle equals 180° (2.4.K1g).	Topic 11: 260C, 274A-277B, 278A, 292-293
10. determines the radius or diameter of a circle given one or the other.	Topic 11: 260B, 282A-283B, 292-293 Topic 17: 438A-441B, 442A-443B

Benchmark 2: Measurement and Estimation – The student estimates, measures, and uses measurement formulas in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<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>Topic 16: 411, 413 Topic 17: 436, 440 Topic 18: 469</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>Topic 11: 260A, 260C-260D, 260F, 266A-269B, 270A-273B, 274A, 292-293 Topic 16: 400A-403B, 404A-407B, 408A-411B, 412A-413B, 414A-417B, 418A-419B Topic 17: 426A-429B, 430A-433B</p>
<p>3. converts (2.4.K1a):</p> <p>a. 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;</p>	<p>Topic 16: 398A-398F, 400A-402, 403A-403B, 404A, 420-423</p>
<p>b. ▲ 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>	<p>Topic 16: 398A-398F, 404A-407B, 412A, 420-423</p>

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
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).	Topic 16: 398B, 400B, 408B-410, 411B, 412B Topic 17: 429B (Enrichment)
5. recognizes and states perimeter and area formulas for squares, rectangles, and triangles (2.4.K1g).	
a. uses given measurement formulas to find perimeter and area of: squares and rectangles,	Topic 17: 424A-424F, 426A-429B, 430A-433B, 448-451
b. figures derived from squares and/or rectangles.	Topic 17: 424A-424F, 426A-429B, 430A-433B, 434A-437B, 438A, 448-451
6. describes the composition of the metric system (2.4.K1a):	
a. meter, liter, and gram (root measures);	Topic 16: 398A-398F, 404A-407B, 412A, 420-423
b. kilo, hecto, deka, deci, centi, and milli (prefixes).	Topic 16: 398A-398F, 404A-407B, 412A, 420-423
7. finds the volume of rectangular prisms using concrete objects (2.4.K1g).	Topic 18: 452B, 452D, 452F, 453, 462A-463B, 464A, 469, 470-473
8. estimates an approximate value of the irrational number pi (2.4.K1a).	Topic 17: 424B, 424D, 438A-441B, 442A-443B, 444A, 447, 448-451 Topic 18: 464A-465B, 466A, 469, 470-473

Benchmark 3: Transformational Geometry – The student recognizes and performs transformations on geometri shapes including the use of concrete objects in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>1. ▲ ■ identifies, describes, and performs one or two transformations (reflection, rotation, translation) on a two-dimensional figure (2.4.K1a).</p>	<p>Topic 11: 284A-287B, 288A, 292-295</p>
<p>2. reduces (contracts/shrinks) and enlarges (magnifies/grows) simple shapes with simple scale factors (2.4.K1a), e.g., tripling or halving.</p>	<p>Topic 13: 320B, 321, 330A-333B, 334A-337B, 338-341B</p>
<p>3. recognizes three-dimensional figures from various perspectives (top, bottom, sides, corners) (2.4.K1a).</p>	<p>Topic 18: 455-456, 457B, 458A, 458-459, 466A-468, 469A-469B, 472-473</p>
<p>4. recognizes which figures will tessellate (2.4.K1a).</p>	<p>Topic 11: 287</p>

Benchmark 4: Geometry From An Algebraic Perspective – The student relates geometric concepts to a number line and the first quadrant of a coordinate plane in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>1. uses a number line (horizontal/vertical) to order integers and positive rational numbers (in both fractional and decimal form) (2.4.K1a).</p>	<p>Topic 1: 13, 22B-23, 23B Topic 5: 128A-130, 131A-131B Topic 6: 144 Topic 10: 222-223B, 225-225B, 226B-227, 229A-229B, 230B-231, 233B, 234A-235, 237B, 238A-238B</p>
<p>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).</p>	<p>Topic 10: 246A-249B, 250A, 254 Topic 15: 380A-381B, 382A-385B, 386A-388, 389A-389B, 391-391B, 392-397B Topic 19: 478B-479B</p>
<p>3. ▲ uses all four quadrants of the coordinate plane to (2.4.K1a):</p>	
<p>a. identify the ordered pairs of integer values on a given graph;</p>	<p>Topic 10: 246A-249B, 250A, 254 Topic 15: 380A-381B, 382A-385B, 386A-388, 389A-389B, 391-391B, 392-397B Topic 19: 478B-479B</p>
<p>b. plot the ordered pairs of integer values.</p>	<p>Topic 10: 246A-249B, 250A, 254 Topic 15: 380A-381B, 382A-385B, 386A-388, 389A-389B, 391-391B, 392-397B Topic 19: 478B-479B</p>

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.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>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.</p>	<p>Topic 20: 518A-518F, 528A-529B, 530A-533B, 534A-535B, 538-541</p>
<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>Topic 20: 518A-518F, 520A-523B, 524A-527B, 536A-537B, 538-541</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>Topic 20: 518A-518F, 528A-529B, 530A-533B, 534A-535B, 538-541</p>

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<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>Topic 20: 518A-518F, 528A-529B, 530A-533B, 534A-535B, 538-541</p>

Benchmark 2: Statistics – The student collects, organizes, displays, explains, and interprets numerical (rational numbers) and non-numerical data sets in a variety of situations with a special emphasis on measures of central tendency.

