A Correlation of

SCOTT FORESMAN ▪ ADDISON WESLEY

Mathematics

to the

Kansas

Curricular Standards for Mathematics

Grades K-6

PEARSON Scott Foresman

G/M-218

Introduction

This document demonstrates how ***Scott Foresman – Addison Wesley Mathematics*** meets the objectives of the Kansas Curricular Standards for Mathematics – Knowledge Base Indicators. Correlation page references are to the Teacher's Edition, which contains facsimile Student Edition pages.

Scott Foresman – Addison Wesley Mathematics was carefully developed to reflect the specific needs of students and teachers at every grade level, while maintaining an overall primary goal: to have math make sense from every perspective. This program is based on scientific research that describes how children learn mathematics well and on classroom-based evidence that validates proven reliability.

- **Reaching All Learners**

Scott Foresman – Addison Wesley Mathematics addresses the needs of every student through structured instruction that makes concepts easier for students to grasp. Lessons provide step-by-step examples that show students how to think about and solve the problem. Built-in leveled practice in every lesson allows the teacher to customize instruction to match students' abilities. Reaching All Learners, featured in the Teacher Edition, helps teachers meet the diverse needs of the classroom with fun and stimulating activities that are easy to incorporate directly into the lesson plan.

- **Test Prep**

Scott Foresman - Addison Wesley Mathematics builds understanding through connections to prior knowledge, math strands, other subjects and the real world. It provides practice for maximum results and offers assessment in a variety of ways. Besides carefully placed reviews at the end of each Section, an important Test Prep strand runs throughout the program. Writing exercises prepare students for open-ended and short-or extended-response questions on state and national tests. Spiral review in a test format help students keep their test-taking skills sharp.

- **Priority on problem solving:**

Problem-solving instruction is systematic and explicit. Reading connections help children with problem-solving skills and strategies for math. Reading for Math Success encourages students to use the reading skills and strategies they already know to solve math problems.

- **Instructional Support**

In the Teacher Edition, the Lesson Planner provides an easy, at-a-glance planning tool. It identifies objectives, math understandings, focus questions, vocabulary, and resources for each lesson in the chapter. Professional Development at the beginning of each chapter in the Teacher Edition includes a Skills Trace as well as Math Background and Teaching Tips for each section in the chapter.

Ancillaries help to reach all learners with practice, problem solving, hands-on math, language support, assessment and teacher support. Technology resources for both the student and the teacher provide a whole new dimension to math instruction by helping to create motivating and engaging lessons.

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to the
Kansas Curricular Standards for Mathematics
KINDERGARTEN

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Benchmark 1: Number Sense – The student demonstrates number sense for whole numbers, fractions, and money using concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. establishes a one-to-one correspondence with whole numbers from 0 through 20 using concrete objects and identifies, states, and writes the appropriate cardinal number (2.4.K1a) ($).	53A-53B, 53-54, 57A-57B, 57-58, 69A-69B, 69-70, 77A-77B, 77-78, 79A-79B, 79-80, 83A-83B, 83-84, 95A-95B, 95-96
2. compares and orders whole numbers from 0 through 20 using concrete objects (2.4.K1a) ($).	63A-63B, 63-64, 65A-65B, 65-66, 87A-87B, 87-88, 89A-89B, 89-90, 91A-91B, 91-92
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4. identifies positions as first and last (2.4.K1a).	69A-69B, 69-70, 95A-95B, 95-96
5. identifies pennies and dimes and states the value of the coins using money models (2.4.K1d) ($).	179A-179B, 179-180, 183A-183B, 183-184

Benchmark 2: Number Systems and Their Properties – The student demonstrates an understanding of whole numbers with a special emphasis on place value in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. reads and writes whole numbers from 0 through 20 in numerical form ($).	55A-55B, 55-56, 59A-59B, 59-60, 81A-81B, 81-82, 85A-85B, 85-86
2. represents whole numbers from 0 through 20 using place value models (2.4.K1b) ($), e.g., ten frames, unifix cubes, straws bundled in 10s, or base ten blocks.	53A-53B, 53-54, 57A-57B, 57-58, 77A-77B, 77-78, 79A-79B, 79-80, 83A-83B, 83-84
3. counts (2.4.K1a) ($): **a. whole numbers from 0 through 20,**	53A-53B, 53-54, 57A-57B, 57-58, 69A-69B, 69-70, 77A-77B, 77-78, 79A-79B, 79-80, 83A-83B, 83-84, 95A-95B, 95-96
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c. subsets of whole numbers from 0 through 20.	53A-53B, 53-54, 57A-57B, 57-58, 69A-69B, 69-70, 77A-77B, 77-78, 79A-79B, 79-80, 83A-83B, 83-84, 95A-95B, 95-96
4. groups objects by 5s and by 10s (2.4.K1a).	113A-113B, 113-114, 293A-293B, 293-294, 295A-295B, 295-296
5. uses the concept of the zero property of addition (additive identity) with whole numbers from 0 through 20 and demonstrates its meaning using concrete objects (2.4.K1a) ($), e.g., 4 apples and no (zero) other apples are 4 apples.	Preparation: 61-62

Benchmark 3: Estimation – The student uses computational estimation with whole numbers in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. determines if a group of 20 concrete objects or less has more, less, or about the same number of concrete objects as a second set of the same kind of objects (2.4.K1a).**	235A-235B, 235-236, 237A-237B, 237-238

Benchmark 4: Computation – The student models, performs, and explains computation with whole numbers using concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. adds and subtracts using whole numbers from 0 through 10 and various mathematical models (2.4.K1a) ($), e.g., concrete objects, number lines, or unifix cubes.**	251A-251B, 251-252, 253A-253B, 253-254, 255A-255B, 255-256, 257A-257B, 257-258, 271A-271B, 271-272, 273A-273B, 273-274, 275A-275B, 275-276, 277A-277B, 277-278

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. uses repeated addition (multiplication) with whole numbers to find the sum when given the number of groups (three or less) and given the same number of concrete objects in each group (five or less) (2.4.K1a), e.g., two nests with three eggs in each nest means 3 + 3 = 6 or 2 groups of 3 makes 6.	Preparation: 293-294, 295-296
3. uses repeated subtraction (division) with whole numbers when given the total number of concrete objects in each group to find the number of groups (2.4.K1a), e.g., there are 9 pencils. If each student gets 2 pencils, how many students get pencils? 9 – 2 – 2 – 2 – 2 or 9 minus 2 four times means four students get 2 pencils each and there is 1 pencil left over. *or* There are eight cookies to be shared equally among four people, how many cookies will each person receive?	Preparation: 273-274, 275-276

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 using concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. uses concrete objects, drawings, and other representations to work with types of patterns (2.4.K1a):	
a. repeating patterns, e.g., an AB pattern is like red-blue, red-blue, …; an ABC pattern is like dog-horse-pig, dog-horse-pig, …; or an AAB pattern is like Δ-Δ-O, Δ-Δ-O, …;	37A-37B, 37-38, 41A-41B, 41-42, 43A-43B, 43-44, 297A-297B, 297-298
b. growing (extending) patterns, e.g., 5, 6, 7, … is an example of a pattern that adds one to the previous number to continue the pattern.	41A-41B, 41-42, 43A-43B, 43-44, 297A-297B, 297-298
2. uses these attributes to generate patterns:	
a. whole numbers (2.4.K1a), e.g., 2, 4, 6, …;	Preparation: 297-298
b. geometric shapes with one attribute change (2.4.K1e), e.g., Δ, O, Δ, O, Δ, O, …;	39A-39B, 39-40, 45A-45B, 45-46

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
c. things related to daily life (2.4.K1a), e.g., breakfast, lunch, and dinner.	45A-45B, 45-46
3. identifies and continues a pattern presented in various formats including numeric (list or table), visual (picture, table, or graph), verbal (oral description), and kinesthetic (action) (2.4.K1a) ($).	41A-41B, 41-42, 43A-43B, 43-44, 297A-297B, 297-298
4. generates (2.4.K1a): **a. repeating patterns for the AB pattern, the ABC pattern, and the AAB pattern;**	45A-45B, 45-46
b. growing (extending) patterns that add 1, 2, or 10 to continue the pattern.	45A-45B, 45-46
5. classifies and sorts concrete objects by similar attributes (2.4.K1a) ($).	11A-11B, 11-12, 13A-13B, 13-14, 15A-15B, 15-16, 17A-17B, 17-18

Benchmark 2: Variables, Equations, and Inequalities – The student solves addition equations using concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. finds the unknown sum using the basic facts with sums through 10 using concrete objects and pictures (2.4.K1a) ($), e.g., 5 marbles + 5 marbles = ∀.	251A-251B, 251-252, 253A-253B, 253-254, 255A-255B, 255-256, 257A-257B, 257-258

Benchmark 3: Functions – The student recognizes and describes whole number relationships using concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. locates whole numbers from 0 through 20 on a number line (2.4.K1a).	Preparation: 63-64, 65-66, 87-88, 89-90, 91-92

Benchmark 4: Models – The student uses mathematical models including concrete objects to represent, show, and communicate mathematical relationships in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. knows, explains, and uses mathematical models to represent mathematical concepts, procedures, and relationships. Mathematical models include:** **a. process models (concrete objects, pictures, number lines, unifix cubes, measurement tools, or calendars) to model computational procedures and mathematical relationships, to compare and order numerical quantities, and to represent fractional parts (1.1.K1-4, 1.2.K3-5, 1.3.K1, 1.4.K1-3, 2.1.K1, 2.1.K2a, 2.1.K2c, 2.1.K3-5 2.2.K1, 2.3.K1, 3.1.K2, 3.2.K1-3, 3.3.K1-2, 3.4.K1-2) ($);**	63A-63B, 63-64, 65A-65B, 65-66, 87A-87B, 87-88, 89A-89B, 89-90, 91A-91B, 91-92, 121A-121B, 121-122, 213A-213B, 213-214, 215A-215B, 215-216, 225A-225B, 225-226, 227A-227B, 227-228, 229A-229B, 229-230, 231A-231B, 231-232, 235A-235B, 235-236, 237A-237B, 237-238, 245A-245B, 245-246, 247A-247B, 247-248, 265A-265B, 265-266, 267A-267B, 267-268
b. place value models (ten frames, unifix cubes, bundles of straws, or base ten blocks) to represent numerical quantities (1.2.K2) ($);	103A-103B, 103-104
c. fraction models (fraction strips or pattern blocks) to represent numerical quantities (1.1.K3) ($);	213A-213B, 213-214, 215A-215B, 215-216

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
d. money models (base ten blocks or coins) to represent numerical quantities (1.1.K5) ($);	179A-179B, 179-180, 181A-181B, 181-182, 183A-183B, 183-184, 187A-187B, 187-188
e. two-dimensional geometric models (geoboards, dot paper, or attribute blocks), three-dimensional geometric models (solids), and real-world objects to compare size and to model attributes of geometric shapes (2.1.K1a, 3.1.K3);	197A-197B, 197-198, 199A-199B, 199-200, 201A-201B, 201-202, 203A-203B, 203-204, 205A-205B, 205-206, 207A-207B, 207-208, 209A-209B, 209-210
f. two-dimensional geometric models (spinners), three-dimensional geometricmodels (number cubes), and concrete objects to model probability (4.1.K1-2) ($);	Preparation: 213-214, 215-216
g. graphs using concrete objects, pictographs, and frequency tables to organize and display data (4.2.K1-3) ($).	27A-27B, 27-28, 29A-29B, 29-30, 31A-31B, 31-32, 33A-33B, 33-34
2. uses concrete objects, pictures, drawings, diagrams, or dramatizations to show the relationship between two or more things ($).	11A-11B, 11-12, 13A-13B, 13-14, 15A-15B, 15-16, 17A-17B, 17-18

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 their attributes using concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes circles, squares, rectangles, triangles, and ellipses (ovals) (plane figures/ two-dimensional figures) (2.4.K1e).	203A-203B, 203-204, 205A-205B, 205-206
2. recognizes and investigates attributes of circles, squares, rectangles, triangles, and ellipses using concrete objects, drawings, and/or appropriate technology (2.4.K1a,e).	203A-203B, 203-204, 205A-205B, 205-206
3. sorts cubes, rectangular prisms, cylinders, cones, and spheres (solids/three-dimensional figures) by their attributes using concrete objects (2.4.K1e).	199A-199B, 199-200

Benchmark 2: Measurement and Estimation – The student estimates and measures using standard and nonstandard units of measure with concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. uses whole number approximations (estimations) for length using nonstandard units of measure (2.4.K1a) ($), e.g., the classroom door is about two kindergartners high or this paper is about two pencils long.	141A-141B, 141-142
2. compares two measurements using these attributes (2.4.K1a) ($): **a. longer, shorter (length);**	135A-135B, 135-136
b. taller, shorter (height);	133A-133B, 133-134
c. heavier, lighter (weight).	149A-149B, 149-150
d. hotter, colder (temperature).	153A-153B, 153-154
3. reads and tells time at the hour using analog and digital clocks (2.4.K1a).	173A-173B, 173-174, 175A-175B, 175-176

Benchmark 3: Transformational Geometry – The student develops the foundation for spatial sense using concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. describes the spatial relationship between two concrete objects using appropriate vocabulary (2.4.K1a), e.g., behind, above, below, on, or under.	3A-3B, 3-4, 5A-5B, 5-6, 7A-7B, 7-8, 9A-9B, 9-10
2. identifies two like objects or shapes from a set of four objects or shapes (2.4.K1a).	11A-11B, 11-12

Benchmark 4: Geometry From An Algebraic Perspective – The student identifies one or more points on a number line in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. locates and plots whole numbers from 0 through 20 on a horizontal number line (2.4.K1a).	Preparation: 121-122
2. counts forwards and backwards from a given whole number from 0 through 10 on a number line (2.4.K1a).	Preparation: 235-236, 237-238

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 using concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes whether an event is impossible or possible (2.4.K1f) ($), e.g., the possibility of a person having ten heads is impossible, while the possibility of a person having red hair is possible.	Preparation: 213-214, 215-216
2. recognizes and states whether a simple event in an experiment or simulation including the use of concrete objects can have more than one outcome (2.4.K1a,f).	Preparation: 213-214, 215-216

Benchmark 2: Statistics – The student collects, records, and explains numerical (whole numbers) and non-numerical data sets including the use of concrete objects in a variety of situations.

Kindergarten Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. records numerical (quantitative) and non-numerical (qualitative) data including concrete objects, graphs, and tables using these data displays (2.4.K1a,g) ($):	29A-29B, 29-30
a. graphs using concrete objects,	
b. pictographs with a whole symbol or picture representing one (no partial symbols or pictures),	31A-31B, 31-32
c. frequency tables (tally marks).	Preparation: 27A-27B, 27-28
2. collects data related to familiar everyday experiences by counting and tallying (2.4.K1a,g) ($).	27-28, 29-30, 31-32, 33-34
3. determines the mode (most) after sorting by one attribute (2.4.K1a,g) ($), e.g., color, shape, or size.	13A-13B, 13-14

Scott Foresman – Addison Wesley Mathematics
to the
Kansas Curricular Standards for Mathematics
Grade One

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 whole numbers, fractions, and money using concrete objects in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. knows, explains, and represents whole numbers from 0 through 100 using concrete objects (2.4.K1a) ($).	241A-241B, 241-242, 281A-281B, 281-282, 283A-283B, 283-284
2. compares and orders ($): **a. whole numbers from 0 through 100 using concrete objects (2.4.K1a),**	29A-29B, 29-30, 31A-31B, 31-32, 297A-297B, 297-298, 301A-301B, 301-302
b. fractions with like denominators (halves an fourths) using concrete objects, pictures, diagrams, fraction strips, or pattern blocks (2.3.K1a, c) ($)	Preparation: 183-184, 185-186
3. recognizes a whole, a half, and a fourth and represents equal parts of a whole (halves, fourths) using concrete objects, pictures, diagrams, fraction strips, or pattern blocks (2.4.K1a,c) ($).	181A-181B, 181-182, 183A-183B, 183-184, 185A-185B, 185-186

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. identifies and uses ordinal numbers first (1st) through tenth (10th) (2.4.K1a).	267A-267B, 267-268
5. Identifies coins (pennies, nickels, dimes, quarters) and currency ($1, $5, $10) and states the value of each coin and each type of currency using money models (2.4.K1d) ($)	331A-331B, 331-332, 333A-333B, 333-334, 335A-335B, 335-336, 337A-337B, 337-338, 343A-343B, 343-344, 345A-345B, 345-346, 347A-347B, 347-348
6. recognizes and counts a like group of coins (pennies, nickels, dimes) (2.4.K1d) ($).	335A-335B, 335-336, 337A-337B, 337-338

Benchmark 2: Number Systems and Their Properties – The student demonstrates an understanding of whole numbers with a special emphasis on place value and recognizes, applies, and explains the concept of properties as they relate to whole numbers in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. reads and writes whole numbers from 0 through 100 in numerical form ($).	241A-241B, 241-242, 281A-281B, 281-282, 283A-283B, 283-284
2. represents whole numbers from 0 through 100 using various groupings and place value models (place value mats, hundred charts, or base ten blocks) emphasizing ones, tens, and hundreds (2.4.K1b) ($)**, e.g., how many groups of tens are there in 32 *or* how many groups of tens and ones in 62?**	281A-281B, 281-282, 283A-283B, 283-284, 284A-284B, 284-285, 287A-287B, 287-288

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
3. counts subsets of whole numbers from 0 through 100 both forwards and backwards (2.4.K1a) ($).	255A-255B, 255-256, 257A-257B, 257-258
4. writes in words whole numbers from 0 through 10.	281A-281B, 281-282, 283A-283B, 283-284
5. identifies the place value of the digits in whole numbers from 0 through 100 (2.4.K1b) ($).	281A-281B, 281-282, 283A-283B, 283-284, 284A-284B, 284-285, 287A-287B, 287-288
6. identifies any whole number from 0 through 30 as even or odd (2.4.K1a).	265A-265B, 265-266
7. uses the concepts of these properties with whole numbers from 0 through 100 and demonstrates their meaning using concrete objects (2.4.K1a) ($): **a. commutative property of addition, e.g., 3 + 2 = 2 + 3,**	93A-93B, 93-94
b. zero property of addition (additive identity), e.g., 4 + 0 = 4. .	51A-51B, 51-52

Benchmark 3: Estimation – The student uses computational estimation with whole numbers in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. estimates whole number quantities from 0 through 100 using various computational methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.K1a) ($).	141A-141B, 141-142, 439A-439B, 439-440
2. estimates to check whether or not results of whole number quantities from 0 through 100 are reasonable (2.4.K1a) ($).	141A-141B, 141-142, 439A-439B, 439-440

