

A Correlation of

SCOTT FORESMAN • ADDISON WESLEY

Mathematics

to the

New Mexico

Mathematics Content Standards,
Benchmarks, & Performance Standards

Grade Four



C/M-96_G4

Introduction

This document demonstrates the high degree of success students will achieve when using **Scott Foresman – Addison Wesley Mathematics** in meeting the objectives of the New Mexico Mathematics Content Standard, Benchmarks, & Performance Standards. Correlation page references are to the Teacher’s Edition. Lessons in the Teacher’s Edition contain 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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NEW MEXICO MATHEMATICS CONTENT STANDARDS, BENCHMARKS, & PERFORMANCE STANDARDS
Publisher Alignment Analyses for Primary Tool of Instruction

This correlation table/matrix is a tool to show alignment with New Mexico’s Content Standards, Benchmarks, & Performance Standards and the proposed instructional material considered for adoption. The purpose is to demonstrate how your material can contribute to student achievement as measured against these Content Standards.

Attach a completed copy of this document to each core basal sample you are submitting for review. You will submit 3 copies of each student & teacher edition for each title & other material deemed necessary to provide appropriate instruction, along with these alignment documents at the 2006 June Summer Institute. DO NOT SEND WITH THE RFP.

Mathematics Grade 4

Standard 1: NUMBER AND OPERATIONS: Students will understand numerical concepts and mathematical operations.

Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	<ol style="list-style-type: none">1. Exhibit an understanding of the place-value structure of the base-ten number system by reading, modeling, writing, and interpreting whole numbers up to 100,000; compare and order the numbers:<ul style="list-style-type: none">• recognize equivalent representations for the same number and generate them by decomposing and combining numbers (e.g., $853 = 8 \times 100 + 5 \times 10 + 3$; $853 = 85 \times 10 + 3$; $853 = 900 - 50 + 3$)• identify the numbers less than 0 by extending the number line and using negative numbers through familiar applications (e.g., temperature, money)	<p>4A–4B, 4–7, 10A–10B, 10–11</p> <p>664A–664B, 664–665</p>	

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Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
	<p>2. Identify fractions as parts of unit wholes, as parts of groups, and as locations on number lines:</p> <ul style="list-style-type: none">• use visual models and other strategies to compare and order commonly used fractions• use models to show how whole numbers and decimals (to the hundredths place) relate to simple fractions (e.g., $\frac{1}{2}$, $\frac{5}{10}$, and 0.5)• identify different interpretations of fractions:<ul style="list-style-type: none">○ division of whole numbers by whole numbers○ ratio○ equivalence○ ordering of fractions○ parts of a whole or parts of a set	<p>522A–522B, 522–523</p> <p>500A–500B, 500–501, 502A–502B, 502–503, 504A–504B, 504–507, 508A–508B, 508–511, 624A–624B, 624–626</p> <p>146A–146B, 146–147, 500A–500B, 500–501, 502A–502B, 502–503, 516A–516B, 516–519, 522A–522B, 522–523</p>	
	<p>3. Add and subtract fractions with common and uncommon denominators using a variety of strategies (e.g., manipulatives, numbers, pictures):</p> <ul style="list-style-type: none">• recognize and generate equivalent decimal forms of commonly used fractions (e.g., halves, quarters, tenths, fifths)• identify the numbers less than 0 by extending the number line and using negative numbers through familiar applications (e.g., temperature, money)	<p>624A–624B, 624–627</p> <p>664A–664B, 664–665</p>	
	<p>4. Recognize classes of numbers (e.g., odd, even, factors, multiples, square numbers) and apply these concepts in problem-solving situations.</p>	<p>124A–124B, 124–126, 128A–128B, 128–129, 134, 402A–402B, 402–403</p>	

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Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
B. Understand the meaning of operations and how they relate to one another.	1. Demonstrate an understanding of and the ability to use: <ul style="list-style-type: none">• standard algorithms for the addition and subtraction of multi-digit numbers• standard algorithms for multiplying a multi-digit number by a two-digit number and for dividing a multi-digit number by a one-digit number	76A–76B, 76–79, 80A–80B, 80–81, 82A–82B, 82–85, 86A–86B, 86–89 76A–76B, 76–79, 80A–80B, 80–81, 82A–82B, 82–85, 86A–86B, 86–89, 128A–128B, 128–131, 132A–132B, 132–135, 136A–136B, 136–139, 148A–148B, 148–149, 150A–150B, 150–151, 254J, 256A–256B, 256–257, 270A–270B, 270–273, 274A–274B, 274–277, 288A–288B, 288–289, 290A–290B, 290–291, 292A–292B, 292–293, 312I–312J, 314A–314B, 314–315, 332A–332B, 332–335, 336A–336B, 336–337, 340A–340B, 340–341	
	2. Select and use appropriate operations (addition, subtraction, multiplication, and division) to solve problems.	290A–290B, 290–291, 346A–346B, 346–347	
	3. Extend the uses of whole numbers to the addition and subtraction of simple decimals (positive numbers to two places).	572A–573B, 572–575	
	4. Demonstrate commutative, associative, identity, and zero properties of operations on whole numbers (e.g., $37 \times 46 = 46 \times 37$ and $(6 \times 2) \times 5 = 6 \times (2 \times 5)$).	62B, 62, 129–131, 132, 134, 288A–288B, 288–289	
	5. Demonstrate the concept of distributivity of multiplication over addition and subtraction (e.g., 7×28 is equivalent to $(7 \times 20) + (7 \times 8)$ or $(7 \times 30) - (7 \times 2)$).	132–133, 267	