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
<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>	
<p>a. graphs using concrete objects;</p>	<p>Grade 6 students read, construct, and interpret bar graphs, circle graphs, histograms, and line graphs. Topic 19: 474B, 474D, 475, 476A-479B, 480A-483B, 484A-487B, 488A-489B, 493B, 494A-497B, 498A-499B, 512-515</p>
<p>b. frequency tables and line plots;</p>	<p>Topic 19: 494A-496, 497A-497B, 498A, 514-515 Topic 20: 530B</p>

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley enVisionMATH
c. bar, line, and circle graphs;	Topic 19: 474B, 474D, 475, 476A-479B, 480A-483B, 484A-487B, 488A-489B, 512-515
d. Venn diagrams or other pictorial displays;	Topic 5: 122-123, 127 Topic 11: 260B
e. charts and tables;	Topic 19: 476-478, 479B, 483, 483B (Practice), 484-485, 487B (Reteaching), 489B, 494A-496, 497A-497B, 498A, 498-499, 499B (Practice), 500A (Problem of the Day), 514-515 Topic 20: 530B
f. single stem and leaf plots;	Topic 19: 498A-499B, 501B, 508-509, 510A, 512-517B
g. scatter plots	Topic 19: 488-489
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).	Topic 19: 502A-505B, 506A-509B, 512-517
3. uses sampling to collect data and describe the results (2.4.K1j) (\$).	Topic 19: 502A-505B, 506A-509B, 512-517
4. determines mean, median, mode, and range for (2.4.K1a,c) (\$):	
a. a whole number data set,	Topic 19: 474C, 490A-493B, 494A, 500B-501B, 510A-511B, 512-517
b. a decimal data set with decimals greater than or equal to zero.	Topic 19: 491, 493B, 501B, 510-511

**Scott Foresman – Addison Wesley enVisionMATH
to the
Kansas Curricular Standards for Mathematics**

Application Indicators

Grade Six

Standard 1: Number and Computation – The student uses numerical and computational concepts and procedures in a variety of situations.

Benchmark 1: Number Sense – The student demonstrates number sense for rational numbers and simple algebraic expressions in one variable in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>1. generates and/or solves real-world problems using equivalent representations of (2.4.A1a-c) (\$):</p>	
<p>a. integers, e.g., the basketball team made 15 out of 25 free throws this season. Express their free throw shooting as a fraction and as a decimal.</p>	<p>Topic 10: 220A-220F, 221, 222A-223B, 224A-225B, 230A-233B, 234A-237B, 238A-239B, 240A-241B, 242A-244, 245A-245B, 246A-249B, 250A-253B, 254-257</p>
<p>b. fractions greater than or equal to zero, e.g., the basketball team made 15 out of 25 free throws this season, express their free throw shooting as a fraction.</p>	<p>Topic 5: 128A-131B, 132A-133B, 134A-135B Topic 6: 142C, 144A-145B, 146A-147B, 148A-149B Topic 7: 160C-160D, 162A-163B, 166A-169B, 172A-173B, 174A-177B Topic 8: 186A-187B, 190A-191B, 192A-193B</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>c. decimals greater than or equal to zero through thousandths place (2.4.1a), e.g., the basketball team made 15 out of 25 free throws this season, express their free throw shooting as a decimal.</p>	<p>Topic 1: 14A-17B, 22A-23B Topic 3: 62A-63B, 64A-65B, 66A-69B, 70A-73B, 74A-75B, 76A-77B, 78A-79B, 82A-83B Topic 6: 146A-147B, 150A-153B Topic 14: 348A-349B, 354A-357B, 358A-361B</p>
<p>2. determines whether or not solutions to real-world problems that involve the following are reasonable (\$).</p>	
<p>a. integers (2.4.A1a), e.g., the football is placed on your own 10-yard line with 90 yards to go for a touchdown. After the first down, your team gains 7 yards. On the second down, your team loses 4 yards; and on the third down your team gains 2 yards. Is it reasonable for the football to be placed on the 5 yard line for the beginning of the fourth down? Why or why not?</p>	<p>Topic 2: 48 Topic 4: 110 Topic 10: 241 Topic 13: 324, 331, 334 Topic 16: 406</p>
<p>b. fractions greater than or equal to zero (2.4.A1c), e.g., Gary, Tom, and their parents are selling greeting cards. Gary receives $\frac{1}{3}$ of the profit and Tom receives $\frac{1}{4}$ of the profit. Is it reasonable that together they received $\frac{2}{7}$ of the profits? Why or why not?</p>	<p>Topic 7: 174 Topic 9: 204 (#9) Topic 13: 324, 331, 334</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>c. decimals greater than or equal to zero through thousandths place (2.4.A1c), e.g., the beginning bank balance is \$250.40 A deposit of \$175, a withdrawal of \$198, and a \$2 service charge are made. The checkbook balance reads \$127.40. Is this a reasonable balance? Why or why not?</p>	<p>Topic 3: 66, 79 Topic 4: 102 Topic 10: 241 Topic 14: 362A-363B</p>