Benchmark 4: Computation – The student models, performs, and explains computation with whole numbers using concrete objects in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. computes with efficiency and accuracy using various computational methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.K1a) ($).	417A-417B, 417-418, 419A-419B, 419-420, 425A-425B, 425-426, 435A-435B, 435-436, 437A-437B, 437-438, 439A-439B, 439-440; 459A-459B, 459-460, 461A-461B, 461-462, 463A-463B, 463-464, 465A-465B, 465-466, 471A-471B, 471-472, 473A-473B, 473-474, 475A-475B, 475-476, 477A-477B, 477-478

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. N states and uses with efficiency and accuracy basic addition facts with sums from 0 through 10 and corresponding subtraction facts ($).	91A-91B, 91-92, 93A-93B, 93-94, 95A-95B, 95-96, 97A-97B, 97-98, 103A-103B, 103-104, 105A-105B, 105-106, 107A-107B, 107-108, 125A-125B, 125-126, 127A-127B, 127-128, 129A-129B, 129-130, 417A-417B, 417-418, 419A-419B, 419-420, 425A-425B, 425-426, 435A-435B, 435-436, 437A-437B, 437-438, 439A-439B, 439-440
3. skip counts by 2s, 5s, and 10s through 50 (2.4.K1a).	255A-255B, 255-256, 257A-257B, 257-258
4. uses repeated addition (multiplication) with whole numbers to find the sum when given the number of groups (ten or less) and given the same number of concrete objects in each group (ten or less) (2.4.K1a), e.g., three plates of cookies with 10 cookies on each plate means 10 + 10 +10 = 30 cookies.	Preparation: 255A-255B, 255-256, 257A-257B, 257-258
5. uses repeated subtraction (division) with whole numbers when given the total number of concrete objects in each group to find the number of groups (2.4.K1a), e.g., there are 9 pencils. If each student gets 2 pencils, how many students get pencils? 9 – 2 – 2 – 2 – 2 or 9 minus 2 four times means four students get 2 pencils each and there is 1 pencil left over. *or* There are 30 pieces of candy to put equally into five bowls, how many pieces of candy will be in each bowl? 30 – 5 – 5 – 5 – 5 – 5 – 5 means there are six in each bowl.	Preparation: 443-444

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
6. performs and explains these computational procedures (2.4.K1a-b):	417A-417B, 417-418, 419A-419B, 419-420, 425A-425B, 425-426, 435A-435B, 435-436, 437A-437B, 437-438, 439A-439B, 439-440; 459A-459B, 459-460, 461A-461B, 461-462, 463A-463B, 463-464, 465A-465B, 465-466, 471A-471B, 471-472, 473A-473B, 473-474, 475A-475B, 475-476, 477A-477B, 477-478
a. adds whole numbers with sums through 99 without regrouping using concrete objects, e.g., 42 straws (bundled in 10s) + 21 straws (bundled in 10s) = 63 straws (bundled in 10s);	91A-91B, 91-92, 93A-93B, 93-94, 95A-95B, 95-96, 97A-97B, 97-98, 103A-103B, 103-104, 105A-105B, 105-106, 107A-107B, 107-108, 417A-417B, 417-418, 419A-419B, 419-420, 425A-425B, 425-426, 459A-459B, 459-460, 461A-461B, 461-462, 463A-463B, 463-464, 465A-465B
b. subtracts two-digit whole numbers without regrouping using concrete objects, e.g., 63 cubes – 21 cubes = 42 cubes.	125A-125B, 125-126, 127A-127B, 127-128, 129A-129B, 129-130, 437A-437B, 437-438, 439A-439B, 439-440, 417A-417B, 417-418, 419A-419B, 419-420, 425A-425B, 425-426, 435A-435B, 435-436, 437A-437B, 437-438, 439A-439B, 439-440; 471A-471B, 471-472, 473A-473B, 473-474, 475A-475B, 475-476, 477A-477B, 477-478
7. shows that addition and subtraction are inverse operation using concrete objects (2.4.K1a) ($).	439A-439B, 439-440
8. reads and writes horizontally and vertically the same addition expression, e.g., 5 + 4 is the same as 4 + 5	53A-53B, 53-54, 133A-133B, 133-134

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 using concrete objects in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. uses concrete objects, drawings, and other representations to work with types of patterns (2.4.K1a):	27A-27B, 27-28, 29A-29B, 29-30, 261A-261B, 261-262
a. repeating patterns, e.g., an AB pattern is like 1-2, 1-2, …; an ABC pattern is like dog-horse-pig, dog-horse-pig, …; an AAB pattern is like Δ- Δ-O, Δ-Δ-O, …;	
b. growing (extending) patterns, e.g., 1, 2, 3, …	27A-27B, 27-28, 29A-29B, 29-30, 255A-255B, 255-256, 257A-257B, 257-258, 261A-261B, 261-262
2. uses the following attributes to generate patterns:	255A-255B, 255-256, 257A-257B, 257-258, 265A-265B, 265-266
a. counting numbers related to number theory (2.4.K1.a), e.g., evens, odds, or skip counting by 2s, 5s, or 10s;	
b. whole numbers that increase (2.4.K1a) ($), e.g., 11, 21, 31, ... or like 2, 4, 6, …;	255A-255B, 255-256, 257A-257B, 257-258
c. geometric shapes (2.4.K1f), e.g., ▲, ■, ◊, ▲, ■, ◊, …;	27A-27B, 27-28, 29A-29B, 29-30
d. measurements (2.4.K1a), e.g., counting by inches or feet;	371-372, 373-374, 375-376

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
e. the calendar (2.4.K1a), e.g., January, February, March, …;	225A-225B, 225-226, 227A-227B, 227-228
f. money and time (2.4.K1d) ($), e.g., 10¢, 20¢, 30¢, … or 1:00, 1:30, 2:00, ...;	207A-207B, 207-208, 335A-335B, 335-336, 337A-337B, 337-338
g. things related to daily life (2.4.K1a), e.g., seasons, temperature, or weather;	395A-395B, 395-396
h. things related to size, shape, color, texture, or movement (2.4.K1a); e.g., tall-short, tall-short, tall-short, …; or snapping fingers, clapping hands, or stomping feet (kinesthetic patterns).	27A-27B, 27-28, 29A-29B, 29-30
3. identifies and continues a pattern presented in various formats including numeric (list or table), visual (picture, table, or graph), verbal (oral description), kinesthetic (action), and written (2.4.K1a) ($).	27A-27B, 27-28, 29A-29B, 29-30, 255A-255B, 255-256, 257A-257B, 257-258, 261A-261B, 261-262
4. generates (2.4.K1a): **a. repeating patterns for the AB pattern, the ABC pattern, and the AAB pattern;**	27A-27B, 27-28, 29A-29B, 29-30, 261A-261B, 261-262
b. growing patterns that add 1, 2, 5, or 10.	27A-27B, 27-28, 29A-29B, 29-30, 255A-255B, 255-256, 257A-257B, 257-258, 261A-261B, 261-262

Benchmark 2: Variable, Equations, and Inequalities – The student solves addition and subtraction equations using concrete objects in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. explains and uses symbols to represent unknown whole number quantities from 0 through 20 (2.4.K1a).	133A-133B, 133-134
2. finds the unknown sum or difference of the basic facts using concrete objects (2.4.K1a) ($), e.g., 12 dominoes – 5 dominoes = Δ dominoes or Δ cubes = 2 cubes + 4 cubes.	47A-47B, 47-48, 63A-63B, 63-64
3. describes and compares two whole numbers from 0 through 100 using the terms: is equal to, is less than, is greater than (2.4.K1a-b) ($).	21A-21B, 21-22, 23A-23B, 23-24

Benchmark 3: Functions – The student recognizes and describes whole number relationships using concrete objects in a variety of situations.

<table>
<tr><th>Grade One Knowledge Base Indicators</th><th>Scott Foresman – Addison Wesley Mathematics</th></tr>
<tr><td>The student...

1. plots whole numbers from 0 through 100 on segments of a number line (2.4.K1a).</td><td>97A-97B, 97-98, 263A-263B, 263-264</td></tr>
<tr><td>2. states mathematical relationships between whole numbers from 0 through 50 using various methods including mental math, paper and pencil, and concrete objects (2.4.K1a) ($), e.g., every time a hand is added to the set, five more fingers are added to the total.</td><td>255A-255B, 255-256, 257A-257B, 257-258, 261A-261B, 261-262</td></tr>
<tr><td>3. states numerical relationships for whole numbers from 0 through 50 in a horizontal or vertical function table (input/output machine, T-table) (2.4.K1e) ($), e.g.,

<table><tr><td>Number of bicycles</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>…</td></tr><tr><td>Total number of wheels</td><td>2</td><td>4</td><td>6</td><td>8</td><td>10</td><td>…</td></tr></table>The student states: For every bicycle added, you add two more wheels.</td><td>255A-255B, 255-256, 257A-257B, 257-258, 261A-261B, 261-262</td></tr>
</table>

Benchmark 4: Models – The student uses mathematical models including concrete objects to represent, show, and communicate mathematical relationships in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. knows, explains, and uses mathematical models to represent mathematical concepts, procedures, and relationships. Mathematical models include:	11A-11B, 11-12, 13A-13B, 13-14, 15A-15B, 15-16, 17A-17B, 17-18, 29A-29B, 29-30, 31A-31B, 31-32, 47A-47B, 47-48, 63A-63B, 63-64, 181A-181B, 181-182, 183A-183B, 183-184, 185A-185B, 185-186, 187A-187B, 187-188, 189A-189B, 189-190
a. process models (concrete objects, pictures, diagrams, number lines, unifix cubes, hundred charts, measurement tools, or calendars) to model computational procedures and mathematical relationships, to compare and order numerical quantities, and to represent fractional parts (1.1.K1-4, 1.2.K3, 1.2.K6-7, 1.3.K1-2, 1.4.K1, 1.4.K2-7, 2.1.K1, 2.1.K1d-h, 2.1.K2a-b, 2.2.K3-4, 2.3.K1-2, 3.2.K1-6, 3.3.K1-3, 3.4.K1-3 4.2.K3-4) ($);	
b. place value models (place value mats, hundred charts, or base ten blocks) to compare, order, and represent numerical quantities and to model computational procedures (1.2.K2, 1.2.K5, 1.4.K6, 2.2.K3) ($);	281A-281B, 281-282, 283A-283B, 283-284, 287A-287B, 287-288
c. fraction models (fraction strips or pattern blocks) to compare, order, and represent numerical quantities (1.1.K2-3) ($);	181A-181B, 181-182, 183A-183B, 183-184, 185A-185B, 185-186, 187A-187B, 187-188, 189A-189B, 189-190

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
d. money models (base ten blocks or coins) to compare, order, and represent numerical quantities (1.1.K5-6, 2.1.K2f) ($);	331A-331B, 331-332, 333A-333B, 333-334, 335A-335B, 335-336, 337A-337B, 337-338, 343A-343B, 343-344, 345A-345B, 345-346, 347A-347B, 347-348
e. function tables (input/output machines, T-tables) to model numerical relationships (2.3.K3) ($);	Preparation: 255A-255B, 255-256, 257A-257B, 257-258, 261A-261B, 261-262
f. two-dimensional geometric models (geoboards, dot paper, pattern blocks, tangrams, or attribute blocks), three-dimensional geometric models (solids), and real-world objects to compare size and to model attributes of geometric shapes (2.1.K1c, 3.1.K1-3);	157A-157B, 157-158, 159A-159B, 159-160, 161A-161B, 161-162, 165A-165B, 165-166, 167A-167B, 167-168
g. two-dimensional geometric models (spinners), three-dimensional geometric models (number cubes), and concrete objects to model probability (4.1.K1-2) ($);	401A-401B, 401-402, 403A-403B, 403-404
h. graphs using concrete objects, pictographs, frequency tables, horizontal and vertical bar graphs, and Venn diagrams or other pictorial displays to organize, display, and explain data (4.1.A1, 4.2.A1-2) ($);	309A-309B, 309-310, 311A-311B, 311-312, 313A-313B, 313-314
i. Venn diagrams to sort data (4.2.K4).	307A-307B, 307-308

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. uses concrete objects, pictures, diagrams, drawings, or dramatizations to show the relationship between two or more things ($).	307A-307B, 307-308, 309A-309B, 309-310, 311A-311B, 311-312, 313A-313B, 313-314

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 describes their attributes using concrete objects in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes and draws circles, squares, rectangles, triangles, and ellipses (ovals) (plane figures/two-dimensional figures) (2.4.K1f).	165A-165B, 165-166, 167A-167B, 167-168
2. recognizes and investigates attributes of circles, squares, rectangles, triangles, and ellipses (plane figures) using concrete objects, drawings, and appropriate technology (2.4.K1f).	165A-165B, 165-166, 167A-167B, 167-168
3. recognizes cubes, rectangular prisms, cylinders, cones, and spheres (solids/three-dimensional figures) (2.4.K1f).	157A-157B, 157-158, 159A-159B, 159-160, 161A-161B, 161-162

Benchmark 2: Measurement and Estimation – The student estimates and measures using standard and nonstandard units of measure with concrete objects in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. uses whole number approximations (estimations) for length and weight using nonstandard units of measure (2.4.K1a) ($), e.g., the width of the chalkboard is about 10 erasers long or the weight of one encyclopedia is about five picture books.	365-366, 371-372, 373-374, 375-376, 389-390
2. compares two measurements using these attributes (2.4.K1a) ($): **a. longer, shorter (length);**	365A-365B, 365-366
b. taller, shorter (height);	365A-365B, 365-366
c. heavier, lighter (weight);	389A-389B, 389-390
d. hotter, colder (temperature).	395-396
3. reads and tells time at the hour and half-hour using analog and digital clocks (2.4.K1a).	209A-209B, 209-210, 211A-211B, 211-212
4. selects appropriate measuring tools for length, weight, volume, and temperature for a given situation (2.4.K1a) ($).	365A-365B, 365-366, 371A-371B, 371-372, 373A-373B, 373-374, 375A-375B, 375-376, 383A-383B, 383-384, 385A-385B, 385-386, 387A-387B, 387-388, 389A-389B, 389-390, 391A-391B, 391-392, 393A-393B, 393-394, 397A-397B, 397-398
5. measures length and weight to the nearest whole unit using nonstandard units (2.4.K1a) ($).	365A-365B, 365-366, 371A-371B, 371-372, 373A-373B, 373-374, 375A-375B, 375-376, 389A-389B, 389-390, 391A-391B, 391-392, 393A-393B, 393-394, 397A-397B, 397-398

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
6. states the number of days in a week and months in a year (2.4.K1a).	225A-225B, 225-226, 227A-227B, 227-228

Benchmark 3: Transformational Geometry – The student develops the foundation for spatial sense using concrete objects in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. describes the spatial relationship between two concrete objects using appropriate vocabulary (2.4.K1a), e.g., behind, above, below, on, under, beside, or in front of.	Related material: 173-174
2. recognizes that changing an object's position or orientation does not change the name, size, or shape of the object (2.4.K1a).	Related material: 173-174
3. describes movement of concrete objects using appropriate vocabulary (2.4.K1a), e.g., right, left, up, or down.	Related material: 173-174

Benchmark 4: Geometry From An Algebraic Perspective – The student identifies one or more points on a number line in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. locates and plots whole numbers from 0 through 100 on a segment of a number line (horizontal/vertical) (2.4.K1a), e.g., using a segment of a number line from 45 to 60 to locate the whole number 50.**	Related material: 263-264
2. describes a given whole number from 0 to 100 as coming before or after another number on a number line (2.4.K1a).	263A-263B, 263-264
3. uses a number line to model addition and counting using whole numbers from 0 to 100 (2.4.K1a).	97A-97B, 97-98, 263A-263B, 263-264

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 using concrete objects in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes whether an outcome of a simple event in an experiment or simulation is impossible, possible, or certain (2.4.K1g) ($).	401A-401B, 401-402, 403A-403B, 403-404
2. recognizes and states whether a simple event in an experiment or simulation including the use of concrete objects can have more than one outcome (2.4.K1g).	401A-401B, 401-402, 403A-403B, 403-404

Benchmark 2: Statistics – The student collects, displays, and explains numerical (whole numbers) and non-numerical data sets including the use of concrete objects in a variety of situations.