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Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
C. Compute fluently and make reasonable estimates.	1. Demonstrate multiplication combinations through 12 x 12 and related division facts, and use them to solve problems mentally and compute related problems (e.g., 4 x 5 is related to 40 x 50, 400 x 5, and 40 x 500).	128A–128B, 128–129, 132A–132B, 132–133, 136A–136B, 136–139	
	2. Add, subtract, and multiply up to two double-digits accurately and efficiently.	62A–62B, 62–63, 64A–64B, 64–66, 270A–270B, 270–272, 274A–274B, 274–275, 332A–332B, 332–335, 336A–336B, 336–337	
	3. Use a variety of strategies (e.g., rounding and regrouping) to estimate the results of whole number computations and judge the reasonableness of the answers.	60I, 62A–62B, 62–63, 64A–64B, 64–67, 68A–68B, 68–71, 254I, 258A–258B, 258–261, 316A–316B, 316–319, 364J, 368A–368B, 368–371, 600A–600B, 600–601, 636A–636B, 636–637	
	4. Use strategies to estimate computations involving fractions and decimals.	562A–562B, 562–563, 636A–636B, 636–637	

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Mathematics Grade 4

Standard 2: ALGEBRA: Students will understand algebraic concepts and applications.

Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
A. Understand patterns, relations, and functions.	1. Represent and analyze patterns and simple functions using words, tables, and graphs.	98A–98B, 98–99, 140A–140B, 140–142, 164A–164B, 164–165, 366A–366B, 366–367, 439	
	2. Create and describe numeric and geometric patterns including multiplication and division patterns.	37, 90A–90B, 90–91, 122I, 128A–128B, 128–131, 136A–136B, 136–137, 140A–140B, 140–142, 256, 314, 406, 454, 641	
	3. Express mathematical relationships using equations.	690A–690B, 690–691	
	4. Use and interpret variables, mathematical symbols, and properties to write and simplify expressions and sentences: <ul style="list-style-type: none">• use letters, boxes, or other symbols to stand for any number in simple expressions or equations (e.g., demonstrate an understanding of the concept of a variable)• interpret and evaluate mathematical expressions using parentheses• use and interpret formulas (e.g., $\text{Area} = \text{Length} \times \text{Width}$ or $A = L \times W$) to answer questions about quantities and their relationships	60J, 100A–100B, 100–101, 166A–166B, 166–167, 191, 195, 263, 288, 373, 383, 389, 396A–396B, 396–400, 688A–688B, 688–689, 690A–690B, 690–691 96A–96B, 96–97, 160A–160B, 160–161 465, 469, 476A–476B, 476–477	

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Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
B. Represent and analyze mathematical situations and structures using algebraic symbols.	1. Identify symbols and letters that represent the concept of a variable as an unknown quantity.	98A–98B, 98–101, 160A–160B, 160–163, 166A–166B, 166–167, 396A–396B, 396–399, 688A–688B, 688–689, 690A–690B, 690–691, 692A–692B, 692–695	
	2. Explore the uses of properties (commutative, distributive, associative) in the computation of whole numbers.	62B, 62, 129–131, 132, 134, 288A–288B, 288–289	
	3. Express mathematical relationships using equations.	60J, 100A–100B, 100–101, 166A–166B, 166–167, 191, 195, 263, 288, 373, 383, 389, 396A–396B, 396–400, 688A–688B, 688–689, 690A–690B, 690–691	
	4. Determine the value of variables in simple equations (e.g., $80 \times 15 = 40 \times []$).	100A–100B, 100–101, 166A–166B, 166–167, 690A–690B, 690–691, 692A–692B, 692–694	
	5. Develop simple formulas in exploring quantities and their relationships (e.g., $A = L \times W$).	465, 469, 476A–476B, 476–477	
C. Use mathematical models to represent and understand quantitative relationships.	1. Solve problems involving proportional relationships (including unit pricing and map interpretations; e.g., one inch = five miles; therefore, five inches = [] miles).	See Grade 5.	
	2. Model problem situations and use graphs, tables, pictures, and equations to draw conclusions (e.g., different patterns of change).	90A–90B, 90–91, 128A–128B, 128–131, 136A–136B, 136–137, 139, 140A–140B, 140–142, 686J, 692A–692B, 692–695	
	3. Use and interpret formulas (e.g., $\text{Area} = \text{Length} \times \text{Width}$ or $A = L \times W$) to answer questions about quantities and their relationships.	465, 469, 476A–476B, 476–477	