Benchmark 2: Number Systems and Their Properties – The student demonstrates an understanding of the rational number system and the irrational number pi; recognizes, uses, and describes their properties; and extends these properties to algebraic expressions in one variable.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student... 1. generates and/or solves real-world problems with rational numbers using the concepts of these properties to explain reasoning (2.4.A1a-c,e) (\$):</p>	
<p>a. commutative and associative properties for addition and multiplication, e.g., at a delivery stop, Sylvia pulls out a flat of eggs. The flat has 5 columns and 6 rows of eggs. Show two ways to find the number of eggs: $5 \cdot 6 = 30$ or $6 \cdot 5 = 30$.</p>	<p>Topic 2: 30B, 34A-35B, 42-43, 45A, 56 Topic 10: 239</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>b. additive and multiplicative identities, e.g., the outside temperature was T degrees during the day. The temperature rose 5 degrees and by the next morning it had dropped 5 degrees.</p>	<p>Topic 2: 30B, 34A-35B, 56 Topic 10: 239</p>
<p>c. symmetric property of equality, e.g., Sam took a \$15 check to the bank and received a \$10 bill and a \$5 bill. Later Sam took a \$10 bill and a \$5 bill to the bank and received a check for \$15. $\\$15 = \\$10 + \\$5$ is the same as $\\$10 + \\$5 = \\$15$</p>	<p>Topic 4: 101</p>
<p>d. distributive property, e.g., trim is used around the outside edges of a bulletin board with dimensions 3 ft by 5 ft. Show two different ways to solve this problem: $2(3 + 5) = 16$ or $2 \cdot 3 + 2 \cdot 5 = 6 + 10 = 16$. Then explain why the answers are the same.</p>	<p>Topic 2: 30B, 40A-41B, 42A Topic 4: 102A (Daily Spiral Review) Topic 8: 192A-192 Topic 10: 239</p>
<p>e. substitution property, e.g., $V = IR$ [Ohm's Law: voltage (V) = current (I) x resistance (R)] If the current is 5 amps ($I = 5$) and the resistance is 4 ohms ($R = 4$), what is the voltage?</p>	<p>Topic 2: 46A-47B Topic 10: 242-243</p>
<p>f. addition property of equality, e.g., Bob and Sue each read the same number of books. During the week, they each read 5 more books. Compare the number of books each read: $b =$ number of books Bob read, $s =$ number of books Sue read, so $b + 5 = s + 5$.</p>	<p>Topic 4: 96A-97B, 98A-100, 101A-101B, 102A-105B, 113, 114-117 Topic 15: 372A-375B</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>g. multiplication property of equality, e.g., Jane watches television half as much as Tom. Jane watches T.V. for 3 hours. How long does Tom watch television? Let T= number of hours Tom watches TV. $3 = \frac{1}{2} T$, so $2 \cdot 3 = 2 \cdot \frac{1}{2} T$.</p>	<p>Topic 4: 96A-97B, 106A-108, 109A-109B, 110A-113B, 114-117 Topic 15: 372A-375B</p>
<p>h. additive inverse property, e.g., at the shopping mall, you are at ground level when you take the elevator down 5 floors. Describe how to get to ground level.</p>	<p>Topic 10: 222A-223B, 224A, 256</p>
<p>2. analyzes and evaluates the advantages and disadvantages of using integers, whole numbers, fractions (including mixed numbers), decimals, or the irrational number pi and its rational approximations in solving a given real-world problem (2.4A1a-c) (\$), e.g., in the store everything is 50% off. When calculating the discount, which representation of 50% would you use and why?</p>	<p>Topic 5: 128A-130, 131A-131B Topic 6: 142B, 150A-152, 153A-153B Topic 10: 220B, 222A-223B, 226A-228, 229A-229B</p>