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. displays and reads numerical (quantitative) and non-numerical (qualitative) data in a clear, organized, and accurate manner including a title, labels, and whole number intervals using these data displays (2.4.K1h) ($): **a. graphs using concrete objects,**	309A-309B, 309-310, 311A-411B, 311-312

Grade One Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. pictographs with a whole symbol or picture representing one (no partial symbols or pictures),	Related material: 307-308
c. frequency tables (tally marks),	313A-313B, 313-314
d. horizontal and vertical bar graphs,	309A-309B, 309-310, 311A-411B, 311-312
e. Venn diagrams or other pictorial displays, e.g., glyphs.	307A-307B, 307-308
2. collects data using different techniques (observations or interviews) and explains the results (2.4.K1h) ($).	309A-309B, 309-310, 311A-411B, 311-312, 313A-313B, 313-314
3. identifies the minimum (lowest) and maximum (highest) values in a data set (2.4.K1a) ($).	311-312
4. determines the mode (most) after sorting by one attribute (2.4.K1a,i) ($).	307A-307B, 307-308
5. sorts and records qualitative (non-numerical, categorical) data sets using one attribute (2.4.K1a) ($), e.g., color, shape, or size.	307A-307B, 307-308

Scott Foresman – Addison Wesley Mathematics
to the
Kansas Curricular Standards for Mathematics
Grade Two

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 whole numbers, fractions, and money using concrete objects in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. ▲knows, explains, and represents whole numbers from 0 through 1,000 using concrete objects (2.4.K1a) ($)	81A-81B, 81-82, 83A-83B, 83-84, 391A-391B, 391-392, 393A-393B, 393-394
2. compares and orders: **a. whole numbers from 0 through 1,000 using concrete objects (2.4.K1a) ($);**	15A-15B, 15-16, 91A-91B, 91-92, 399A-399B, 399-400, 409A-409B, 409-410
b. fractions greater than or equal to zero with like denominators (halves, fourths, thirds, eighths) using concrete objects (2.4.K1a,c).	Preparation: 271-272
3. uses addition and subtraction to show equivalent representations for whole numbers from 0 through 100 (2.4.K1a-b), e.g., 8 – 5 = 2 + 1 or 20 + 40 = 70 – 10.	27A-27B, 27-28

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. identifies and uses ordinal positions from first (1st) through twentieth (20th) (2.4.K1a).	103A-103B, 103-104
5. ▲identifies coins, states their values, and determines the total value to $1.00 of a mixed group of coins using pennies, nickels, dimes, quarters, and half-dollars (2.4.K1d) ($).	109A-109B, 109-110, 111A-111B, 111-112
6. counts a like combination of currency ($1, $5, $10, $20) to $100 (2.4.K1d) ($).	113A-113B, 113-114, 115A-115B, 115-116, 117A-117B, 117-118, 119A-119B, 119-120, 121A-121B, 121-122

Benchmark 2: Number Systems and Their Properties – The student demonstrates an understanding of whole numbers with a special emphasis on place value and recognizes, uses, and explains the concepts of properties as they relate to whole numbers in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. reads and writes ($)**:**	81A-81B, 81-82, 83A-83B, 83-84, 391A-391B, 391-392, 393A-393B, 393-394, 395A-395B, 395-396
a. whole numbers from 0 through 1,000 in numerical form, e.g., 942 is read as nine hundred forty-two and is written in numerical form as 942;	
b. whole numbers from 0 through 100 in words, e.g., 76 is read as seventy-six and is written in words as seventy-six.	85A-85B, 85-86

Grade Two Knowledge Base Indicators		Scott Foresman – Addison Wesley Mathematics
	c. whole numbers from 0 through 1,000 in numerical form when presented in word form, e.g., nine hundred forty-six is read as nine hundred forty-six and is written as 946.	81A-81B, 81-82, 83A-83B, 83-84, 391A-391B, 391-392, 393A-393B, 393-394, 395A-395B, 395-396
2.	**▲ represents whole numbers from 0 through 1,000 using various groupings and place value models emphasizing 1s, 10s, and 100s; explains the groups; and states the value of the digit in ones place, tens place, and hundreds place (2.4.K1b) ($), e.g., in 385, the 3 represents 3 hundreds, 30 tens, or 300 ones; the 8 represents 8 tens or 80 ones; and the 5 represents 5 ones.**	81A-81B, 81-82, 83A-83B, 83-84, 393A-393B, 393-394
3.	**counts subsets of whole numbers from 0 through 1,000 forwards and backwards (2.4.K1a) ($), e.g., 311, 312, …, 320; or 210, 209, …, 204.**	61A-61B, 51-52
4.	**▲ identifies the place value of the digits in whole numbers from 0 through 1,000 (2.4.K1b) ($).**	81A-81B, 81-82, 83A-83B, 83-84, 393A-393B, 393-394
5.	**identifies any whole number from 0 through 100 as even or odd (2.4.K1a).**	101A-101B, 101-102
6.	**uses the concepts of these properties with whole numbers from 0 through 100 and demonstrates their meaning including the use of concrete objects (2.4.K1a) ($):** **a. commutative property of addition, e.g., 5 + 6 = 6 + 5;**	23A-23B, 23-24

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. zero property of addition (additive identity), e.g., 4 + 0 = 4;	Related material: 5-6, 23-24
c. associative property of addition, e.g., (3 + 2) + 4 = 3 + (2 + 4);	49A-49B, 49-50
2 + d. symmetric property of equality applied to basic addition and subtraction facts, e.g., 10 = 8 is the same as 2 + 8 = 10 or 7 = 10 – 3 is the same as 10 – 3 = 7.	27A-27B, 27-28

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

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. estimates whole number quantities from 0 through 1,000 and monetary amounts through $50 using various computational methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.Ka-b,d) ($).	141A-141B, 141-142, 149A-149B, 149-150, 191A-191B, 191-192, 229A-229B, 229-230, 429A-429B, 429-430, 445A-445B, 445-446
2. uses various estimation strategies to estimate whole number quantities from 0 through 1,000 (2.4.K1a) ($).	175A-175B, 175-176, 177A-177B, 177-178, 179A-179B, 179-180, 181A-181B, 181-182, 185A-185B, 185-186, 187A-187B, 187-188, 189A-189B, 189-190, 191A-191B, 191-192, 193A-193B, 193-194, 227A-227B, 227-228

Benchmark 4: Computation – The student models, performs, and explains computation with whole numbers and money using concrete objects in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. computes with efficiency and accuracy using various computational methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.K1a) ($).	135A-135B. 135-136, 137A-137B, 137-138, 139A-139B, 139-140, 141A-141B, 141-142, 145A-145B, 145-146, 147A-147B, 147-148, 149A-149B, 149-150, 175A-175B, 175-176, 177A-177B, 177-178, 179A-179B, 179-180, 181A-181B, 181-182, 185A-185B, 185-186, 187A-187B, 187-188, 189A-189B, 189-190, 191A-191B, 191-192, 193A-193B, 193-194, 467A-467B, 467-478, 469A-469B, 469-470, 471A-471B, 471-472, 473A-473B, 473-474, 475A-475B, 475-476, 483A-483B, 483-484, 485A-485B, 485-486
2. N states and uses with efficiency and accuracy basic addition facts with sums from 0 through 20 and corresponding subtraction facts (2.4.K1a) ($).	43A-43B, 43-44, 45A-45B, 45-46, 47A-47B, 47-48, 49A-49B, 49-50, 51A-51B, 51-52, 53A-53B, 53-54, 57A-57B, 57-58, 61A-61B, 61-62, 63A-63B, 63-64, 65A-65B, 65-66
3. skip counts by 2s, 5s, and 10s through 100 and skip counts by 3s through 36 (2.4.K1a).	99A-99B, 99-100, 467A-467B, 467-468
4. uses repeated addition (multiplication) with whole numbers to find the sum when given the number of groups (ten or less) and given the same number of concrete objects in each group (twenty or less) (2.4.K1a) ($), e.g., five classes of 15 students visit the zoo; 15 + 15 + 15 + 15 + 15 = 75.	469A-469B, 469-470

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
5. uses repeated subtraction (division) with whole numbers when given the total number of concrete objects in each group to find the number of groups (2.4.K1a) ($), e.g., there are 25 cookies. If each student gets 3 cookies, how many students get cookies? 25 – 3 – 3 – 3 – 3 – 3 – 3 – 3 – 3 or 25 minus 3 eight times means eight students get 3 cookies each and there is 1 cookie left over.	Related material: 483A-483B, 483-484
6. fair shares/measures out (divides) a total amount through 100 concrete objects into equal groups (2.4.K1a-b), e.g., fair sharing 48 eggs into four groups resulting in four groups of 12 eggs or measuring out 48 eggs with 12 eggs in each group resulting in four groups of 12 eggs.	483A-483B, 483-484
7. ▲N performs and explains these computational procedures: **a. adds and subtracts three-digit whole numbers with and without regrouping including the use of concrete objects (2.4.K1a-b),**	431A-431B, 431-432, 433A-433B, 433-434, 435A-435B, 435-436, 447A-447B, 447-448, 449A-449B, 449-450, 451A-451B, 451-452
b. adds and subtracts monetary amounts through 99¢ using cent notation (25¢ + 52¢) and money models (2.4.K1a-b,d) ($).	119A-119B, 119-120

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
8. ▲N identifies basic addition and subtraction fact families (facts with sums from 0 through 20 and corresponding subtraction facts) (2.4.K1a).	27A-27B, 27-28
9. reads and writes horizontally and vertically the same addition or subtraction expression e.g., 6 – 3 is the same as 6. **-3**	9A-9B, 9-10, 57A-57B, 57-58

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 using concrete objects in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. uses concrete objects, drawings, and other representations to work with types of patterns (2.4.K1a):	413A-413B, 413-414
a. repeating patterns, e.g., an AB pattern is like left-right, left-right, …; an ABC pattern is like dog-horse-pig, dog-horse-pig, …; an AAB pattern is like ↑↑→, ↑↑→, …;	

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. growing (extending) patterns, e.g., 7, 9, 11, … where the rule could be add 2 or the odd numbers beginning with 7.	99A-99B, 99-100, 413A-413B, 413-414, 467A-467B, 467-468
2. uses the following attributes to generate patterns: **a. counting numbers related to number theory (2.4.K1a), e.g., evens, odds, or skip counting by 3s, or 4s;**	99A-99B, 99-100, 101A-101B, 101-102, 467A-467B, 467-468
b. whole numbers that increase or decrease (2.4.K1a) ($), e.g.,11, 22, 33, ... or 98, 88, 78, …;	99A-99B, 99-100, 413A-413B, 413-414, 467A-467B, 467-468
c. geometric shapes (2.4.K1f), e.g., Δ-O-O, Δ-O-O, …;	413A-413B, 413-414
d. measurements (2.4.K1a), e.g., 1”, 3”, 5”, … or 5 lbs, 10 lbs, 15 lbs, …;	343-344, 345-346, 347-348, 365-366, 367-368
e. the calendar (2.4.K1a), e.g., Sunday, Monday, Tuesday, …;	303A-303B, 303-304
f. money and time (2.4.K1a,d) ($), e.g., $5, $10, $15, ... or 1:15, 1:30, 1:45, …;	109A-109B, 109-110, 111A-111B, 111-112, 291A-291B, 291-292
g. things related to daily life (2.4.K1a), e.g., seasons, temperature, or weather;	369A-369B, 369-370

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
h. things related to size, shape, color, texture, or movement (2.4.K1a), e.g., ◈◈,◈◈, ◈◈, … ; or snapping fingers, clapping hands, or stomping feet or over, under, or behind using a bean bag toss (kinesthetic patterns).	413A-413B, 413-414
3. ▲ identifies 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 (2.4.K1a) ($).	99A-99B, 99-100, 413A-413B, 413-414, 467A-467B, 467-468
4. generates (2.4.K1a): repeating patterns, e.g., 1-2, 1-2, 1-2, … where the elements repeat; growing (extending) patterns, e.g., 1, 4, 7, ….where the rule is add 3.	99A-99B, 99-100, 413A-413B, 413-414, 467A-467B, 467-468

Benchmark 2: Variables, Equations, and Inequalities – The student uses symbols and whole numbers to solve addition and subtraction equations using concrete objects in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. explains and uses symbols to represent unknown whole number quantities from 0 through 100 (2.4.K1a).	99A-99B, 99-100, 413A-413B, 413-414, 467A-467B, 467-468

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. finds the sum or difference in one-step equations with : ($) **a. whole numbers from 0 through 99 (2.4.K1a-b), e.g., 32 + 19 = Δ or Δ = 79 – 46;**	Preparation: 99A-99B, 99-100, 413A-413B, 413-414, 467A-467B, 467-468
b. up to two different coins (2.4.K1d), e.g., nickel + penny = Δ¢.	Preparation: 99A-99B, 99-100, 413A-413B, 413-414, 467A-467B, 467-468
3. finds unknown addend or subtrahend using basic addition and subtraction facts (fact family) (2.4.K1a) ($), e.g., 12 = Δ + 7 or 12 – Δ = 7.	27A-27B, 27-28
4. describes and compares two whole numbers from 0 through 1,000 using the terms: is equal to, is less than, is greater than (2.4.K1a-b) ($).	97A-97B, 97-98, 399A-399B, 399-400

Benchmark 3: Functions – The student recognizes and describes whole number relationships using concrete objects in a variety of situations.

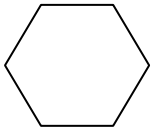
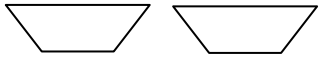
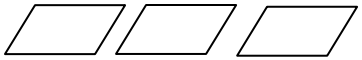
Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. states mathematical relationships between whole numbers from 0 through 100 using various methods including mental math, paper and pencil, and concrete objects (2.4.K1a) ($), e.g., every time a dog is added to the pack, 2 more ears are added to the total.**	157A-157B, 157-158, 413A-413B, 413-414

<table>
<tr><th>Grade Two Knowledge Base Indicators</th><th>Scott Foresman – Addison Wesley Mathematics</th></tr>
<tr><td>2. finds the values and determines the rule that involve addition or subtraction of whole numbers from 0 through 100 using a horizontal or vertical function table (input/output machine, T-table) (2.4.K1e), e.g.,
after looking at the function table, different students might respond that the rule is In + 2 equals Out, the rule is N + 2, or the rule is plus 2.
<table><tr><th>In</th><th>Out</th></tr><tr><td>9</td><td>11</td></tr><tr><td>2</td><td>4</td></tr><tr><td>13</td><td>15</td></tr><tr><td>42</td><td>44</td></tr><tr><td>57</td><td>59</td></tr><tr><td>6</td><td>?</td></tr><tr><td>72</td><td>?</td></tr><tr><td>N</td><td>?</td></tr></table></td><td>157A-157B, 157-158, 413A-413B, 413-414</td></tr>
<tr><td>3. generalizes numerical patterns using whole numbers from 0 through 100 with one operation (addition, subtraction) by stating the rule using words, e.g., if a set of numbers is 2, 4, 6, 8,10, …; the rule is add two.</td><td>99A-99B, 99-100, 413A-413B, 413-414, 467A-467B, 467-468</td></tr>
</table>

Benchmark 4: Models – The student uses mathematical models including concrete objects to represent, show, and communicate mathematical relationships in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. knows, explains, and uses mathematical models to represent mathematical concepts, procedures, and relationships. Mathematical models include: **a. process models (concrete objects, pictures, diagrams, number lines, unifix cubes, hundred charts, or measurement tools) to model computational procedures and mathematical relationships, to compare and order numerical quantities, and to represent fractional parts (1.1.K1-4, 1.2.K3, 1.2.K5-6, 1.3.K1-2, 1.4.K1-8, 2.1.K1, 2.2K1, 2.1K1a-b, 2.1K1d-h, 2.1.K3-4, 2.2.K2a, 2.2.K3-4, 2.3.K1, 3.2.K1-5, 3.3.K1, 3.4.K1-3, 4.2.K3-5) ($);**	3A-3B, 3-4, 13A-13B, 13-14, 97A-97B, 97-98, 269A-269B, 269-270, 271A-271B, 271-272, 273A-273B, 273-274, 275A-275B, 275-276, 277A-277B, 277-278, 399A-399B, 399-400, 409A-409B, 409-410
b. place value models (place value mats, hundred charts, or base ten blocks) to compare, order, and represent numerical quantities and to model computational procedures (1.1.K3, 1.2.K2, 1.2.K4, 1.3.K1, 1.4.K6-7, 1.4.K7a, 2.2.K2a, 2.2.K4) ($);	81A-81B, 81-82, 83A-83B, 83-84, 391A-391B, 391-392, 393A-393B, 393-394
c. fraction models (fraction strips or pattern blocks) to compare, order, and represent numerical quantities (1.1.K2b) ($);	269A-269B, 269-270, 271A-271B, 271-272, 273A-273B, 273-274, 275A-275B, 275-276, 277A-277B, 277-278, 399A-399B, 399-400, 409A-409B, 409-410

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
d. money models (base ten blocks or coins) to compare, order, and represent numerical quantities (1.1.K5-6, 1.3.K1, 1.4.K7b, 2.1.K1f, 2.2.K2b) ($);	109A-109B, 109-110, 111A-111B, 111-112, 113A-113B, 113-114
e. function tables (input/output machines, T-tables) to model numerical relationships (2.3.K2) ($);	157A-157B, 157-158, 413A-413B, 413-414
f. two-dimensional geometric models (geoboards, dot paper, pattern blocks, tangrams, or attribute blocks) to model perimeter and properties of geometric shapes and three-dimensional geometric models (solids) and real-world objects to compare size and to model attributes of geometric shapes (2.1.K2c, 3.1.K1-6, 3.3.K2-3);	247A-247B, 247-248, 249A-249B, 249-250
g. two-dimensional geometric models (spinners), three-dimensional geometric models (number cubes), and process models (concrete objects) to model probability (4.1.K1-2) ($);	373A-373B, 373-374, 375A-375B, 375-376
h. graphs using concrete objects, representational objects, or abstract representations, pictographs, frequency tables, horizontal and vertical bar graphs, Venn diagrams or other pictorial displays, and line plots to organize and display data (4.1.K2, 4.2.K1, 4.2.K2) ($);	315A-315B, 315-316, 319A-319B, 319-320, 321A-321B, 321-322, 323A-323B, 323-324

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
i. Venn diagrams to sort data.	315A-315B, 315-316
2. creates a mathematical model to show the relationship between two or more things, e.g., using pattern blocks, a whole (1) can be represented using **a**  **(1/1) or** **two**  **(2/2) or** **three**  **(3/3) or** **six**  **(6/6).**	257A-257B, 257-258, 259A-259B, 259-260

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 describes their properties using concrete objects in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. recognizes and investigates properties of circles, squares, rectangles, triangles, and ellipses (ovals) (plane figures/two-dimensional shapes) using concrete objects, drawings, and appropriate technology (2.4.K1f).**	249A-249B, 249-250
2. ■ recognizes, draws, and describes circles, squares, rectangles, triangles, ellipses (ovals) (plane figures) (2.4.K1f).	249A-249B, 249-250
3. recognizes cubes, rectangular prisms, cylinders, cones, and spheres (solids/three-dimensional figures) (2.4.K1f).	247A-247B, 247-248, 249A-249B, 249-250
4. recognizes the square, triangle, rhombus, hexagon, parallelogram, and trapezoid from a pattern block set (2.4.K1f).	249A-249B, 249-250
5. compares geometric shapes (circles, squares, rectangles, triangles, ellipses) to one another (2.4.K1f).	249A-249B, 249-250
6. recognizes whether a shape has a line of symmetry (2.4.K1f).	261A-261B, 261-262

Benchmark 2: Measurement and Estimation – The student estimates and measures using standard and nonstandard units of measure with concrete objects in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. uses whole number approximations (estimations) for length, weight, and volume using standard and nonstandard units of measure (2.4.K1a) ($), e.g., the height of the classroom door is 14 chalkboard erasers laid end to end or 7 feet high or an apple weighs about 42 unifix cubes.**	341-342, 353-354, 363-367
2. ▲ reads and tells time by five-minute intervals using analog and digital clocks (2.4.K1a).	291A-291B, 291-292
3. selects and uses appropriate measurement tools and units of measure for length, weight, volume, and temperature for a given situation (2.4.K1a) ($).	343A-343B, 343-344, 345A-345B, 345-346, 347A-347B, 347-348, 355A-355B, 355-356, 357A-357B-357-358, 365A-365B, 365-366, 367A-367B, 367-368, 369A-369B, 369-370
4. measures (2.4.K1a) ($): **a. ▲ length to the nearest inch or foot and to the nearest whole unit of a nonstandard unit;**	343A-343B, 343-344, 345A-345B, 345-346, 347A-347B, 347-348

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. weight to the nearest nonstandard unit;	365A-365B, 365-366, 367A-367B, 367-368
c. volume to the nearest cup, pint, quart, or gallon;	355A-355B, 355-356, 357A-357B, 357-358
d. temperature to the nearest degree.	369A-369B, 369-370
5. states (2.4.K1a): **a. the number of minutes in an hour,**	291A-291B, 291-292
b. the number of days in each month.	303A-303B, 303-304

Benchmark 3: Transformational Geometry – The student recognizes and shows one transformation on simple shapes and concrete objects in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. knows and uses the cardinal points (north, south, east, west) (2.4.K1a).**	Preparation: 325-326

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. recognizes that changing an object's position or orientation including whether the object is nearer or farther away does not change the name, size, or shape of the object (2.4.K1f).	259A-259B, 259-260
3. recognizes when a shape has undergone one transformation (flip/reflection, turn/rotation, slide/translation) (2.4.K1f).	259A-259B, 259-260

Benchmark 4: Geometry From An Algebraic Perspective – The student identifies one or more points on a number line in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. locates and plots whole numbers from 0 through 1,000 on a segment of a number line (horizontal/vertical) (2.4.K1a), e.g., using a segment of a number line from 800 to 820 to locate the whole number 805.	95A-95B, 95-96, 97A-97B, 97-98
2. represents the distance between two whole numbers from 0 through 1,000 on a segment of a number line (2.4.K1a).	97A-97B, 97-98, 191A-191B, 191-192
3. uses a segment of number line to model addition and subtraction using whole numbers from 0 through 1,000 (2.4.K1a), e.g., 333 + n = 349 or 333 + 16= n or 400-n=352 or 400 – 48 = n.	41, 43-44. 61A-61B, 61-62, 229

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 using concrete objects in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes any outcome of a simple event in an experiment or simulation as impossible, possible, certain, likely, or unlikely (2.4.K1g) ($).	373A-373B, 373-374
2. lists some of the possible outcomes of a simple event in an experiment or simulation including the use of concrete objects (2.4.K1g-h).	375A-375B, 375-378

Benchmark 2: Statistics – The student collects, organizes, displays, and explains numerical (whole numbers) and non-numerical data sets including the use of concrete objects in a variety of situations.

Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. organizes, displays, and reads numerical (quantitative) and non-numerical (qualitative) data in a clear, organized, and accurate manner including a title, labels, categories, and whole number intervals using these data displays (2.4.K1h) ($): **a. ▲ graphs using concrete objects;**	319A-319B, 319-320

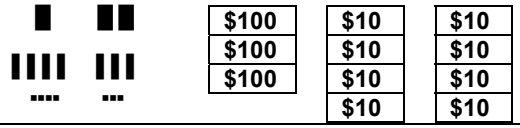
Grade Two Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. ▲ pictographs with a whole symbol or picture representing one, two, or ten (no partial symbols or pictures);	319A-319B, 319-320
c. ▲ frequency tables (tally marks);	313A-313B, 313-314
d. ▲ horizontal and vertical bar graphs;	321A-321B, 321-322
e. Venn diagrams or other pictorial displays, e.g., glyphs;	315A-315B, 315-316
f. line plots.	323A-323B, 323-324
2. collects data using different techniques (observations, interviews, or surveys) and explains the results (2.4.K1h) ($).	313A-313B, 313-314
3. identifies the minimum (lowest) and maximum (highest) values in a whole number data set (2.4.K1a) ($).	Related material: 321-322, 323-324
4. finds the range for a data set using two-digit whole numbers (2.4.K1a) ($).	Preparation: 313-314
5. finds the mode (most) for a data set using concrete objects that include (2.4.K1a) ($): **a. quantitative/numerical data (whole numbers through 100);**	Preparation: 313-314
b. qualitative/non-numerical data (category that occurs most often).	Preparation: 313-314

Scott Foresman – Addison Wesley Mathematics
to the
Kansas Curricular Standards for Mathematics
Grade Three

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 whole numbers, fractions, decimals, and money using concrete objects in a variety of situations.

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. knows, explains, and represents ($):** **a. whole numbers from 0 through 10,000 (2.4.K1a-b)**	4A-4B, 4-5, 6A-6B, 6-7, 10A-10B, 10-11, 12A-12B, 12-13
b. fractions greater than or equal to zero (halves, fourths, thirds, eighths, tenths, sixteenths) (2.4.K1c) ($);	498A-498B, 489-501, 502A-502B, 502-503, 504A-504B, 504-505
c. decimals greater than or equal to zero through tenths place (2.4.K1c).	564A-564B, 564-565, 566A-566B, 566-567
2. compares and orders: **a. ▲ ■ whole numbers from 0 through 10,000 with and without the use of concrete objects (2.4.K1a-b) ($);**	18A-18B, 18-21, 22A-22B, 22-23

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. fractions greater than or equal to zero with like denominators (halves, fourths, thirds, eighths, tenths, sixteenths) using concrete objects (2.4.K1a,c);	506A-560B, 560-509
c. decimals greater than or equal to zero through tenths place using concrete objects (2.4.K1a-c).	568A-568B, 568-571
3. ▲ knows, explains, and uses equivalent representations including the use of mathematical models for: **a. addition and subtraction of whole numbers from 0 through 1,000 (2.4.K1a-b) ($), e.g., 144 + 236 = 300 + 80** 	70A-70B, 70-71
b. multiplication using the basic facts through the 5s and the multiplication facts of the 10s (2.4.K1a), e.g., 3 x 2 can be represented as 4 + 2 or as an array, **X X X** **X X X;**	276A-276B, 276-279, 280A-280B, 280-281, 282A-282B, 282-283, 286A-286B, 286-287, 288A-288B, 288-291, 292A-292B, 292-293, 316A-316B, 316-317, 318A-318B, 318-319, 320A-320B, 320-323, 324A-324B, 324-327, 328A-328B, 328-331
c. addition and subtraction of money (2.4.K1d) ($), e.g., three half dollars equals 50¢ + 50¢ + 50¢ or 50¢ + 100¢.	162A-162B, 162-165

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. ▲N determines the value of mixed coins and bills with a total value of $50 or less (2.1.K1d) ($).	36A-36B, 36-39

Benchmark 2: Number Systems and Their Properties – The student demonstrates an understanding of whole numbers with a special emphasis on place value and recognizes, uses, and explains the concepts of properties as they relate to whole numbers, fractions, decimals, and money in a variety of situations.

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. identifies, reads, and writes numbers using numerals and words from tenths place through ten thousands place (2.4.K1a-b) ($), e.g., sixty-four thousand, three hundred eighty and five tenths is written in numerical form as 64,380.5.**	4A-4B, 4-5, 6A-6B, 6-7, 10A-10B, 10-11, 12A-12B, 12-13
2. identifies, models, reads, and writes numbers using expanded form from tenths place through ten thousands place (2.4.K1b), e.g., 56,277.3 = (5 x 10,000) + (6 x 1,000) + (2 x 100) + (7 x 10) + (7 x 1) + (3 x .1) = 50,000 + 6,000 + 200 + 70 + 7 + .3.	6A-6B, 6-7, 10A-10B, 10-11
3. classifies various subsets of numbers as whole numbers, fractions (including mixed numbers), or decimals (2.4.K1a-c, 2.4.K1i)	4A-4B, 4-5, 498A-498B, 498-501, 564A-564B, 564-565, 566A-566B, 566-567

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. identifies the place value of various digits from tenths to one hundred thousands place (2.4.K1b) ($).	6A-6B, 6-7, 8A-8B, 8-9, 10A-10B, 10-11, 12A-12B, 12-13
5. identifies any whole number through 1,000 as even or odd (2.4.K1a).	24, 258
6. uses the concepts of these properties with whole numbers from 0 through 100 and demonstrates their meaning including the use of concrete objects (2.4.K1a) ($): **a. commutative properties of addition and multiplication, e.g., 7 + 8 = 8 + 7 or 3 x 6 = 6 x 3;**	66A-66B, 66-69, 260A-260B, 260-261
b. zero property of addition (additive identity), e.g., 4 + 0 = 4;	66A-66B, 66-69
c. property of one for multiplication (multiplicative identity), 1 x 3 = 3;	286A-286B, 286-287
d. associative property of addition, e.g., (3 + 2) + 4 = 3 + (2 + 4);	66A-66B, 66-69
e. symmetric property of equality applied to addition and multiplication, e.g., 100 = 20 + 80 is the same as 20 + 80 = 100 and 3 x 4 = 12 is the same as 12 = 3 x 4;	66A-66B, 66-69, 292A-292B, 292-293

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
f. zero property of multiplication, e.g., 9 x 0 = 0 or 0 x 32 = 0.	286A-286B, 286-287
7. divides whole numbers from 0 through 99,999 into groups of 10,000s; 1,000s; 100s; 10s, and 1s using base ten models (2.4.K1b).	618A-618B, 618-621

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

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. estimates whole numbers quantities from 0 through 1,000; fractions (halves, fourths); and monetary amounts through $500 using various computational methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.K1a-d) ($).	80A-80B, 80-81, 82A-82B, 82-83, 86A-86B, 86-89, 90A-90B, 90-91, 94A-94B, 94-95, 96A-96B, 96-97, 98A-98B, 98-101, 160A-160B, 160-161

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. uses various estimation strategies to estimate using whole number quantities from 0 through 1,000 and explains the process used (2.4.K1a) ($) e.g., 362 rounded to the nearest ten is 360 and 362 rounded to the nearest hundred is 400. Using front-end estimation, 362 is about 300 or 400 depending on the context of the problem. Using a "nice" number, 362 is about 350 because of the benchmark number – 350, since 350 is the halfway point between 300 and 400.	80A-80B, 80-81, 82A-82B, 82-83, 86A-86B, 86-89, 90A-90B, 90-91, 94A-94B, 94-95, 96A-96B, 96-97, 98A-98B, 98-101, 160A-160B, 160-161
3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a), e.g., when asked how many students are in a classroom, an exact answer could be 24. Whereas, an approximate answer could be 20 since 24 could be rounded down to the nearest ten (underestimated) or rounded up to 30 (overestimated).	160A-160B, 160-161

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

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. computes with efficiency and accuracy using various computational methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.K1a) ($).**	126A-126B, 126-127, 128A-128B, 128-131, 132A-132B, 132-135, 136A-136B, 136-139, 146A-146B, 146-147, 148A-148B, 148-149, 150A-150B, 150-151, 152A-152B, 152-155, 156A-156B, 156-157, 162A-162B, 162-165, 166A-166B, 166-167
2. N states and uses with efficiency and accuracy the multiplication facts through the 5s and the multiplication facts of the 10s and corresponding division facts (2.4.K1a) ($).	276A-276B, 276-279, 280A-280B, 280-281, 282A-282B, 282-283, 286A-286B, 286-287, 288A-288B, 288-291, 292A-292B, 292-293, 316A-316B, 316-317, 318A-318B, 318-319, 320A-320B, 320-323, 324A-324B, 324-327, 328A-328B, 328-331, 386A-386B, 386-387, 388A-388B, 388-389, 390A-390B, 390-391, 392A-392B, 392-393, 396A-396B, 396-397, 402A-402B, 402-403
3. skip counts (multiples) by 2s, 3s, 4s, 5s, and 10s (2.4.K1a).	Related material: 260-261
4. N performs and explains these computational procedures: **a. adds and subtracts whole numbers from 0 through 10,000 (2.4.K1a-b);**	126A-126B, 126-127, 128A-128B, 128-131, 132A-132B, 132-135, 136A-136B, 136-139, 146A-146B, 146-147, 148A-148B, 148-149, 150A-150B, 150-151, 152A-152B, 152-155, 156A-156B, 156-157, 162A-162B, 162-165, 166A-166B, 166-167

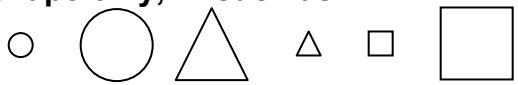
Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. multiplies whole numbers when one factor is 5 or less and the other factor is a multiple of 10 through 1,000 with or without the use of concrete objects (2.4.K1a-b), e.g., 400 x 3 = 120 or 70 x 5 = 350;	282A-282B, 282-283
c. adds and subtracts monetary amounts using dollar and cents notation through $500.00 (2.4.K1d) ($), e.g., $47.07 + $356.96 = $404.03.	162A-162B, 162-165
5. fair shares/measures out (divides) a total amount through 100 concrete objects into equal groups (2.4.K1a-b), e.g., fair sharing 52 pieces of candy with 8 friends resulting in eight groups of 6 with four pieces left over or measuring out into groups of eight 52 pieces of candy with four pieces left over.	370A-370B, 370-371
6. explains the relationship between addition and subtraction (2.4.K1a-b) ($).	70A-70B, 70-71
7. ▲■ N identifies multiplication and division fact families through the 5s and the multiplication and division fact families of the 10s (2.4.K1a), e.g., when given 6 x ☐ = 18, the student recognizes the remaining members of the fact family.	276A-276B, 276-279, 280A-280B, 280-281, 282A-282B, 282-283, 286A-286B, 286-287, 288A-288B, 288-291, 292A-292B, 292-293, 316A-316B, 316-317, 318A-318B, 318-319, 320A-320B, 320-323, 324A-324B, 324-327, 328A-328B, 328-331, 386A-386B, 386-387, 388A-388B, 388-389, 390A-390B, 390-391, 392A-392B, 392-393, 396A-396B, 396-397, 402A-402B, 402-403

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
8. reads and writes horizontally, vertically, and with different operational symbols the same addition, subtraction, multiplication, or division expression, e.g., 4 • 6 is the same as 4 x 6 or 4(6) or 6 and 10 x 4 divided by 2 is the same as 10 ÷ 2 or $\frac{10}{2}$.	76A-76B, 76-77,

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 using concrete objects in a variety of situations.

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. uses concrete objects, drawings, and other representations to work with types of patterns (2.4.K1a):	24A-24B, 24-27
a. repeating patterns, e.g., an AB pattern is like 1-2, 1-2, …; an ABC pattern is like dog-horse-pig, dog-horse-pig, …; an AAB pattern is like ↑↑→, ↑↑→, …;	
b. growing patterns, e.g., 1, 4, 7, 10, …	24A-24B, 24-27, 340A-340B, 340-341

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. uses these attributes to generate patterns: **a. counting numbers related to number theory (2.4.K1a), e.g., evens, odds, or multiples through the 5s;**	24, 258, 276
b. whole numbers that increase or decrease (2.4.K1a) ($),e.g., 3, 6, 9, …; 20, 15, 10, …;	8A-8B, 8-9, 24A-24B, 24-25
c. geometric shapes including one attribute change (2.4.K1f), e.g., ■-□-Δ-▲, ■-□-Δ-▲, ■-□-Δ-▲,… where the pattern is filled-in square, square, triangle, filled-in triangle, …; or when using attribute blocks the change is size only, then shape only, … such as 	Related material: 456-459
d. measurements (2.4.K1a), e.g., 1 ft, 2 ft, 3 ft, …; 3 lbs, 6 lbs, 9 lbs; or 2 cups, 4 cups, 6 cups, …;	534-535, 534-537, 538-539, 582-583, 584-587
e. money and time (2.4.K1a,d) ($), e.g., $.25, $.50, $.75, … or 1:05 p.m., 1:10 p.m., 1:15 p.m., …;	36-39, 192-195, 196-197
f. things related to daily life (2.4.K1a), e.g., water cycle, food cycle, or life cycle;	696-697

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
g. things related to size, shape, color, texture, or movement (2.4.K1a), e.g., red-green, red-green, red-green, …; snapping fingers; clapping hands; stomping feet; or tossing a bean bag over the head, under the leg, and behind the back (kinesthetic patterns).	Related material: 456-459
3. 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 (2.4.K1a) ($).	8A-8B, 8-9, 24A-24B, 24-27, 72A-72B, 72-75, 340A-340B, 340-341, 344A-344B, 344-345
4. generates: **a. repeating patterns (2.4.K1a),**	24A-24B, 24-27
b. growing (extending) patterns (2.4.K1a),	24A-24B, 24-27, 340A-340B, 340-341
c. patterns using function tables (input/output machines, T-tables) (2.4.K1e).	72A-72B, 72-75, 344A-344B, 344-345

Benchmark 2: Variables, Equations, and Inequalities – The student uses symbols and whole numbers to solve equations including the use of concrete objects in a variety of situations.

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. explains and uses symbols to represent unknown whole number quantities from 0 through 1,000 (2.4.K1a)**	168A-168B, 168-169
2. finds the sum or difference in one-step equations with ($): **a. whole numbers from 0 through 99 (2.4.K1a) e.g., 89 = 76 + y or y – 23 = 32;**	Preparation: 168A-168B, 168-169
b. monetary values through a dollar (2.4.K1d), e.g., 25¢ + 10¢ + 5¢ = n.	Preparation: 168A-168B, 168-169
3. finds the unknown in the multiplication and division fact families through the 5s and the 10s (2.4.K1a), e.g., 3 • ☐ = 4 • 6.	168A-168B, 168-169
4. compares two whole numbers from 0 through 1,000 using the equality and inequality symbols (=, <, >) and their corresponding meanings (is equal to, is less than, is greater than) (2.4.K1a-b) ($).	168A-168B, 168-169

Benchmark 3: Functions – The student recognizes and describes whole number relationships using concrete objects in a variety of situations.