Benchmark 3: Estimation – The student uses computational estimation with whole numbers, fractions, decimals, and money in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>1. adjusts original rational number estimate of a real-world problem based on additional information (a frame of reference) (2.4.A1a) (\$), e.g., given a large container of marbles, estimate the quantity of marbles. Then, using a smaller container filled with marbles, count the number of marbles in the smaller container and adjust your original estimate.</p>	<p>Topic 1: 25 Topic 3: 62A-63B, 66A-69B, 74, 77, 81 Topic 10: 244 Topic 12: 312 Topic 13: 325, 327 Topic 17: 436, 440 Topic 18: 469 Topic 19: 482 Topic 20: 523</p>
<p>2. ▲ N estimates to check whether or not the result of a real-world problem using rational numbers is reasonable and makes predictions based on the information (2.4.A1a) (\$), e.g., a class of 28 students has a goal of reading 1,000 books during the school year. If each student reads 13 books each month, will the class reach their goal?</p>	<p>Topic 1: 25 Topic 3: 62A-63B, 66A-69B, 74, 77, 81 Topic 10: 244 Topic 12: 312 Topic 13: 325, 327 Topic 17: 436, 440 Topic 18: 469 Topic 19: 482 Topic 20: 523</p>

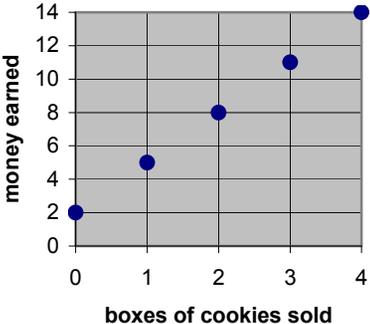
Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>3. selects a reasonable magnitude from given quantities based on a real-world problem and explains the reasonableness of the selection (2.4.A1a), e.g., length of a classroom in meters – 1-3 meters, 5-8 meters, 10-15 meters.</p>	<p>Topic 2: 48 Topic 3: 66, 79 Topic 4: 102, 110 Topic 7: 174 Topic 10: 241 Topic 13: 324, 331, 334 Topic 16: 406 Topic 13: 324, 331, 334 Topic 14: 362A-363B</p>
<p>4. determines if a real-world problem calls for an exact or approximate answer and performs the appropriate computation using various computational methods including mental math, paper and pencil, concrete objects, or appropriate technology (2.4.A1a) (\$), e.g., Kathy buys items at the grocery store priced at: \$32.56, \$12.83, \$6.99, 5 for \$12.49 each. She has \$120 with her to pay for the groceries. To decide if she can pay for her items, does she need an exact or an approximate answer?</p>	<p>Topic 1: 25 Topic 3: 62A-63B, 66A-69B, 74, 77, 81 Topic 10: 244 Topic 12: 312 Topic 13: 325, 327 Topic 17: 436, 440 Topic 18: 469 Topic 19: 482 Topic 20: 523</p>

Benchmark 4: Computation – The student models, performs, and explains computation with whole numbers, fractions including mixed numbers, and decimals including the use of concrete objects in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
The student...	
1. generates and/or solves one- and two-step real-world problems with rational numbers using these computational procedures (\$):	
a. division with whole numbers (2.4.A1b), e.g., the perimeter of a square is 128 feet. What is the length of its side?	Topic 1: 18A-20, 21A-21B, 28-29 Topic 3: 68-69, 74A-75B, 76A-77B, 79, 88-91 Topic 4: 108
b. ▲ ■ addition, subtraction, multiplication, and division of decimals through hundredths place (2.4.A1a-c), e.g., on a recent trip, Marion drove 25.8 miles from Allen to Barber, then 15.2 miles from Barber to Chase, then 14.9 miles from Chase to Douglas. When Marion had completed half of her drive from Allen to Douglas how many miles did she drive?	Topic 3: 62A-63B, 64A-65B, 66A, 70A, 76A-77B, 78A-78B, 79, 82A-83B, 88-91
c. addition, subtraction, and multiplication of fractions (including mixed numbers) (2.4.A1c), e.g., the student council is having a contest between classes. On the average, each student takes $3\frac{1}{3}$ minutes for the relay. How much time is needed for a class of 24 to run the relay?	Topic 7: 162A-163B, 164A-165B, 166A-169B, 170A-171B, 172A-173B, 174A-177B, 180-183 Topic 8: 184A-184F, 186A-187B, 188A-189B, 190A-191B, 192A-193B, 196-199 Topic 9: 204A-205B, 206A-207B

Standard 2: Algebra – The student uses algebraic concepts and procedures in a variety of situations.

Benchmark 1: Patterns – The student recognizes, describes, extends, develops, and explains relationships in patterns in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH										
<p>The student...</p> <p>1. recognizes the same general pattern presented in different representations [numeric (list or table), visual (picture, table, or graph), and written] (2.4.A1a,k), e.g., you are selling cookies by the box. Each box costs \$3. You have \$2 to begin your sales. This can be written as a pattern that begins with 2 and adds three each time, as a table or graph.</p> <p style="text-align: center;">Money earned selling cookies</p>  <table border="1" data-bbox="800 719 989 911"><thead><tr><th>X</th><th>Y</th></tr></thead><tbody><tr><td>0</td><td>2</td></tr><tr><td>2</td><td>8</td></tr><tr><td>3</td><td>11</td></tr><tr><td>4</td><td>14</td></tr></tbody></table>	X	Y	0	2	2	8	3	11	4	14	<p>Topic 1: 11, 13B (Enrichment), 48A-49B Topic 6: 153 Topic 9: 214B-215A Topic 11: 290A-291B, 292-293, 296-297 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397 Topic 18: 468 Topic 20: 527</p>
X	Y										
0	2										
2	8										
3	11										
4	14										

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>2. recognizes multiple representations of the same pattern (2.4.A1a) (\$), e.g., 1, 10; 100; 1,000; 10,000...</p> <ul style="list-style-type: none"> – represented as 1; 10; 10 x 10; 10 x 10 x 10; 10 x 10 x 10 x 10; ...; – represented as 10^0; 10^1; 10^2; 10^3; 10^4; ...; – represented as a unit; a rod; a flat; a cube; ... using base ten blocks; or – represented as a \$1 bill; a \$10 bill; a \$100 bill ; a \$1,000 bill; 	<p>Topic 1: 11, 13B (Enrichment), 48A-49B Topic 6: 153 Topic 9: 214B-215A Topic 11: 290A-291B, 292-293, 296-297 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397 Topic 18: 468 Topic 20: 527</p>

Benchmark 2: Variables, Equations, and Inequalities – The student uses variables, symbols, whole numbers, and algebraic expressions in one variable to solve linear equations in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>1. represents real-world problems using variables and symbols to (2.4.A1a,e) (\$):</p>	
<p>a. write algebraic or numerical expressions or one-step equations (addition, subtraction, multiplication, division) with whole number solutions, e.g., John has three times as much money as his sister. If M is the amount of money his sister has, what is the expression that represents the amount of money that John has? The expression would be written as 3M.</p>	<p>Topic 2: 30A-30F, 31, 32A-33B, 34A-35B, 36A-39B, 40A-41B, 42A-45B, 46A-47B, 48A-49B, 50A-53B, 54-59 Topic 6: 153 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 392-397</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>b. ▲ ■ write and/or solve one-step equations (addition, subtraction, multiplication, and division), e.g., a player scored three more points today than yesterday. Today, the player scored 17 points. How many points were scored yesterday? Write an equation to represent this problem. Let Y = number of points scored yesterday. The equation would be written as $y + 3 = 17$. The answer is $y = 14$.</p>	<p>Topic 4: 94A-94F, 95, 96A-97B, 98A-101B, 102A-105B, 106A-109B, 110A-113B, 114-117B</p>
<p>2. generates real-world problems that represent simple expressions or one-step linear equations (addition, subtraction, multiplication, division) with whole number solutions (2.2.A1a,e), (\$) e.g., write a problem situation that represents the expression $x + 10$. The problem could be: How old will a person be ten years from now if x represents the person’s current age?</p>	<p>Topic 4: 94A-94F, 95, 96A-97B, 98A-101B, 102A-105B, 106A-109B, 110A-113B, 114-117B</p>
<p>3. explains the mathematical reasoning that was used to solve a real-world problem using a one-step equation (addition, subtraction, multiplication, division) (2.2.A1a,e) (\$), e.g., use the equation form $y + 3 = 17$. Solve by subtracting 3 from both sides to get $y = 14$.</p>	<p>Topic 4: 94A-94F, 95, 96A-97B, 98A-101B, 102A-105B, 106A-109B, 110A-113B, 114-117B</p>

Benchmark 3: Functions – The student recognizes, describes, and examines whole number relationships in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH																
<p>The student...</p> <p>1. represents a variety of mathematical relationships using written and oral descriptions of the rule, tables, graphs, and when possible, symbolic notation (2.4.A1f,k) (\$), e.g., linear patterns and graphs can be used to represent time and distance situations. Pretend you are in a car traveling from home at 50 miles per hour. Then, represent the n^{th} term. $50n$ meaning 50 times the number of hours traveling equals the distance away from home.</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"><u>Time</u></th> <th style="text-align: left;"><u>Distance</u></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>50</td> </tr> <tr> <td>2</td> <td>100</td> </tr> <tr> <td>.</td> <td>.</td> </tr> <tr> <td>.</td> <td>.</td> </tr> <tr> <td>.</td> <td>.</td> </tr> <tr> <td>n</td> <td>$50n$</td> </tr> </tbody> </table>	<u>Time</u>	<u>Distance</u>	0	0	1	50	2	100	n	$50n$	<p>Topic 6: 153 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 380A, 380-381B, 382-383, 385A-385B, 386A-388, 389A-389B, 390B-391, 392-397 Topic 18: 461, 468</p>
<u>Time</u>	<u>Distance</u>																
0	0																
1	50																
2	100																
.	.																
.	.																
.	.																
n	$50n$																
<p>2. interprets and describes the mathematical relationships of numerical, tabular, and graphical representations (2.4.A1f,k).</p>	<p>Topic 6: 153 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 380A, 380-381B, 382-383, 385A-385B, 386A-388, 389A-389B, 390B-391, 392-397 Topic 18: 461, 468</p>																