<table>
<tr><th>Grade Three Knowledge Base Indicators</th><th>Scott Foresman – Addison Wesley Mathematics</th></tr>
<tr><td>The student...
1. states mathematical relationships between whole numbers from 0 through 200 using various methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.K1a) ($), e.g., every time a quarter is added to the amount; 25¢ is added to the total.</td><td>72A-72B, 72-75, 344A-344B, 344-345</td></tr>
<tr><td>2. finds the values and determines the rule with one operation (addition, subtraction) of whole numbers from 0 through 200 using a horizontal or vertical function table (input/output machine, T-table) (2.4.K1e), e.g., using this input/output machine, different student responses might be that the rule is Input minus 10 equals Output, the rule is N – 10, or the rule is subtract 10.
<table>
<tr><th>Input</th><th>Output</th></tr>
<tr><td>92</td><td>82</td></tr>
<tr><td>156</td><td>146</td></tr>
<tr><td>13</td><td>3</td></tr>
<tr><td>113</td><td>103</td></tr>
<tr><td>?</td><td>59</td></tr>
<tr><td>106</td><td>?</td></tr>
<tr><td>?</td><td>?</td></tr>
<tr><td>N</td><td>?</td></tr>
</table></td><td>72A-72B, 72-75, 344A-344B, 344-345</td></tr>
</table>

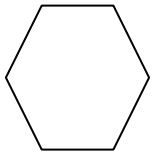
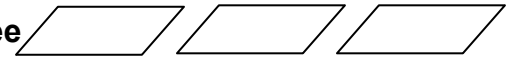
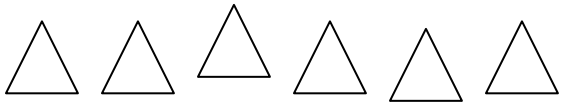
Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
3. ▲ generalizes numerical patterns using whole numbers from 0 through 200 with one operation (addition, subtraction) by stating the rule using words, e.g., if the sequence is 30, 50, 70, 90, …; in words, the rule is add twenty to the number before.	8A-8B, 8-9, 24A-24B, 24-27, 72A-72B, 72-75, 340A-340B, 340-341, 344A-344B, 344-345
4. uses a function table (input/output machine, T-table) to identify and plot ordered pairs in the first quadrant of a coordinate plane (2.4.K1a,e).	Preparation: 72A-72B, 72-75, 344A-344B, 344-345

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

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. knows, explains, and uses mathematical models to represent mathematical concepts, procedures, and relationships. Mathematical models include:** **a. process models (concrete objects, pictures, number lines, coordinate planes/grids, hundred charts, measurement tools, multiplication arrays, or division sets) to model computational procedures and mathematical relationships (1.2.K1, 1.2.K.1a, 1.2.K2 1.2.K3, 1.2.K5-6, 1.3.K1-3, 1.4.K1-3, 1.4.K1a-b, 1.4.K5-7, 2.1.K1, 2.1.K2a, 2.1.K2d-g, 2.1.K3, 2.1.K4a-b, 2.2.K1, 2.2.K2, 2.2.K3-4, 2.3.K1, 2.3.K4, 3.2.K1-4, 3.3.K1, 3.4.K1-3, K.2.K3) ($);**	260-261, 262-265, 370-371, 372-373

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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.K1c, 1.1.K2a, 1.1.K2c, 1.1.K3a, 1.2.K1-4, 1.2.K7, 1.3.K1, 1.4.K4a-b, 1.4.K5-6, 2.2.K4) ($);	6-7, 8-9 10-11
c. fraction models (fraction strips or pattern blocks) and decimal models (base ten blocks or coins) to compare, order, and represent numerical quantities (1.1.K1b, 1.1.K2b-c, 1.2.K3, 1.3.K1) ($);	498-501, 502-503, 510-511, 516-517, 518-519
d. money models (base ten blocks or coins) to compare, order, and represent numerical quantities (1.1K3c, 1.1.K4, 1.3.K1, 1.4.K4c, 2.1.K2e, 2.2.K2b) ($);	36-39, 40-41
e. function tables (input/output machines, T-tables) to find numerical relationships (2.1.K4c, 2.3.K2, 2.3.K4) ($);	72A-72B, 72-75, 344A-344B, 344-345
f. two-dimensional geometric models (geoboards, dot paper, pattern blocks, or tangrams) to model perimeter, area, and properties of geometric shapes and three-dimensional geometric models (solids) and real-world objects to compare size and to model attributes of geometric shapes (2.1.K2c, 3.1.K1-6, 3.2.K5, 3.3.K2);	428A-428B, 428-431, 432A-432B, 432-435, 442A-442B, 442-443, 444A-444B, 444-445, 446A-446B, 446-449, 450A-450B, 450-453, 454A-454B, 454-455

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
g. two-dimensional geometric models (spinners), three-dimensional models (number cubes), and process models (concrete objects) to model probability (4.1.K1-2) ($);	700A-700B, 700-701, 702A-702B, 702-703, 704A-704B, 704-707
h. graphs using concrete objects, representational objects, or abstract representations, pictographs, frequency tables, horizontal and vertical bar graphs, Venn diagrams or other pictorial displays, line plots, charts, and tables to organize and display data (2.3.K4, 4.1.K2, 4.2.K1a-d, 4.2.K1f-g, 4.2.K2) ($);	226A-226B, 226-227, 228A-228B, 228-231, 232A-232B, 232-235
i. Venn diagrams to sort data and show relationships (1.2.K3).	69

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. creates a mathematical model to show the relationship between two or more things, e.g., using pattern blocks, a whole (1) can be represented as **a**  **(1/1) or** **two**  **(2/2) or** **three**  **(3/3) or** **six**  **(6/6).**	456-459

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 investigates their properties using concrete objects in a variety of situations.

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes and investigates properties of plane figures (circles, squares, rectangles, triangles, ellipses, rhombi, octagons) using concrete objects, drawings, and appropriate technology (2.4.K1f).	446A-446B, 446-449, 450A-450B, 450-453, 454A-454B, 454-455
2. recognizes, draws, and describes plane figures (circles, squares, rectangles, triangles, ellipses, rhombi, octagons) (2.4.K1f).	446A-446B, 446-449, 450A-450B, 450-453, 454A-454B, 454-455
3. ■ recognizes the solids (cubes, rectangular prisms, cylinders, cones, spheres) (2.4.K1f).	428A-428B, 428-431, 432A-432B, 432-435
4. ▲ recognizes and describes the square, triangle, rhombus, hexagon, parallelogram, and trapezoid from a pattern block set (2.4.K1f).	446A-446B, 446-449, 450A-450B, 450-453, 454A-454B, 454-455
5. recognizes and describes a quadrilateral as any four-sided figure (2.4.K1f).	454A-454B, 454-455
6. determines if geometric shapes and real-world objects contain line(s) of symmetry and draws the line(s) of symmetry if the line(s) exist(s) (2.4.K1f).	460A-460B, 460-461

Benchmark 2: Measurement and Estimation – The student estimates and measures using standard and nonstandard units of measure with concrete objects in a variety of situations.

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. uses whole number approximations (estimations) for length, width, weight, volume, temperature, time, and perimeter using standard and nonstandard units of measure (2.4.K1a) ($).	533, 535, 582-583, 628, 681, 682, 685, 691, 697
2. ▲ reads and tells time to the minute using analog and digital clocks (2.4.K1a).	196A-196B, 196-197
3. selects, explains the selection of, and uses measurement tools, units of measure, and degree of accuracy appropriate for a given situation to measure (2.4.K1a) ($):	534-535, 536-537, 538-539
a. length width, and height to the nearest half inch, inch, foot, and yard; and to the nearest whole unit of nonstandard unit;	
b. length, width, and height to the nearest centimeter and meter;	582-583, 584-587
c. weight to the nearest whole unit of a nonstandard unit;	694-695
d. volume to the nearest cup, pint, quart, and gallon;	680-683
e. volume to the nearest liter;	684-687
f. temperature to the nearest degree.	696-697

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. states (2.4.K1a): **a. the number of hours in a day and days in a year;**	200A-200B, 200-201
b. the number of inches in a foot, inches in a yard, and feet in a yard;	536A-536B, 536-537, 538A-538B, 538-539
c. the number of centimeters in a meter;	582A-582B, 582-583, 584A-584B, 584-587
d. the number of cups in a pint, pints in a quart, and quarts in a gallon.	680A-680B, 680-683
5. finds the perimeter of squares, rectangles, and triangles given the measures of all the sides (2.4.K1f).	464A-464B, 464-467

Benchmark 3: Transformational Geometry – The student recognizes and performs one transformation on simple shapes or concrete objects in a variety of situations.

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. knows and uses cardinal points (north, south, east, west) and intermediate points (northeast, southeast, northwest, southwest) (2.4.K1a).**	Related material: 218-221

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. recognizes and performs one transformation (reflection/flip, rotation/turn, and translation/slide) on a two-dimensional figure (2.4.K1f).	456A-456B, 456-459

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 Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. uses a number line (horizontal/vertical) to model the basic multiplication facts through the 5s and the multiplication facts of the 10s (2.4.K1a).	260A-260B, 260-261
2. identifies points on a coordinate plane (coordinate grid) using (2.4.K1a):	218A-218B, 218-221
a. two positive whole numbers,	
b. a letter and a positive whole number.	218A-218B, 218-221
3. identifies points as ordered pairs in the first quadrant of a coordinate plane (coordinate grid) (2.4.K1a).	218A-218B, 218-221

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 Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. recognizes any outcome of a simple event in an experiment or simulation as impossible, possible, certain, likely, unlikely, or equally likely (2.4.K1g) ($).**	700A-700B, 700-701
2. ▲ ■ lists some of the possible outcomes of a simple event in an experiment or simulation including the use of concrete objects (2.4.K1g-h).	702A-702B, 702-703, 704A-704B, 704-707

Benchmark 2: Statistics – The student collects, organizes, displays, explains, and interprets numerical (whole numbers) and non-numerical data sets including the use of concrete objects in a variety of situations.

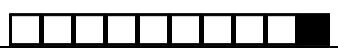
Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. organizes, displays, and reads numerical (quantitative) and non-numerical (qualitative) data in a clear, organized, and accurate manner including a title, labels, categories, and whole number intervals using these data displays (2.4.K1h) ($):** **a. graphs using concrete objects;**	212A-212B, 212-215, 226A-226B, 226-227

Grade Three Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. pictographs with a whole symbol or picture representing one, two, five, ten, twenty-five, or one-hundred (no partial symbols or pictures);	212A-212B, 212-215, 226A-226B, 226-227
c. frequency tables (tally marks);	204A-204B, 204-207
d. horizontal and vertical bar graphs;	212A-212B, 212-215, 228A-228B, 228-231
e. Venn diagrams or other pictorial displays, e.g., glyphs;	69
f. line plots;	222A-222B, 222-223, 232A-232B, 232-235
g. charts and tables.	204A-240B, 204-207
2. collects data using different techniques (observations, polls, surveys, or interviews) and explains the results (2.4.K1h) ($).	204A-240B, 204-207, 208A-208B, 208-211
3. ▲ finds these statistical measures of a data set with less than ten data points using whole numbers from 0 through 1,000 (2.4.K1a) ($): **a. minimum and maximum data values,**	Preparation: 204A-240B, 204-207
b. range,	Preparation: 204A-240B, 204-207
c. mode (uni-modal only),	Preparation: 204A-240B, 204-207
d. median when data set has an odd number of data points.	Preparation: 204A-240B, 204-207

Scott Foresman – Addison Wesley Mathematics
to the
Kansas Curricular Standards for Mathematics
Grade Four

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 whole numbers, fractions (including mixed numbers), decimals, and money including the use of concrete objects in a variety of situations.

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. knows, explains, and uses equivalent representations for ($):** **a. whole numbers from 0 through 100,000 (2.4.K1a-b);**	4A-4B, 4-7, 8A-8B, 8-9, 10A-10B, 10-11
b. fractions greater than or equal to zero (halves, fourths, thirds, eighths, tenths, twelfths, sixteenths, hundredths) including mixed numbers (2.4.K1c);	500A-500B, 500-501, 502A-502B, 502-503
c. decimals greater than or equal to zero through hundredths place and when used as monetary amounts (2.4.K1c-d) ($), e.g., 7¢ = $.07 = 7/100 of a dollar or a hundreds grid with 7 sections colored or .1 = 1/10 =  **.**	624A-624B, 624-627, 628A-628B, 628-629

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. compares and orders: **a. whole numbers from 0 through 100,000 (2.4.K1a-b) ($);**	16A-16B, 16-19
b. fractions greater than or equal to zero (halves, fourths, thirds, eighths, tenths, twelfths, sixteenths, hundredths) including mixed numbers with a special emphasis on concrete objects (2.4.K1c);	524A-524B, 524-527
c. decimals greater than or equal to zero through hundredths place and when used as monetary amounts (2.4.K1c-d) ($).	630A-630B, 630-631

Benchmark 2: Number Systems and Their Properties – The student demonstrates an understanding of whole numbers with a special emphasis on place value; recognizes, uses, and explains the concepts of properties as they relate to whole numbers; and extends these properties to fractions (including mixed numbers), decimals, and money.

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. ▲ identifies, models, reads, and writes numbers using numerals, words, and expanded notation from hundredths place through one-hundred thousands place (2.4.K1a-b) ($), e.g., four hundred sixty-two thousand, two hundred eighty-four and fifty hundredths = 462,284.50 or 462,284.50 = (4 x 100,000) + (6 x 10,000) + (2 x 1,000) + (2 x 100) + (8 x 10) + (4 x 1) + (5 x .1) + (0 x .01) = 400,000 + 60,000 + 2,000 + 200 + 80 + 4 + .5 + .00.	4A-4B, 4-7, 8A-8B, 8-9, 10A-10B, 10-11
2. classifies various subsets of numbers as whole numbers, fractions (including mixed numbers), or decimals (2.4.K1b-c, 2.4.K1i).	500-501, 502-503, 624-627
3. identifies the place value of various digits from hundredths place through one hundred thousands place (2.4.K1b) ($).	4A-4B, 4-7, 8A-8B, 8-9, 10A-10B, 10-11, 628A-628B, 628-629
4. identifies any whole number as even or odd (2.4.K1a).	Related material: 402-403
5. uses the concepts of these properties with the whole number system and demonstrates their meaning including the use of concrete objects (2.4.K1a) ($): **a. ▲ commutative properties of addition and multiplication, e.g., 12 + 18 = 18 + 12 and 8 x 9 = 9 x 8;**	76-79, 124-127

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. ▲ zero property of addition (additive identity) and property of one for multiplication (multiplicative identity), e.g., 24 + 0 = 24 and 75 x 1 = 75;	76-79
c. ▲ associative properties of addition and multiplication, e.g., 4 + (2 + 3) = (4 + 2) + 3 and 2 x (3 x 4) = (2 x 3) x 4;	76-79, 124-127
d. ▲ symmetric property of equality applied to addition and multiplication, e.g., 100 = 20 + 80 is the same as 20 + 80 = 100 and 21 = 7 x 3 is the same as 3 x 7 = 21;	76-79, 124-127
e. zero property of multiplication, e.g., 9 x 0 = 0 or 0 x 112 = 0;	128-131
f. distributive property, e.g., 6(7 + 3) = (6 • 7) + (6 • 3).	Preparation: 374-377

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

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. estimates whole number quantities from 0 through 10,000; fractions (halves, fourths, thirds); and monetary amounts through $1,000 using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a-d) ($).	62A-62B, 62-63, 64A-64B, 64-67, 68A-68B, 68-71, 72A-72B, 72-73, 258A-258B, 258-261, 316A-316B, 316-319, 368A-368B, 368-371, 636A-636B, 636-637
2. uses various estimation strategies and explains how they are used when estimating whole numbers quantities from 0 through 10,000; fractions [(halves, fourths, thirds) including mixed numbers)]; and monetary amounts through $1,000 (2.4.K1a-d) ($).	62A-62B, 62-63, 64A-64B, 64-67, 68A-68B, 68-71, 72A-72B, 72-73, 258A-258B, 258-261, 316A-316B, 316-319, 368A-368B, 368-371, 636A-636B, 636-637
3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a), e.g., when asked how many desks are in the room, the student gives an estimate of about 30 and then counts the desks and indicates an exact answer is 28 desks.	600A-600B, 600-601
4. selects the appropriate type of estimate (overestimate, underestimate, or range of estimates) (2.4.K1a).	72A-72B, 72-73

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

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. computes with efficiency and accuracy using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a) ($).	76A-76B, 76-79, 80A-80B, 80-81, 82A-82B, 82-85, 86A-86B, 86-89, 270A-270B, 270-273, 274A-274B, 274-277, 332A-332B, 332-335, 336A-336B, 336-337, 380A-380B, 380-383, 386A-386B, 386-389, 390A-390B, 390-391
2. N states and uses with efficiency and accuracy multiplication facts from 1 x 1 through 12 x 12 and corresponding division facts (2.4.K1a) ($).	124A-124B, 124-127, 128A-128B, 128-131, 132A-132B, 132-135, 136A-136B, 136-139, 146A-146B, 146-147, 148A-148B, 148-149, 150A-150B, 150-151, 152A-152B, 152-153
3. N performs and explains these computational procedures ($): **a. adds and subtracts whole numbers from 0 through 100,000 and when used as monetary amounts (2.4.K1a-b,d);**	76A-76B, 76-79, 82A-82B, 82-85
b. multiplies through a three-digit whole number by a two-digit whole number (2.4.K1a-b);	336A-336B, 336-337
c. multiplies whole dollar monetary amounts (through three-digits) by a one- or two-digit whole number (2.4.K1d), e.g., $45 x 16;	286A-286B, 286-287
d. multiplies monetary amounts less than $100.00 by whole numbers less than ten (2.4.K1d), e.g., $14.12 x 7;	286A-286B, 286-287

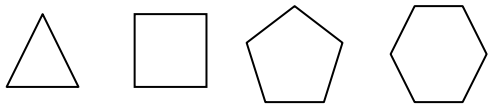
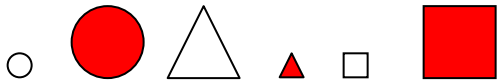
Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
e. divides through a two-digit whole number by a one-digit whole number with a one-digit whole number quotient with or without a remainder (2.4.K1a-b), e.g., 47 ÷ 5 = 9 r 2;	380A-380B, 380-383
f. adds and subtracts fractions greater than or equal to zero with like denominators (2.4.K1c);	564A-564B, 564-567, 574A-574B, 574-577
g. figures correct change through $20.00 (2.4.K1d).	32A-32B, 32-33
4. identifies multiplication and division fact families (2.4.K1a).	148A-148B, 148-149
5. reads and writes horizontally, vertically, and with different operational symbols the same addition, subtraction, multiplication, or division expression, e.g., 6 • 4 is the same as 6 x 4 is the same as 4 and x 6 6(4) or 10 divided by 2 is the same as 10 ÷ 2 or 10/2.	76-79, 82-85, 136-139, 150-151
6. ▲N shows the relationship between these operations with the basic fact families (addition facts with sums from 0 through 20 and corresponding subtraction facts, multiplication facts from 1 x 1 through 12 x 12 and corresponding division facts) including the use of mathematical models (2.4.K1a) ($): **a. addition and subtraction,**	100-101

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. addition and multiplication,	124-127
c. multiplication and division,	148-149
d. subtraction and division.	146-147
7. finds factors and multiples of whole numbers from 1 through 100 (2.4.K1a).	256-257, 406-407

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 using concrete objects in a variety of situations.