Benchmark 4: Models – The student develops and uses mathematical models including the use of concrete objects to represent and explain mathematical relationships in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student... 1. recognizes that various mathematical models can be used to represent the same problem situation. Mathematical models include:</p>	
<p>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, to represent problem situations, and to solve equations (1.1.A1, 1.1.A1a, 1.2.A1-2, 1.3.A1-4, 1.4.A1a-b, 2.1.A1-2, 2.1.A1-3, 3.2.A1a, 3.2.A1c, 3.2.A2, 3.3.A1-2, 3.4.A1-2, 4.2.A1) (\$);</p>	<p>Topic 4: 102-103, 110-111 Topic 5: 130 Topic 7: 168 Topic 8: 190-191 Topic 9: 202-203, 205, 209 Topic 10: 237 Topic 11: 288, 290-291 Topic 12: 314-315 Topic 13: 336 Topic 14: 346 Topic 19: 488-491</p>
<p>b. place value models (place value mats, hundred charts, base ten blocks, or unifix cubes) to model problem situations (1.1.A1, 1.2.A1-2, 2.2.A3) (\$);</p>	<p>Topic 1: 2B, 2F, 3, 4-5, 10-11, 14-16 Topic 3: 60B, 64B, 70B-72, 74B-75, 78B-78</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>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.A1, 1.1.A2b-c, 1.2.A1-2, 1.4.A1b-c) (\$);</p>	<p>Topic 5: 128A-131B, 132A-133B, 134A-135B Topic 6: 142C, 144A-145B, 146A-147B, 148A-149B Topic 7: 160C-160D, 162A-163B, 166A-169B, 172A-173B, 174A-177B Topic 8: 186A-187B, 190A-191B, 192A-193B</p>
<p>d. factor trees to find least common multiple and greatest common factor;</p>	<p>Topic 5: 118A, 124A-125B, 126A-127B, 138-141 Topic 7: 164A-165B, 180-183</p>
<p>e. equations and inequalities to model numerical relationships (2.2.A1-3) (\$);</p>	<p>Topic 15: 370A-370F, 371, 372A-375B, 376A-377B, 378A-379B, 380A-381B, 382A-385B, 386A-389B, 390A-391B, 392-397B</p>
<p>f. function tables (input/output machines, T-tables) to model numerical and algebraic relationships (2.3.A1-2) (\$);</p>	<p>Topic 6: 153 Topic 15: 370B, 370D-370E, 376A-377B, 378A-379B, 380A, 380-381B, 382-383, 385A-385B, 386A-388, 389A-389B, 390B-391, 392-397 Topic 18: 461, 468</p>
<p>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 (3.1.A1-3. 3.2.A1b, 3.4.A2);</p>	<p>Topic 11: 274A-277B, 278A-281B, 282A-283B, 284A-287B, 288A-289B Topic 17: 426A-429B, 430A-433B, 434A-437B, 438A-441B, 442A-443B Topic 18: 454A-457B, 458A-461B, 462A-463B, 464A-465B, 466A-469B</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
h. scale drawings to model large and small real-world objects (3.4.A2);	Topic 13: 320B, 321, 330A-333B, 334A-337B, 338-341B
i. tree diagrams to organize attributes and determine the number of possible combinations;	Topic 20: 518B, 520B, 521, 522, 523A-523B, 540-541
j. two- and three- dimensional geometric models (spinners or number cubes) and process models (concrete objects, pictures, diagrams, or coins) to model probability (4.1A1-3) (\$);	Topic 20: 518A-518F, 519, 520A-523B, 524A-527B, 528A-529B, 530A-533B, 534A-535B, 536A-537B, 538-541
k. graphs using concrete objects, frequency tables, bar graphs, line graphs, circle graphs, Venn diagrams, line plots, charts, tables, and single stem-and-leaf plots to organize, display, explain, and interpret data (2.1A1, 2.3A1-2, 4.1A1-2, 4.2.A1-3) (\$)	Topic 19: 474A-474F, 475, 476A-479B, 480A-483B, 484A-487B, 488A-489B, 493B, 494A-497B, 498A-499B, 512-515 Topic 20: 530B
l. Venn diagrams to sort data and show relationships	Topic 5: 122-123, 127 Topic 11: 260B

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>2. selects a mathematical model and justifies why some mathematical models are more accurate than other mathematical models in certain situations.</p>	<p>Topic 4: 102-103, 110-111 Topic 5: 130 Topic 7: 168 Topic 8: 190-191 Topic 9: 202-203, 205, 209 Topic 10: 237 Topic 11: 288, 290-291 Topic 12: 314-315 Topic 13: 336 Topic 14: 346 Topic 19: 488-491</p>

Standard 3: Geometry – The student uses geometric concepts and procedures in a variety of situations.