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. uses concrete objects, drawings, and other representations to work with types of patterns(2.4.K1a):** **a. repeating patterns, e.g., an AB pattern is like 1-2, 1-2, …; an ABC pattern is like dog-horse-pig, dog-horse-pig, …; an AAB pattern is like ↑↑→, ↑↑→, …;**	10A-10B, 10-11, 90A-90B, 90-91, 366A-366B, 366-367, 641
b. growing patterns e.g., 2, 5, 11, 20, …	10A-10B, 10-11, 90A-90B, 90-91, 366A-366B, 366-367, 641

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. uses these attributes to generate patterns: **a. counting numbers related to number theory (2.4.K1a), e.g., multiples and factors through 12 or multiplying by 10, 100, or 1,000;**	256-257, 406-407
b. whole numbers that increase or decrease (2.4.K1a) ($) , e.g., 20, 15, 10, …;	256-257, 406-407
c. geometric shapes including one or two attributes changes (2.4.K1f), e.g.,  **… when the next shape has one more side; or when both color and shape change at the same time such as**  **…,**	90A-90B, 90-91
d. measurements (2.4.K1a), e.g., 3 ft., 6 ft., 9 ft., …;	588-589, 592-593, 652-653, 654-655, 656-657
e. money and time (2.4.K1a,d) ($), e.g., $.25, $.50, $.75, … or 1:05 p.m., 1:10 p.m., 1:15 p.m., …;	28-29, 30-31, 192-195

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
f. things related to daily life (2.4.K1a), e.g., water cycle, food cycle, or life cycle;	664-665
g. things related to size, shape, color, texture, or movement (2.4.K1a), e.g., rough, smooth, rough, smooth, rough, smooth, …; or clapping hands (kinesthetic patterns).	90A-90B, 90-91
3. 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 (2.4.K1a) ($).	10A-10B, 10-11, 90A-90B, 90-91, 366A-366B, 366-367, 641
4. generates: **a. a pattern (repeating, growing) (2.4.K1a);**	10A-10B, 10-11, 90A-90B, 90-91, 366A-366B, 366-367, 641
b. a pattern using a function table (input/output machines, T-tables) (2.4.K1e).	10A-10B, 10-11, 90A-90B, 90-91, 366A-366B, 366-367, 641

Benchmark 2: Variables, Equations, and Inequalities – The student uses variables, symbols, and whole numbers to solve equations including the use of concrete objects in a variety of situations.

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. explains and uses variables and symbols to represent unknown whole number quantities from 0 through 1,000 (2.4.K1a).	94A-94B, 94-95, 96A-96B, 96-97, 98A-98B, 98-99, 100A-100B, 100-101, 160A-160B, 106-103, 166A-166B, 166-167, 690A-690B, 690-691, 692A-692B, 692-695
2. ▲ solves one-step equations using whole numbers with one variable and a whole number solution that: **a. find the unknown in a multiplication or division equation based on the multiplication facts from 1 x 1 through 12 x 12 and corresponding division facts (2.4.K1a), e.g., 60 = 10 x n;**	166A-166B, 166-167
b. find the unknown in a money equation using multiplication and division based upon the facts and addition and subtraction with values through $10 (2.4.K1d) ($), e.g., 8 quarters + 10 dimes = y dollars;	166A-166B, 166-167
c. find the unknown in a time equation involving whole minutes, hours, days, and weeks with values through 200 (2.4.K1a), e.g., 180 minutes = y hours.	Related material: 196-197

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
3. compares two whole numbers from 0 through 10,000 using the equality and inequality symbols (=, ≠, <, >) and their corresponding meanings (is equal to, is not equal to, is less than, is greater than) (2.4.K1b) ($).	16A-16B, 16-17
4. reads and writes whole number equations and inequalities using mathematical vocabulary and notation, e.g., 15 = 3 x 5 is the same as fifteen equals three times five or 4,564 > 1,000 is the same as four thousand, five hundred sixty-four is greater than one thousand.	100A-100B, 100-101, 166A-166B, 166-167, 692A-692B, 692-695

Benchmark 3: Functions – The student recognizes and describes whole number relationships including the use of concrete objects in a variety of situations.

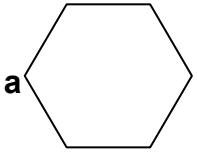
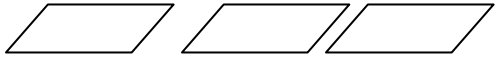
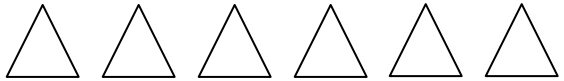
Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. states mathematical relationships between whole numbers from 0 through 1,000 using various methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a) ($).**	164A-164B, 164-165, 692A-692B, 692-695

<table>
<tr><th>Grade Four Knowledge Base Indicators</th><th>Scott Foresman – Addison Wesley Mathematics</th></tr>
<tr><td>2. ▲ finds the values, determines the rule, and states the rule using symbolic notation with one operation of whole numbers from 0 through 200 using a horizontal or vertical function table (input/output machine, T-table) (2.4.K1e), e.g., using the function table, find the rule, the rule is N • 4.
<table>
<tr><td>N</td><td>?</td></tr>
<tr><td>1</td><td>4</td></tr>
<tr><td>5</td><td>20</td></tr>
<tr><td>2</td><td>8</td></tr>
<tr><td>3</td><td>?</td></tr>
<tr><td>4</td><td>?</td></tr>
<tr><td>?</td><td>24</td></tr>
</table></td><td>164A-164B, 164-165, 692A-692B, 692-695</td></tr>
<tr><td>3. generalizes numerical patterns using whole numbers from 0 through 200 with one operation by stating the rule using words, e.g., if the pattern is 46, 68,90, 112, 134, …; in words, the rule is add 22 to the number before.</td><td>10A-10B, 10-11, 90A-90B, 90-91, 366A-366B, 366-367, 641</td></tr>
<tr><td>4. uses a function table (input/output machine, T-table) to identify, plot, and label the ordered pairs in the first quadrant of a coordinate plane (2.4.K1a,e).</td><td>692A-692B, 692-695</td></tr>
</table>

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 Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. knows, explains, and uses mathematical models to represent mathematical concepts, procedures, and relationships. Mathematical models include:** **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, mathematical relationships, and equations (1.1.K1a, 1.1.K2a, 1.2.K1, 1.2.K4-5, 1.3.K1-4, 1.4.K1-2, 1.4.K3a-b, 1.4.K3e, 1.4.K4, 1.4.K6-7, 2.1.K1, 2.1.K.1a-b, 2.1.K2d-g, 2.1.K3, 2.1.K4a, 2.2.K1, 2.2.K2a, 2.2.K3-4, 2.3.K1, 2.3.K4, 3.2.K1-4, 3.3.K1-2, 3.4.K1-4, 4.2.K3) ($);**	124A-124B, 124-127, 146A-146B, 146-147, 164A-164B, 164-165, 692A-692B, 692-695
b. place value models (place value mats, hundred charts, base ten blocks, or unifix cubes) to compare, order, and represent numerical quantities and to model computational procedures (1.1.K1a, 1.1.K2a, 1.2.K1-3, 1.3.K1-2, 1.4.K3a-b, 1.4.K3e, 2.2.K4) ($);	4A-4B, 4-7, 8A-8B, 8-9, 10A-10B, 10-11, 628A-628B, 628-629

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
c. fraction and mixed number models (fraction strips or pattern blocks) and decimal models (base ten blocks or coins) to compare, order, and represent numerical quantities (1.1.K1b-c, 1.1.K2b-c, 1.2.K2, 1.3.K1-2, 1.4.K1f) ($);	500A-500B, 500-501, 502A-502B, 502-503
d. money models (base ten blocks or coins) to compare, order, and represent numerical quantities (1.1.K1c, 1.2.K1c, 1.3.K1-2, 1.4.K3a, 1.4.K3a, 1.4.K3c-d, 1.4.K3g, 2.1.K2e, 2.2.K2b) ($);	28A-28B, 28-29
e. function tables (input/output machines, T-tables) to model numerical and algebraic relationships (2.1.K4b, 2.3.K2, 2.3.K4, 3.4.K4) ($);	164A-164B, 164-165, 692A-692B, 692-695
f. two-dimensional geometric models (geoboards, dot paper, pattern blocks, or tangrams) to model perimeter, area, and properties of geometric shapes and three-dimensional geometric models (solids) and real-world objects to compare size and to model properties of geometric shapes (2.1.K2c, 2.1.K1e, 3.1.K1-6, 3.2.K5, 3.3.K3);	434-437, 438-439, 440-443, 444-447, 448-449
g. two-dimensional geometric models (spinners), three-dimensional models (number cubes), and process models (concrete objects) to model probability (4.1.K1-3) ($);	700-703, 704-705, 706-709, 710-713

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
h. graphs using concrete objects, pictographs, frequency tables, horizontal and vertical bar graphs, line graphs, circle graphs, Venn diagrams, line plots, charts, and tables to organize and display data (4.1.K2, 4.2.K1-2) ($);	204-205, 206-207, 208-211, 212-215, 216-221
i. Venn diagrams to sort data and show relationships (1.2.K2).	Related material: 204-205
2. creates a mathematical model to show the relationship between two or more things, e.g., using pattern blocks, a whole (1) can be represented as **a**  **(1/1) or** **two**  **(2/2) or** **three**  **(3/3) or** **six**  **(6 (6/6).**	204A-204B, 204-205

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 investigates their properties including the use of concrete objects in a variety of situations.

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. recognizes and investigates properties of plane figures (circles, squares, rectangles, triangles, ellipses, rhombi, octagons, hexagons, pentagons) using concrete objects, drawings, and appropriate technology (2.4.K1f).**	438A-438B, 438-439, 440A-440B, 440-443, 444A-444B, 444-447, 448A-448B, 448-449
2. recognizes, draws, and describes plane figures (circles, squares, rectangles, triangles, ellipses, rhombi, octagons, hexagons, pentagons) (2.4.K1f).	438A-438B, 438-439, 440A-400B, 440-443, 444A-444B, 444-447, 448A-448B, 448-449
3. describes the solids (cubes, rectangular prisms, cylinders, cones, spheres, triangular prisms) using the terms faces, edges, and vertices (corners) (2.4.K1f).	434A-434B, 434-437
4. recognizes and describes the square, triangle, rhombus, hexagon, parallelogram, and trapezoid from a pattern block set (2.4.K1f).	438A-438B, 438-439, 444A-444B, 444-447
5. recognizes (2.4.k1f): **a. squares, rectangles, rhombi, parallelograms, trapezoids as special quadrilaterals;**	438A-438B, 438-439, 444A-444B, 444-447

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. similar and congruent figures;	452A-452B, 452-455, 458A-458B, 458-459
c. points, lines (intersecting, parallel, perpendicular), line segments, and rays.	440A-440B, 440-443
6. determines if geometric shapes and real-world objects contain line(s) of symmetry and draws the line(s) of symmetry if the line(s) exist(s) (2.4.K1f).	456A-456B, 456-457

Benchmark 2: Measurement and Estimation – The student estimates and measures using standard and nonstandard units of measure including the use of concrete objects in a variety of situations.

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. 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) ($).**	590A-590B, 590-591

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. ▲ selects, explains the selection of, and uses measurement tools, units of measure, and degree of accuracy appropriate for a given situation to measure (2.4.K1a) ($): **a. length, width, and height to the nearest fourth of an inch or to the nearest centimeter;**	588A-588B, 588-589, 590A-590B, 590-591, 652A-652B, 652-653
b. volume to the nearest cup, pint, quart, or gallon; to the nearest liter; or to the nearest whole unit of a nonstandard unit;	592A-592B, 592-593, 654A-654B, 654-655
c. weight to the nearest ounce or pound or to the nearest whole unit of a nonstandard unit of measure;	594A-594B, 594-595, 656A-656B, 656-657
d. temperature to the nearest degree;	664A-664B, 664-665
e. time including elapsed time.	190A-190B, 190-191, 192A-192B, 192-195, 196A-196B, 196-197
3. states: **a. the number of weeks in a year;**	200A-200B, 200-201
b. the number of ounces in a pound;	594A-594B, 594-595
c. the number of milliliters in a liter, grams in a kilogram, and meters in a kilometer;	652A-652B, 652-653, 654A-654B, 654-655, 656A-656B, 656-657
d. the number of items in a dozen.	related material: 596-599, 658-661

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. converts (2.4.K1a): **a. within the customary system: inches and feet, feet and yards,**	596A-596B, 596-599
b. inches and yards, cups and pints, pints and quarts, quarts and gallons;	596A-596B, 596-599
c. within the metric system: centimeters and meters.	658A-658B, 658-661
5. finds(2.4.K1f): **a. the perimeter of two-dimensional figures given the measures of all the sides.**	464A-464B, 464-467
b. the area of squares and rectangles using concrete objects.	468A-468B, 468-471

Benchmark 3: Transformational Geometry – The student recognizes and performs one transformation on simple shapes or concrete objects in a variety of situations.

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student... **1. describes a transformation using cardinal points or positional directions (2.4.K1a), e.g., go north three blocks and then west four blocks or move the triangle three units to the right and two units up.**	Related material: 212-215
2. ▲■ recognizes, performs, and describes one transformation (reflection/flip, rotation/turn, translation/slide) on a two-dimensional figure or concrete object (2.4.K1a).	452A-452B, 452-455
3. recognizes three-dimensional figures (rectangular prisms, cylinders) and concrete objects from various perspectives (top, bottom, sides, corners) (2.4.K1f).	434A-434B, 434-437

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 Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. uses a number line (horizontal/vertical) to model whole number multiplication facts from 1 x 1 through 12 x 12 and corresponding division facts (2.4.K1a).	124A-124B, 124-127, 128A-128B, 128-131, 132A-132B, 132-135, 136A-136B, 136-139, 146A-146B, 146-147, 148A-148B, 148-149, 150A-150B, 150-151, 152A-152B, 152-153
2. uses points in the first quadrant of a coordinate plane (coordinate grid) to identify locations (2.4.K1a).	212A-212B, 212-215
3. ▲■ identifies and plots points as whole number ordered pairs in the first quadrant of a coordinate plane (coordinate grid) (2.4.K1a).	212A-212B, 212-215
4. organizes whole number data using a T-table and plots the ordered pairs in the first quadrant of a coordinate plane (coordinate grid) (2.4.K1a,e).	216A-216B, 216-219

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 Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes that the probability of an impossible event is zero and that the probability of a certain event is one (2.4.K1g) ($).	700A-700B, 700-703
2. lists all possible outcomes of a simple event in an experiment or simulation including the use of concrete objects (2.4.K1g-h).	704A-704B, 704-705
3. recognizes and states the probability of a simple event in an experiment or simulation (2.4.K1g), e.g., when a coin is flipped, the probability of landing heads up is ½ and the probability of landing tails up is ½. This can be read as one out of two or one half.	706A-706B, 706-709

Benchmark 2: Statistics – The student collects, organizes, displays, explains, and interprets numerical (whole numbers) and non-numerical data sets including the use of concrete objects in a variety of situations.

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. ▲■ organizes, displays, and reads numerical (quantitative) and non-numerical (qualitative) data in a clear, organized, and accurate manner including a title, labels, categories, and whole number intervals using these data displays (2.4.K1h) ($): **a. graphs using concrete objects;**	204A-204B, 204-205
b. pictographs with a symbol or picture representing one, two, five, ten, twenty-five, or one-hundred including partial symbols when the symbol represents an even amount;	204A-204B, 204-205
c. frequency tables (tally marks);	230A-230B, 230-231
d. horizontal and vertical bar graphs;	208A-208B, 208-211
e. Venn diagrams or other pictorial displays, e.g., glyphs;	204A-204B, 204-205
f. line plots;	206A-206B, 206-207
g. charts and tables;	230A-230B, 230-231
h. line graphs;	216A-216B, 216-219
i. circle graphs.	536A-536B, 536-537

Grade Four Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. collects data using different techniques (observations, polls, surveys, interviews, or random sampling) and explains the results (2.4.K1h) ($).	230A-230B, 230-231
3. identifies, explains, and calculates or finds these statistical measures of a data set with less than ten whole number data points using whole numbers from 0 through 1,000 (2.4.K1a) ($): **a. minimum and maximum values,**	226A-226B, 226-226
b. range,	226A-226B, 226-226
c. mode,	226A-226B, 226-226
d. median when data set has an odd number of data points,	226A-226B, 226-226
e. mean when data set has a whole number mean.	226A-226B, 226-226

Scott Foresman – Addison Wesley Mathematics
to the
Kansas Curricular Standards for Mathematics
Grade Five

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 integers, fractions, decimals, and money in a variety of situations.

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. ▲ knows, explains, and uses equivalent representations for ($):	4A-4B, 4-7
a. whole numbers from 0 through 1,000,000 (2.4.K1a-b);	
b. fractions greater than or equal to zero (including mixed numbers) (2.4.K1c);	410A-410B, 410-411, 412A-412B, 412-413
c. decimals greater than or equal to zero through hundredths place and when used as monetary amounts (2.4.K1c).	8A-8B, 8-11
2. compares and orders (2.4.K1a-c) ($) :	712A-712B, 712-715
a. integers,	

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. fractions greater than or equal to zero (including mixed numbers),	418A-418B, 418-419, 420A-420B, 420-423
c. decimals greater than or equal to zero through hundredths place.	12A-12B, 12-13
3. explains the numerical relationships (relative magnitude) between whole numbers, fractions greater than or equal to zero (including mixed numbers), and decimals greater than or equal to zero through hundredths place (2.4.K1a-c).	6A-6B, 6-7, 12A-12B, 12-13, 430A-430B, 430-431
4. knows equivalent percents and decimals for one whole, one-half, one-fourth, three-fourths, and one tenth through nine tenths (2.4.K1c), e.g., 1 = 100% = 1.0, 3/4 = 75% = .75, 3/10 = 30% = .3.	668A-668B, 668-669
5. identifies integers and gives real-world problems where integers are used (2.4.K1a), e.g., making a T-table of the temperature each hour over a twelve hour period in which the temperature at the beginning is 10 degrees and then decreases 2 degrees per hour.	712A-712B, 712-715, 716-717, 718-719

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 Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. classifies subsets of numbers as integers, whole number, fractions (including mixed numbers), or decimals (2.4.K1a-c, 2.4.K1k).	4A-4B, 4-5, 8A-8B, 8-11, 394A-394B, 394-397, 712A-712B, 712-715
2. identifies prime and composite numbers from 0 through 50.	164A-164B, 164-167
3. uses the concepts of these properties with whole numbers, integers, fractions greater than or equal to zero (including mixed numbers), and decimals greater than or equal to zero and demonstrates their meaning including the use of concrete objects (2.4.K1a) ($): **a. commutative properties of addition and multiplication, e.g., 43 + 34 = 34 + 43 and 12 x 15 = 15 x 12;**	22A-22B, 22-25
b. associative properties of addition and multiplication, e.g., 4 + (3 + 5) = (4 + 3) + 5;	22A-22B, 22-25
c. zero property of addition (additive identity) and property of one for multiplication (multiplicative identity), e.g., 342 + 0 = 342 and 576 x 1 = 576;	22A-22B, 22-25

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
d. symmetric property of equality, e.g., 35 = 11 + 24 is the same as 11 + 24 = 35;	22A-22B, 22-25
e. zero property of multiplication, e.g., 438,223 x 0 = 0;	22A-22B, 22-25
f. distributive property, e.g., 7(3 + 5) = 7(3) + 7(5);	70A-70B, 70-71, 69A-696B, 696-699
g. substitution property, e.g., if a = 3 and a = b, then b = 3.	Related material: 100-103
4. recognizes Roman Numerals that are used for dates, on clock faces, and in outlines.	562-563
5. recognizes 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.	712A-712B, 712-715

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

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. estimates whole numbers quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a-c) ($).	28A-28B, 28-31, 68A-68B, 68-70, 86A-86B, 86-87, 138A-138B, 138-143, 204A-204B, 204-209, 474A-474B, 474-475, 494A-494B, 494-495, 672A-672B, 672-675
2. ▲ uses various estimation strategies to estimate whole number quantities from 0 through 100,000; fractions greater than or equal to zero (including mixed numbers); decimals greater than or equal to zero through hundredths place; and monetary amounts to $10,000 and explains how various strategies are used (2.4.K1a-c) ($).	28A-28B, 28-31, 68A-68B, 68-70, 86A-86B, 86-87, 138A-138B, 138-143, 204A-204B, 204-209, 474A-474B, 474-475, 494A-494B, 494-495, 672A-672B, 672-675
3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c).	600A-600B, 600-601
4. explains the appropriateness of an estimation strategy used and whether the estimate is greater than (overestimate) or less than (underestimate) the exact answer (2.4.K1a).	68-69, 86-87, 138-141

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 Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. computes with efficiency and accuracy using various computational methods including mental math, paper and pencil, concrete materials, and appropriate technology (2.4.K1a).	36A-36B, 36-37, 38A-38B, 38-39, 40A-40B, 40-41, 88A-88B, 88-91, 94A-94B, 94-97, 152A-152B, 152-155, 156A-156B, 156-157, 158A-158B, 158-159, 160A-160B, 160-161, 202A-202B, 202-203, 214A-214B, 214-217, 218A-218B, 218-221, 224A-224B, 224-225, 230A-230B, 230-231, 232A-232B, 232-233, 234A-234B, 234-237, 460A-460B, 460-461, 462A-462B, 462-463, 464A-464B, 464-465, 466A-466B, 466-469, 472A-472B, 472-473, 474A-474B, 474-475, 476A-476B, 476-477, 478A-478B, 478-483
2. performs and explains these computational procedures: **a. N divides whole numbers through a 2-digit divisor and a 4-digit dividend with the remainder as a whole number or a fraction using paper and pencil (2.4.K1a-b), e.g., 7452 ÷ 24 = 310 r 12 or 310 ½;**	152A-152B, 152-155, 156A-156B, 156-157, 158A-158B, 158-159, 214A-214V, 214-217
b. divides whole numbers beyond a 2-digit divisor and a 4-digit dividend using appropriate technology (2.4.K1a-b), e.g., 73,368 ÷ 36 = 2,038;	218A-218B, 218-221, 224A-224B, 224-225
c. N adds and subtracts decimals from thousands place through hundredths place (2.4.K1c);	38A-38B, 38-39, 40A-40B, 40-41

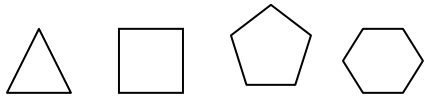
Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
d. N multiplies decimals up to three digits by two digits from hundreds place through hundredths place (2.4.K1c);	88A-88B, 88-91, 92A-92B, 92-93, 94A-94B, 94-97
e. N adds and subtracts fractions greater than or equal to zero (including mixed numbers) without regrouping and without expressing answers in simplest form (2.4.K1c);	460A-4601, 460-461, 472A-472B, 472-473
f. N multiplies and divides by 10; 100; 1,000; or single-digit multiples of each (2.4.K1a-b), e.g., 20 • 300 or 4,400 ÷ 500.	66A-66B, 66-67, 136A-136B, 136-137, 202A-202B, 202-203
3. reads and writes horizontally, vertically, and with different operational symbols the same addition, subtraction, multiplication, or division expression, e.g., 6 • 4 is the same as 6 x 4 is the same as 6(4) and 6 or 10 divided by 2 is the same as 10 ÷ 2 or $\frac{10}{2}$. $\underline{\text{x 4}}$	398A-398B, 398-399

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. ▲N identifies, explains, and finds the greatest common factor and least common multiple of two or more whole numbers through the basic multiplication facts from 1 x 1 through 12 x 12 (2.4.K1d).	414A-414B, 414-415

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 Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
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. The types of patterns are (2.4.K1a):	14A-14B, 14-17, 66A-66B, 66-67, 84A-84B, 84-85
a. repeating patterns, e.g., 9, 10, 11, 9, 10, 11, …;	
b. growing patterns, e.g., 20, 30, 28, 38, 36, … where the rule is add 10, then subtract 2; or 2, 5, 8, … as an example of an arithmetic sequence – each term after the first is found by adding the same number to the preceding term.	14A-14B, 14-17, 66A-66B, 66-67, 84A-84B, 84-85, 106A-106B, 106-107, 136A-136B, 136-137, 728A-728B, 728-729

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. uses these attributes to generate patterns: **a. counting numbers related to number theory (2.4.K1a), e.g., multiples or perfect squares;**	66-67, 84A-84B, 84-85, 136A-136B, 136-137
b. whole numbers (2.4.K1a) ($), e.g., 10; 100; 1,000; 10,000; 100,000; … (powers of ten);	14A-14B, 14-17, 66A-66B, 66-67, 106A-106B, 106-107, 136A-136B, 136-137, 728A-728B, 728-729
c. geometric shapes through two attribute changes (2.4.K1g), e.g.,  **… when the next shape has one more side; or when both the color and the shape change at the same time;**	Related material: 364-367
d. measurements (2.4.K1a), e.g., 3 m, 6 m, 9 m, …;	528-531, 534-535
e. things related to daily life (2.4.K1a), e.g., sports scores, longitude and latitude, elections, eras, or appropriate topics across the curriculum;	31, 97, 155, 221, 285, 345, 429, 499, 545, 597, 675, 727
f. things related to size, shape, color, texture, or movement (2.4.K1a), e.g., square dancing moves (kinesthetic patterns)	364-367
3. identifies, states, and continues a pattern presented in various formats including numeric (list or table), visual (picture, table, or graph), verbal (oral description), kinesthetic (action), and written (2.4.K1a) ($).	14A-14B, 14-17, 66A-66B, 66-67, 84A-84B, 84-85, 106A-106B, 106-107, 136A-136B, 136-137, 728A-728B, 728-729

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. generates: **a. a pattern (repeating, growing) (2.4.K1a).**	14A-14B, 14-17, 66A-66B, 66-67, 84A-84B, 84-85, 106A-106B, 106-107, 136A-136B, 136-137, 728A-728B, 728-729
b. a pattern using a function table (input/output machines, T-tables) (2.4.K1g).	106A-106B, 106-107, 728A-728B, 728-729

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 Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. ▲ explains and uses variables and symbols to represent unknown whole number quantities from 0 through 1,000 and variable relationships (2.4.K1a)	100A-100B, 100-103, 104A-104B, 104-105, 106A-106B, 106-107, 108A-108B, 108-109, 172A-172B, 172-173, 174A-174B, 174-175, 176A-176B, 176-179, 696A-696B, 696-699, 700A-700B, 700-701, 702A-702B, 702-705, 706A-706B, 706-709, 728A-728B, 728-729
2. ▲N solves one-step linear equations with one variable and a whole number solution using addition and subtraction with whole numbers from 0 through 100 and multiplication with the basic facts (2.4.K1a,e) ($), e.g., 3y = 12, 45 = 17 + q, or r – 42 = 36.	108A-108B, 108-109, 700A-700B, 700-701, 702A-702B, 702-705, 706A-706B, 706-709, 728A-728B, 728-729

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
3. explains and uses equality and inequality symbols (=, ≠, <, ≤, >, ≥) 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) with whole numbers from 0 to 100,000 (2.4.K1a-b) ($).	108A-108B, 108-109, 700A-700B, 700-701, 702A-702B, 702-705, 706A-706B, 706-709, 728A-728B, 728-729
4. recognizes ratio as a comparison of part-to-part and part-to-whole relationships (2.4.K1a), e.g., the relationship between the number of boys and the number of girls (part-to-part) or the relationship between the number of girls to the total number of students in the classroom (part-to-whole).	646A-646B, 646-647, 648A-648B, 648-651, 652A-652B, 652-653

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

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. states mathematical relationships between whole numbers from 0 through 10,000 using various methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.K1a) ($).	106A-106B, 106-107, 728A-728B, 728-729

<table>
<tr><th>Grade Five Knowledge Base Indicators</th><th>Scott Foresman – Addison Wesley Mathematics</th></tr>
<tr><td>2. finds the values, determines the rule, and states the rule using symbolic notation with one operation of whole numbers from 0 through 10,000 using a vertical or horizontal function table (input/output machine, T-table) (2.4.K1f), e.g., using the function table, fill in the values and find the rule, the rule is N • 80.
<table>
<tr><td>N</td><td>4</td><td>9</td><td>11</td><td>?</td><td>2</td><td>7</td><td>?</td></tr>
<tr><td>?</td><td>320</td><td>720</td><td>880</td><td>640</td><td>?</td><td>?</td><td>800</td></tr>
</table></td><td>106A-106B, 106-107, 728A-728B, 728-729</td></tr>
<tr><td>3. generalizes numerical patterns using whole numbers from 0 through 5,000 up to two operations by stating the rule using words, e.g., If the sequence is 2400, 1200, 600, 300, 150, …; in words, the rule could be split the number in half or divide the number before by 2 or if the sequence is 4, 11, 25, 53, 109, …; in words, the rule could be double the number and add 3 to get the next number or multiply the number by 2 and add 3.</td><td>14A-14B, 14-17, 66A-66B, 66-67, 84A-84B, 84-85, 106A-106B, 106-107, 136A-136B, 136-137, 728A-728B, 728-729</td></tr>
<tr><td>4. ▲ ■ uses a function table (input/output machine, T-table) to identify, plot, and label whole number ordered pairs in the first quadrant of a coordinate plane (2.4.K1a,f).</td><td>728A-728B, 728-729</td></tr>
<tr><td>5. plots and locates points for integers (positive and negative whole numbers) on a horizontal number line and vertical number line (2.4.K1a).</td><td>712A-712B, 712-715</td></tr>
</table>

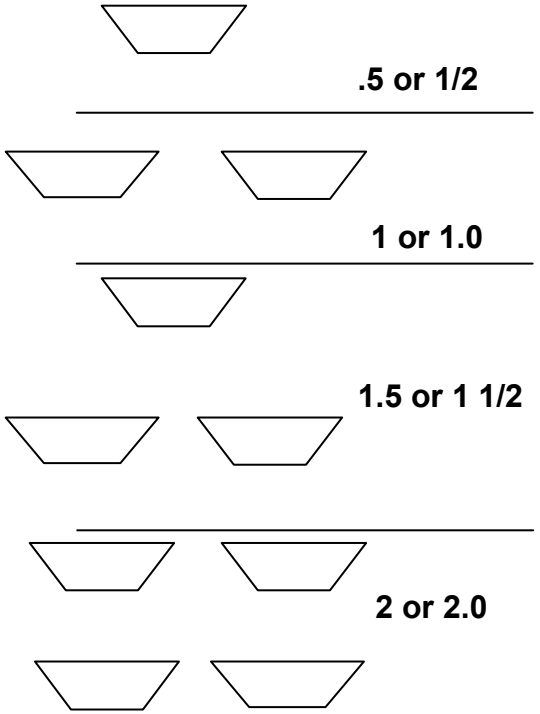
Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
6. describes whole number relationships using letters and symbols.	106A-106B, 106-107, 728A-728B, 728-729

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 Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. knows, explains, and uses mathematical models to represent mathematical concepts, procedures, and relationships. Mathematical models include: **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.K1a, 1.1K1c, 1.1.K2, 1.1.K3, 1.1.K5, 1.2.K1, 1.2.K3, 1.3.K1-4, 1.4.K1, 1.4.K2a-b, 1.4.K.2f, 2.1.K1, 2.1.K2a-b, 2.1.K2d-h, 2.1.K2, 2.2.K1-4, 2.3.K1, 2.3.K4-5, 3.1.K1-6, 3.2.K1-4, 3.3.K1-2, 3.4.K1-4, 4.2.K3) ($);**	92A-92B, 92-95, 106A-106B, 106-107, 108A-108B, 108-109, 700A-700B, 700-701, 702A-702B, 702-705, 706A-706B, 706-709, 728A-728B, 728-729

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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.K1a, 1.1.K2, 1.1.K4, 1.2.K1, 1.3.K1-3, 1.4.K2a-b, 1.4.K2f, 2.2.K3) ($);	4A-4B, 4-5, 8A-8B, 8-11, 14A-14B, 14-17
c. fraction and mixed number models (fraction strips or pattern blocks) and decimal and money models (base ten blocks or coins) to compare, order, and represent numerical quantities (1.1.K1b, 1.1.K2-4, 1.2.K1, 1.3.K1-3, 1.4.K2c-e, 4.1.K4) ($);	8A-8B, 8-11, 394A-394B, 394-397, 400A-400B, 400-401
d. factor trees to find least common multiple and greatest common factor (1.2.K2, 1.4.K4);	414A-414B, 414-415
e. equations and inequalities to model numerical relationships (2.2.K2) ($);	108A-108B, 108-109, 700A-700B, 700-701, 702A-702B, 702-705, 706A-706B, 706-709, 728A-728B, 728-729
f. function tables (input/output machines, T-tables) to model numerical and algebraic relationships (2.1.K1c, 2.1.K1j, 3.1.K1-8, 3.2.K7-8, 3.3.K1-3) ($);	106A-106B, 106-107, 728A-728B, 728-729
g. two-dimensional geometric models (geoboards or dot paper) to model perimeter, area, and properties of geometric shapes and three-dimensional models (nets or solids) and real-world objects to compare size and to model volume and properties of geometric shapes (2.1.K2c, 2.1.K4b, 3.2.K5, 3.3.K3, 4.1.K2);	328A-328B, 328-331, 332A-332B, 332-335, 336A-336B, 336-337, 340A-340B, 340-341, 342A-342B, 342-345, 346A-346B, 346-351

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
h. tree diagrams to organize attributes through three different sets and determine the number of possible combinations (4.1.K2, 4.2.K1a-d, 4.2.K1f-l; 4.2.K2, 4.2);	300A-300B, 300-301
i. two- and three-dimensional geometric models (spinners or number cubes) and process models (concrete objects, pictures, diagrams, or coins) to model probability (4.1.K1-3, 4.2.K1e, 4.2.K2) ($) ;	296A-296B, 296-299, 300A-300B, 300-301, 302A-302B, 302-305
j. graphs using concrete objects, pictographs, frequency tables, bar graphs, line graphs, circle graphs, Venn diagrams, line plots, charts, tables, and single stem-and-leaf plots to organize and display data (4.1.K2, 4.2.K1-2) ($) ;	260A-260B, 260-261, 262A-262B, 262-265, 266A-266B, 266-269, 270A-270B, 270-275
k. Venn diagrams to sort data and show relationships.	103

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. creates mathematical models to show the relationship between two or more things, e.g., using trapezoids to represent numerical quantities – 	394-397, 400-401

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 Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes and investigates properties of plane figures and solids using concrete objects, drawings, and appropriate technology (2.4.K1g).	328A-328B, 328-331, 332A-332B, 332-335, 336A-336B, 336-337, 340A-340B, 340-341, 342A-342B, 342-345, 346A-346B, 346-351, 594A-594B, 594-597, 598A-598B, 598-601
2. recognizes and describes (2.4.K1g): **a. regular polygons having up to and including ten sides;**	340-341, 342A-342B, 342-345, 346A-346B, 346-351
b. similar and congruent figures.	360A-360B, 360-363
3. ▲ recognizes and describes the solids (cubes, rectangular prisms, cylinders, cones, spheres, triangular prisms, rectangular pyramids, triangular pyramids) using the terms faces, edges, and vertices (corners) (2.4.K1g).	594A-594B, 594-597, 598A-598B, 598-601
4. determines if geometric shapes and real-world objects contain line(s) of symmetry and draws the line(s) of symmetry if the line(s) exist(s) (2.4.K1g).	368A-368B, 368-371
5. recognizes, draws, and describes (2.4.K1g): **a. points, lines, line segments, and rays;**	328A-328B, 328-331
b. angles as right, obtuse, or acute.	332A-332B, 332-335, 336A-336B, 336-337

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
6. recognizes and describes the difference between intersecting, parallel, and perpendicular lines (2.4.K1g).	328A-328B, 328-331
7. identifies circumference, radius, and diameter of a circle (2.4.K1g).	336A-336B, 336-337

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

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
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) ($).	332A-332B, 332-335, 532A-532B, 532-533, 540A-540B, 540-541, 548A-548B, 548-549, 550A-550B, 550-551, 552A-552B, 552-553, 554A-554B, 554-557
2. selects, explains the selection of, and uses measurement tools, units of measure, and degree of accuracy appropriate for a given situation to measure length, width, weight, volume, temperature, time, perimeter, and area using (2.4.K1a) ($):	

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
a. customary units of measure to the nearest fourth and eighth inch,	532A-532B, 532-533
b. metric units of measure to the nearest centimeter,	534A-534B, 534-535
c. nonstandard units of measure to the nearest whole unit,	528-531
d. time including elapsed time.	562A-562B, 562-563, 564A-564B, 564-567
3. states the number of feet and yards in a mile (2.4.K1a).	528A-528B, 528-531
4. converts (2.4.K1a): **a. ▲ ■ within the customary system: inches and feet, feet and yards, inches and yards, cups and pints, pints and quarts, quarts and gallons, pounds and ounces;**	528A-528B, 528-531
b. within the metric system: centimeters and meters, meters and kilometers, milliliters and liters, grams and kilograms.	536A-536B, 536-539
5. knows and uses perimeter and area formulas for squares and rectangles (2.4.K1g).	540A-540B, 540-541, 548A-548B, 548-549, 550A-550B, 550-551