Benchmark 1: Geometric Figures and Their Properties – The student recognizes geometric shapes and compares their properties in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student... 1. solves real-world problems by applying the properties of (2.4.A1g):</p>	

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>a. plane figures (regular polygons through 10 sides, circles, and semicircles) and the line(s) of symmetry, e.g., twins are having a birthday party. The rectangular birthday cake is to be cut into two equal sizes of the same shape. How would you cut the cake?</p>	<p>Topic 11: 260B-260F, 274A-277B, 278A-281B, 282A-283B, 284A-287B, 288A-289B, 290-291, 292-295 Topic 17: 424D, 426A-429B, 430A-433B, 434A-437B, 438A-441B, 442A-443B, 448-449</p>
<p>b. solids (cubes, rectangular prisms, cylinders, cones, spheres, triangular prisms) emphasizing faces, edges, vertices, and bases, e.g., lace is to be glued on all of the edges of a cube. If one edge measures 34 cm, how much lace is needed?</p>	<p>Topic 18: 452A-452F, 453, 454A-457B, 458A-461B, 462A-463B, 464A-465B, 466A-469B, 470-473</p>
<p>c. intersecting, parallel, and perpendicular lines, e.g., railroad tracks form what type of lines? Two roads are perpendicular, what is the angle between them?</p>	<p>Topic 11: 262A-265B, 268, 271, 272, 273B, 274A, 292-293</p>
<p>2. decomposes geometric figures made from (2.4.A1g):</p>	
<p>a. regular and irregular polygons through 10 sides, circles, and semicircles, e.g., draw a picture of a house (rectangular base) with a roof (triangle) and a chimney on the side of the roof (trapezoid). Identify the three geometrical figures.</p>	<p>Topic 11: 260B-260F, 274A-277B, 278A-281B, 282A, 284A-287B, 288A-289B, 290-291, 292-295 Topic 17: 424D, 426A-429B, 430A-433B, 434A-437B, 448-449</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
b. nets (two-dimensional shapes that can be folded into three-dimensional figures), e.g., the cardboard net that becomes a shoebox.	Topic 18: 455-456, 457B, 458A, 458-459, 472-473
3. composes geometric figures made from (2.4.A1g):	
a. regular and irregular polygons through 10 sides, circles, and semicircles;	Topic 11: 260B-260F, 274A-277B, 278A-281B, 282A-283B, 284A-287B, 288A-289B, 290-291, 292-295 Topic 17: 424D, 426A-429B, 430A-433B, 434A-437B, 438A-441B, 442A-443B, 448-449
b. nets (two-dimensional shapes that can be folded into three-dimensional figures).	Topic 18: 455-456, 457B, 458A, 458-459, 472-473

Benchmark 2: Measurement and Estimation – The student estimates, measures, and uses measurement formulas in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
The student...	
1. solves real-world problems by applying these measurement formulas (\$):	

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>a. ▲ perimeter of polygons using the same unit of measurement (2.4.A1a,g), e.g., measures the length of fence around a yard;</p>	<p>Topic 17: 424A, 424F, 426A-429B, 430A, 448-451</p>
<p>b. ▲ ■ area of squares, rectangles, and triangles using the same unit of measurement (2.4.A1g), e.g., finds the area of a room for carpeting;</p>	<p>Topic 17: 424A, 424C, 424E, 430A-433B, 434A-437B, 438A, 448-451</p>
<p>c. conversions within the metric system (2.4.A1a), e.g., your school is having a balloon launch. Each student needs 40 centimeters of string, and there are 42 students. How many meters of string are needed?</p>	<p>Topic 16: 398A-398F, 404A-407B, 412A, 420-423</p>
<p>2. estimates to check whether or not measurements and calculations for length, width, weight, volume, temperature, time, perimeter, and area in real-world problems are reasonable and adjusts original measurement or estimation based on additional information (a frame of reference) (2.4.A1a) (\$), e.g., students estimate, in feet, the height of a bookcase in their classroom. Then a student who is about 5 feet tall stands beside it. The students then adjust the estimate.</p>	<p>Topic 16: 411, 413 Topic 17: 436, 440 Topic 18: 469</p>

Benchmark 3: Transformational Geometry – The student recognizes and performs transformations on geometric shapes including the use of concrete objects in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>1. describes a transformation of a given two-dimensional figure that moves it from its initial placement (preimage) to its final placement (image) (2.4.A1a).</p>	<p>Topic 11: 284A-287B, 288A, 292-295</p>
<p>2. makes a scale drawing of a two-dimensional figure using a simple scale (2.4.A1a), e.g., using the scale 1 cm = 30 m, the student makes a scale drawing of the school.</p>	<p>Topic 13: 320B, 321, 330A-333B, 334A-337B, 338-341B</p>