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 Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes and performs through two transformations (reflection, rotation, translation) on a two-dimensional figure (2.4.K1a).	364A-364B, 364-367
2. recognizes when an object is reduced or enlarged (2.4.K1a).	662A-662B, 662-663
3. ▲ recognizes three-dimensional figures (rectangular prisms, cylinders, cones, spheres, triangular prisms, rectangular pyramids) from various perspectives (top, bottom, side, corners) (2.4.K1g).	594A-594B, 594-597, 598A-598B, 598-601

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 Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. locates and plots points on a number line (vertical/horizontal) using integers (positive and negative whole numbers) (2.4.K1a).	712A-712B, 712-715
2. explains mathematical relationships between whole numbers, fractions, and decimals and where they appear on a number line (2.4.K1a).	426A-426B, 426-429, 430A-430B, 430-433
3. identifies and plots points as ordered pairs in the first quadrant of a coordinate plane (coordinate grid) (2.4.K1a).	724A-724B, 724-727
4. organizes whole number data using a T-table and plots the ordered pairs in the first quadrant of a coordinate plane (coordinate grid) (2.4.K1a,f).	728A-728B, 728-279

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 Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes that all probabilities range from zero (impossible) through one (certain) (2.4.K1i) ($).	296A-296B, 296-299
2. lists all possible outcomes of a simple event in an experiment or simulation in an organized manner including the use of concrete objects (2.4.K1g-j).	300A-300B, 300-301
3. recognizes a simple event in an experiment or simulation where the probabilities of all outcomes are equal (2.4.K1i).	302A-302B, 302-305
4. uses fractions to represent the probability of a simple event (2.4.K1c).	302A-302B, 302-305

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 Mathematics
The student...	
1. organizes, displays, and reads numerical (quantitative) and non-numerical (qualitative) data in a clear, organized, and accurate manner including a title, labels, categories, and whole number and decimal intervals using these data displays (2.4.K1j) ($):	Related material: 262-265, 266-269
a. graphs using concrete objects,	
b. pictographs,	Related material: 103
c. frequency tables,	260A-260B, 260-261
d. bar and line graphs,	262A-262B, 262-265, 266A-266B, 266-269
e. Venn diagrams and other pictorial displays, e.g., glyphs,	103
f. line plots,	266A-266B, 266-269
g. charts and tables,	260A-260B, 60-261
h. circle graphs,	286A-286B, 286-287
i. single stem-and-leaf plots.	270A-270B, 270-275

Grade Five Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. collects data using different techniques (observations, polls, tallying, interviews, surveys, or random sampling) and explains the results (2.4.K1j) ($).	260A-260B, 60-261
3. ▲ identifies, explains, and calculates or finds these statistical measures of a whole number data set of up to twenty whole number data points from 0 through 1,000 (2.4.K1a) ($): **a. minimum and maximum values,**	282A-282B, 282-285
b. range,	282A-282B, 282-285
c. mode (no-, uni-, bi-),	282A-282B, 282-285
d. median (including answers expressed as a decimal or a fraction without reducing to simplest form),	282A-282B, 282-285
e. mean (including answers expressed as a decimal or a fraction without reducing to simplest form).	282A-282B, 282-285

Scott Foresman – Addison Wesley Mathematics
to the
Kansas Curricular Standards for Mathematics
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 Mathematics
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) ($).	164A-164B, 164-167, 168A-168B, 168-169, 172A-172B, 172-175, 358A-358B, 358-361
2. ▲ compares and orders (2.4.K1a-c) ($): **a. integers;**	410A-410B, 410-411
b. fractions greater than or equal to zero,	176A-176B, 176-179
c. decimals greater than or equal to zero through thousandths place.	78A-78B, 78-79

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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).	12A-12B, 12-13, 78A-78B, 78-79, 176A-176B, 176-177, 178, 182, 410A-410B, 410-411
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.	358A-358B, 358-361
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.	40A-40B, 40-43

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 Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. classifies subsets of the rational number system as counting numbers, whole numbers, integers, fractions (including mixed numbers), or decimals (2.4.K1a,c,k).	4A-4B, 4-7, 76A-76B, 76-77, 160A-160B, 160-163
2. identifies prime and composite numbers and explains their meaning (2.4.K1d).	146A-146B, 146-149
3. uses and describes these properties with the rational number system and demonstrates their meaning including the use of concrete objects (2.4.K1a) ($): **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);**	28A-28B, 28-29
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);	28A-28B, 28-29
c. symmetric property of equality, e.g., 24 x 72 = 1,728 is the same as 1,728 = 24 x 72;	28A-28B, 28-29

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
d. zero property of multiplication (any number multiplied by zero is zero);	28A-28B, 28-29
e. distributive property (distributing multiplication or division over addition or subtraction), e.g., 26(9 + 15) = 26(9) + 26(15);	30A-30B, 30-31
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;	40-43
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;	44A-44B, 44-47
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 x 7 = b x 7;	44A-44B, 44-47
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., $^{+}5 + (^{-}5) = 0$.	48A-48B, 48-51

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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.	408A-408B, 408-409
5. recognizes that the irrational number pi can be represented by an approximate rational value, e.g., 22/7 or 3.14.	576-578

Benchmark 3: Estimation – The student uses computational estimation with rational numbers and the irrational number pi in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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) ($).	16A-16B, 16-17, 18A-18B, 18-19, 216A-216B, 216-217, 256A-256B, 256-257, 368A-368B, 368-369
2. uses various estimation strategies and explains how they were used to estimate rational number quantities or the irrational number pi (2.4.K1a-c) ($)	16A-16B, 16-17, 18A-18B, 18-19, 216A-216B, 216-217, 256A-256B, 256-257, 368A-368B, 368-369

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
3. recognizes and explains the difference between an exact and an approximate answer (2.4.K1a-c).	226A-226B, 226-227
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).	16A-16B, 16-17, 18A-18B, 18-19, 216A-216B, 216-217, 256A-256B, 256-257, 368A-368B, 368-369

Benchmark 4: Computation – The student models, performs, and explains computation with positive rational numbers and integers in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. computes with efficiency and accuracy using various computational methods including mental math, paper and pencil, concrete objects, and appropriate technology (2.4.K1a).	86A-86B, 86-89, 90A-90B, 90-93, 94A-94B, 94-97, 100A-100B, 100-103, 204-205, 206A-206B, 206-211, 218A-218B, 218-219, 220A-220B, 220-223, 248A-248B, 248-251, 252A-252B, 252-255, 258A-258B, 258-259, 266A-266B, 266-267, 270A-270B, 270-271
2. performs and explains these computational procedures:	

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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 ÷ 24 = 310 r 12, 310 12/24, 310 ½, or 310.5;	24A-24B, 24-27, 30A-30B, 30-31
b. N adds and subtracts decimals from millions place through thousandths place (2.4.K1c);	86A-86B, 86-89
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 ÷ 1.2 = 3,625;	90A-90B, 90-93, 94A-94B, 94-97
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 ÷ .002 or 54.3 x 300;	106A-106B, 106-109
e. N adds integers (2.4.K1a); e.g., $^{+}6 + {}^{-}7 = {}^{-}1$	418A-418B, 418-421
f. ▲N adds, subtracts, and multiplies fractions (including mixed numbers) expressing answers in simplest form (2.4.K1c); e.g., 5¼ • ⅓ = $\frac{21}{4} \bullet \frac{1}{3} = \frac{7}{4}$ or 1¾	204A-204B, 204-205, 206A-206B, 206-209, 218A-218B, 218-219, 220A-220B, 220-223, 248A-248B, 248-251, 252A-252B, 252-255, 258A-258B, 258-259
g. N finds the root of perfect whole number squares (2.4.K1a);	Preparation: 8-11

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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;	24A-24B, 24-27
i. adds, subtracts multiplies, and divides rational numbers using concrete objects.	86-89, 204-205, 252-255
3. recognizes, describes, and uses different representations to express the same computational procedures, e.g., 3/4 = 3 ÷ 4 = $4\overline{)3}$ **.**	160-163
4. identifies, explains, and finds the prime factorization of whole numbers (2.4.K1d).	146A-146B, 146-149
5. finds prime factors, greatest common factor, multiples, and the least common multiple (2.4.K1d).	142A-142B, 142-145, 146A-146B, 146-1149, 150A-150B, 150-151, 152A-152B, 152-155
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?	370A-370B, 370-737, 380A-380B, 380-383, 384A-384B, 384-385, 386A-386B, 386-387

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 the general rule of a pattern in variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
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:	212A-212B, 212-213, 444A-444B, 444-447, 448A-448B, 448-449
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);	212A-212B, 212-213, 444A-444B, 444-447, 448A-448B, 448-449
c. geometric figures through two attribute changes (2.4.K1g);	Related material: 510-511, 516-519
d. measurements (2.4.K1a);	542-545, 546-549
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.	35, 103, 175, 223, 269, 309, 383, 466, 479, 557, 645, 721

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
2. generates a pattern repeating, growing) (2.4.K1a).	212A-212B, 212-213, 444A-444B, 444-447, 448A-448B, 448-449
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.	212A-212B, 212-213, 444A-444B, 444-447, 448A-448B, 448-449
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.	444A-444B, 444-447, 448A-448B, 448-449

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.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. explains and uses variables and/or symbols to represent unknown quantities and variable relationships (2.4.K1a), e.g., x < 2.	40A-40B, 40-43, 48A-48B, 48-51, 112A-112B, 112-115, 116A-116B, 116-119, 274A-274B, 274-275, 276A-276B, 276-277, 430A-430B, 430-433, 448A-448B, 448-449, 698A-698B, 698-699, 700A-700B, 700-703, 710A-710B, 710-711, 712A-712B, 712-715, 716A-716B, 716-717, 718A-718B, 718-721
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.	40A-40B, 40-43
3. solves (2.4.K1a,e) ($): **a. one-step linear equations (addition, subtraction, multiplication, division) with one variable and whole number solutions, e.g.,** **2 x = 8 or x + 7 = 12**	48A-48B, 48-49
b. one-step linear inequalities(addition, subtraction) in one variable with whole numbers, e.g., x – 5 < 12;	700A-700B, 700-703

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. explains and uses equality and inequality symbols (=, ≠, <, ≤, >, ≥) 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) ($).	48A-48B, 48-51, 112A-112B, 112-115, 276A-276B, 276-277, 712A-712B, 712-715
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., $\frac{1}{2} = \frac{x}{4}$, $\frac{2}{3} = \frac{4}{x}$, $\frac{1}{4} = \frac{x}{100}$.	300A-300B, 300-301, 302A-302B, 302-305, 316A-316B, 316-317, 318A-318B, 318-321, 354A-354B, 354-357, 370A-370B, 370-373
6. finds the value of algebraic expressions using whole numbers (2.4.Ka), e.g., If x =3, then 5x = 5(3).	40A-40B, 40-43

Benchmark 3: Functions – The student recognizes, describes, and analyzes linear relationships in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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).	444A-444B, 444-447, 448A-448B, 448-449
2. finds the values and determines the rule with one operation using a function table (input/output machine, T-table) (2.4.K1f).	444A-444B, 444-447, 448A-448B, 448-449
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 number before in half or divide the number before by 2.	212A-212B, 212-213, 444A-444B, 444-447, 448A-448B, 448-449
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).	444A-444B, 444-447, 448A-448B, 448-449

Benchmark 4: Models – The student generates and uses mathematical models to represent and justify mathematical relationships in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. knows, explains, and uses mathematical models to represent mathematical concepts, procedures, and relationships. Mathematical models include:	48A-48B, 48-51, 112A-112B, 112-115, 276A-276B, 276-277, 448A-448B, 448-449, 698A-698B, 698-699, 712A-712B, 712-715, 718A-718B, 718-721
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) ($);	
b. place value models (place value mats, hundred charts, base ten blocks, or unifix cubes) to compare, order, and represent numerical quantities and to model computational procedures (1.1.K1-4, 1.2.K1, 1.3.K1-3, 1.4.K2b, 1.4.K2c-d, 2.2K4) ($);	4A-4B, 4-7

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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) ($):	160A-160B, 160-163, 168A-168B, 168-169
d. factor trees to find least common multiple and greatest common factor (1.4.K4-5);	150A-150B, 150-151, 152A-152B, 152-155
e. equations and inequalities to model numerical relationships (2.2.K3,) ($);	48A-48B, 48-51, 112A-112B, 112-115, 276A-276B, 276-277, 448A-448B, 448-449, 698A-698B, 698-699, 712A-712B, 712-715, 718A-718B, 718-721
f. function tables (input/output machines, T-tables) to model numerical and algebraic relationships (2.3.K2, 2.3.K4) ($);	444A-444B, 444-447, 448A-448B, 448-449
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);	472A-472B, 472-475, 494A-494B, 494-495, 496A-496B, 496-499, 500A-500B, 500-501, 502A-502B, 502-503, 586A-586B, 586-589

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
h. tree diagrams to organize attributes and determine the number of possible combinations (4.1.K2);	654A-654B, 654-657, 658A-658B, 658-661
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) ($).	662A-662B, 662-663, 664A-664B, 664-667
j. frequency tables, bar graphs, line graphs, circle graphs, Venn diagrams, line plots, charts, tables, single stem-and-leaf plots, and scatter plots to organize and display data (4.2.K1-3) ($);	620A-620B, 620-623, 628A-628B, 628-631, 632A-632B, 623-633, 636A-636B, 636-637, 638A-638B, 638-641, 642A-642B, 642-647
k. Venn diagrams to sort data and to show relationships (1.2.K1).	89, 151, 413
2. uses one or more mathematical models to show the relationship between two or more things.	636A-636B, 636-637, 638A-638B, 638-641, 642A-642B, 642-647

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 figures and compares their properties in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. recognizes and compares properties of plane figures and solids using concrete objects, constructions, drawings, and appropriate technology (2.4.K1g).	472A-472B, 472-475, 494A-494B, 494-495, 496A-496B, 496-499, 500A-500B, 500-501, 502A-502B, 502-503, 586A-586B, 586-589
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).	494A-494B, 494-495, 496A-496B, 496-499, 500A-500B, 500-501
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).	586A-586B, 586-589
4. recognizes all existing lines of symmetry in two-dimensional figures (2.4.K1g).	514A-514B, 514-515
5. recognizes and describes the attributes of similar and congruent figures (2.4.K1g).	506A-506B, 506-509
6. recognizes and uses symbols for angle (find symbol for), line(↔), line segment (—), ray (→), parallel (||), and perpendicular (□).	472A-472B, 472-475
7. ▲ classifies (2.4.K1g): **a. angles as right, obtuse, acute, or straight;**	476A-476B, 476-479

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. triangles as right, obtuse, acute, scalene, isosceles, or equilateral.	496A-496B, 496-499
8. identifies and defines circumference, radius, and diameter of circles and semicircles.	576A-576B, 576-579
9. recognize that the sum of the angles of a triangle equals 180° (2.4.K1g).	496-499
10. determines the radius or diameter of a circle given one or the other.	502A-502B, 502-503

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 Mathematics
The student...	
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) ($).	16A-16B, 16-17, 18A-18B, 18-19, 216A-216B, 216-217, 256A-256B, 256-257, 368A-368B, 368-369

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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) ($).	476A-476B, 476-479, 542A-542B, 542-545, 546A-546B, 546-549, 568A-568B, 568-569, 570A-570B, 570-571, 572A-572B, 572-575, 590A-590B, 590-593, 594A-594B, 594-597
3. converts (2.4.K1a): **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;**	542A-542B, 542-545
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.	546A-546B, 546-549
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).	542A-542B, 542-545, 546A-546B, 546-549
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,**	564A-564B, 564-567, 568A-568B, 568-569
b. figures derived from squares and/or rectangles.	572A-572B, 572-575

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
6. describes the composition of the metric system (2.4.K1a): **a. meter, liter, and gram (root measures);**	546A-546B, 546-549
b. kilo, hecto, deka, deci, centi, and milli (prefixes).	546A-546B, 546-549
7. finds the volume of rectangular prisms using concrete objects (2.4.K1g).	594A-594B, 594-597
8. estimates an approximate value of the irrational number pi (2.4.K1a).	576-578

Benchmark 3: Transformational Geometry – The student recognizes and performs transformations on two- and three-dimensional geometric figures in a variety of situations.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
1. ▲ ■ identifies, describes, and performs one or two transformations (reflection, rotation, translation) on a two-dimensional figure (2.4.K1a).	510A-510B, 510-511
2. reduces (contracts/shrinks) and enlarges (magnifies/grows) simple shapes with simple scale factors (2.4.K1a), e.g., tripling or halving.	330A-330B, 330-333

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
3. recognizes three-dimensional figures from various perspectives (top, bottom, sides, corners) (2.4.K1a).	586A-586B, 586-589
4. recognizes which figures will tessellate (2.4.K1a).	516A-516B, 516-519

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.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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).**	410A-410B, 410-411
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).	440A-440B, 440-443, 444A-444B, 444-447
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;**	440A-440B, 440-443, 444A-444B, 444-447

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
b. plot the ordered pairs of integer values.	440A-440B, 440-443, 444A-444B, 444-447

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 Mathematics
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 ½, .5, or 50%. The probability of flipping a head on a two-headed coin? The probability of flipping a tail on a two-headed coin?	662A-662B, 662-663

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
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).	654A-654B, 654-657, 658A-658B, 658-661
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).	662A-662B, 662-663
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 ½ or .5.	662A-662B, 662-663, 664A-664B, 664-667, 668A-668B, 668-671, 672A-672B, 672-673

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.

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
The student...	
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) ($):	Related material: 636-637, 638-641
a. graphs using concrete objects;	
b. frequency tables and line plots;	628A-628B, 628-631
c. bar, line, and circle graphs;	636A-636B, 636-637, 638A-638B, 638-641, 642A-642B, 642-647
d. Venn diagrams or other pictorial displays;	89, 151, 413
e. charts and tables;	620A-620B, 620-623
f. single stem-and-leaf plots;	632A-632B, 632-633
g. scatter plots;	640
2. selects and justifies the choice of data collection techniques (observations, surveys, or interviews) and sampling techniques (random sampling, samples of convenience, or purposeful sampling) in a given situation (2.4.K1j).	620A-620B, 620-623
3. uses sampling to collect data and describe the results (2.4.K1j) ($).	620A-620B, 620-623

Grade Six Knowledge Base Indicators	Scott Foresman – Addison Wesley Mathematics
4. determines mean, median, mode, and range for (2.4.K1a,c) ($): **a. a whole number data set,**	624A-624B, 624-627
b. a decimal data set with decimals greater than or equal to zero.	624A-624B, 624-627