Benchmark 4: Geometry From An Algebraic Perspective – The student relates geometric concepts to a number line and the first quadrant of a coordinate plane in a variety of situations.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
The student...	
<p>1. represents, generates, and/or solves real-world problems using a number line with integer values (2.4.A1a) (\$), e.g., the difference between -2 degrees and 10 degrees on a thermometer is 12 degrees (units); similarly, the distance between -2 to $+10$ on a number line is 12 units.</p>	<p>Topic 1: 13, 22B-23, 23B Topic 5: 128A-130, 131A-131B Topic 6: 144 Topic 10: 222-223B, 225-225B, 226B-227, 229A-229B, 230B-231, 233B, 234A-235, 237B, 238A-238B</p>
<p>2. represents and/or generates real-world problems using a coordinate plane with integer values to find (2.4.A1a,g-h):</p>	
<p>a. the perimeter of squares and rectangles, e.g., Alice made a scale drawing of her classroom and put it on a coordinate plane marked off in feet. The rectangular table in the back of the room was described by the points (8,9), (8,12), (14,12) and (14,9). Now Alice wants to put a skirting around the outer edge of the table. Using the drawing, find the amount of skirting she will need.</p>	<p>Topic 17: 426B, 444B</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>b. the area of triangles, squares, and rectangles, e.g., a scale drawing of a flower garden is found in a book with the coordinates of the four corners being (9,5), (9,13), (18,13) and (18,5). The scale is marked off in meters. How many square meters is the flower garden?</p>	<p>Topic 17: 424D, 424F, 430B, 430-431, 433B, 434B, 444B</p>

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.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>The student...</p> <p>1. conducts an experiment or simulation with a compound event composed of two independent events including the use of concrete objects; records the results in a chart, table, or graph; and uses the results to draw conclusions about the events and make predictions about future events (2.4.A1j-k).</p>	<p>Topic 20: 518D, 519, 528A-529B, 530A-533B, 534A-535B, 538-541</p>

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
<p>2. analyzes the results of a given experiment or simulation of a compound event composed of two independent events to draw conclusions and make predictions in a variety of real-world situations (2.4.A1j-k), e.g., given the equal likelihood that a customer will order a pizza with either thick or thin crust, and an equal probability that a single topping of beef, pepperoni, or sausage will be selected –</p> <ol style="list-style-type: none"> 1) What is the probability that a pizza ordered will be thin crust with beef topping? 2) Given sales of 30 pizzas on a Friday night, how many would the manager expect to be thin crust with beef topping? 	<p>Topic 20: 518D, 519, 528A-529B, 530A-533B, 534A-535B, 538-541</p>
<p>3. compares what should happen (theoretical probability/expected results) with what did happen (empirical probability/experimental results) in an experiment or simulation with a compound event composed of two independent events (2.4.A1j).</p>	<p>Topic 20: 518D, 519, 528A-529B, 530A-533B, 534A-535B, 538-541</p>

Benchmark 2: Statistics – The student collects, organizes, displays, explains, and interprets numerical (rational numbers) and non-numerical data sets in a variety of situations with a special emphasis on measures of central tendency.

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
The student...	
1. uses data analysis (mean, median, mode, range) of a whole number data set or a decimal data set with decimals greater than or equal to zero to make reasonable inferences, predictions, and decisions and to develop convincing arguments from these data displays (2.4.A1k) (\$):	
a. graphs using concrete objects;	Grade 6 students read, construct, and interpret bar graphs, circle graphs, histograms, and line graphs. Topic 19: 474B, 474D, 475, 476A-479B, 480A-483B, 484A-487B, 488A-489B, 493B, 494A-497B, 498A-499B, 512-515
b. frequency tables and line plots;	Topic 19: 494A-496, 497A-497B, 498A, 514-515 Topic 20: 530B
c. bar, line, and circle graphs;	Topic 19: 474B, 474D, 475, 476A-479B, 480A-483B, 484A-487B, 488A-489B, 512-515
d. Venn diagrams or other pictorial displays;	Topic 5: 122-123, 127 Topic 11: 260B
e. charts and tables;	Topic 19: 476-478, 479B, 483, 483B (Practice), 484-485, 487B (Reteaching), 489B, 494A-496, 497A-497B, 498A, 498-499, 499B (Practice), 500A (Problem of the Day), 514-515 Topic 20: 530B

Grade Six Application Indicators	Scott Foresman – Addison Wesley enVisionMATH
f. single stem-and-leaf plots.	Topic 19: 498A-499B, 501B, 508-509, 510A, 512-517B
2. explains advantages and disadvantages of various data displays for a given data set (2.4.A1k) (\$).	Topic 19: 474B, 474D, 475, 476A-479B, 480A-483B, 484A-487B, 488A-489B, 493B, 494A-497B, 498A-499B, 512-515
3. recognizes and explains the effects of scale and/or interval changes on graphs of whole number data sets (2.4.A1k).	Topic 19: 474B, 474D, 475, 476A-479B, 480A-483B, 484A-487B, 488A-489B, 493B, 494A-497B, 498A-499B, 512-515