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Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
D. Analyze changes in various contexts.	1. Identify and describe situations with constant or varying rates of change and compare them.	216A–216B, 216–219	
	2. Determine how a change in one variable relates to a change in a second variable (e.g., data tables, input–output machines).	136, 140A–140B, 140–141, 142, 256, 366A–366B, 366–367, 406A–406B, 406–407	
	3. Find and analyze patterns using data tables (e.g., T tables).	140A–140B, 140–142, 164A–164B, 164–165, 366A–366B, 366–367	
	4. Demonstrate and describe varying rates of change in relation to real-world situations (e.g., plant growth, students' heights).	216A–216B, 216–219	

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Mathematics Grade 4

Standard 3: GEOMETRY: Students will understand geometric concepts and applications.

Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
A. Analyze characteristics and properties of two-and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.	1. Identify, compare, and analyze attributes of two-and three-dimensional shapes and develop vocabulary to describe the attributes: <ul style="list-style-type: none">• build, draw, create, and describe geometric objects• identify lines that are parallel or perpendicular• identify and compare congruent and similar figures	435–437, 443, 448, 452 440A–440B, 441, 442 453–434	
	2. Classify two-and three-dimensional shapes according to their properties and develop definitions of classes like triangles and pyramids: <ul style="list-style-type: none">• visualize, describe, and make models of geometric solids in terms of the number of faces, edges, and vertices• interpret two-dimensional representations of three-dimensional objects	434–437, 438–439, 440–444, 445, 446, 448–449, 452–455, 456 435, 437	
	3. Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions.	434–437, 438, 440–443, 444–447, 448–449	

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Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	1. Describe location and movement using common language and geometric vocabulary.	212A–212B, 212–215, 692A–692B, 692–695	
	2. Use ordered pairs to graph, locate, identify points, and describe paths in the first quadrant of the coordinate plane.	212A–212B, 212–215, 692A–692B, 692–695	
	3. Use a variety of methods for measuring distances between locations on a grid.	212A–212B, 212–215, 692A–692B, 692–695	
C. Apply transformations and use symmetry to analyze mathematical situations.	1. Create and describe rotational designs using language of transformational symmetry.	452A–452B, 452–455	
	2. Describe a motion or set of motions that will show that two shapes are congruent.	452A–452B, 452–455	
D. Use visualization, spatial reasoning, and geometric modeling to solve problems.	1. Develop and use mental images of geometric shapes to solve problems (e.g., represent three-dimensional shapes in two dimensions).	434–437, 438–439, 440–444, 445, 446, 448–449, 452–455, 456	
	2. Use geometric models such as number lines, arrays, and computer simulations to investigate number relationships (e.g., patterns).	432J, 455	
	3. Explore relationships involving perimeter and area: <ul style="list-style-type: none">• measure area of rectangular shapes and use appropriate units• recognize that area can have the same perimeter but different areas and vice versa• use models and formulas to solve problems involving perimeter and area of rectangles and squares (e.g., arrays)	469 470–471 469	

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Mathematics Grade 4

Standard 4: MEASUREMENT: Students will understand measurement systems and applications.

Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
A. Understand measurable attributes of objects and the units, systems, and process of measurement.	1. Select the appropriate type of unit for measuring perimeter and size of an angle.	443, 468–471	
	2. Understand the need for measuring with standard units and become familiar with the standard units in customary and metric system.	588A–588B, 588–589, 592A–592B, 592–593, 594A–594B, 594–595, 596A–596B, 596–599, 652A–652B, 652–653, 654A–654B, 654–655, 656A–656B, 656–657, 658A–658B, 658–660, 664A–664B, 664–665	
	3. Identify the inverse relationship between the size of the units and the number of units.	Related content: 588A–588B, 588–589, 592A–592B, 592–593, 594A–594B, 594–595, 596A–596B, 596–599, 652A–652B, 652–653, 654A–654B, 654–655, 656A–656B, 656–657, 658A–658B, 658–660	
	4. Develop formulas to determine the surface areas of rectangular solids.	471	
	5. Develop, understand, and use formulas to find the area of rectangles and related triangles and parallelograms.	468A–468B, 468–471	
	6. Carry out simple conversions within a system of measurement (e.g., hours to minutes, meters to centimeters).	560J, 588A–588B, 588–589, 590A–590B, 590–591, 592A–592B, 592–593, 594A–594B, 594–595, 596A–596B, 596–599, 652A–652B, 652–653, 654A–654B, 654–655, 656A–656B, 656–657, 658A–658B, 658–661, 664A–664B, 664–665	

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Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
B. Apply appropriate techniques, tools, and formulas to determine measurements.	1. Estimate perimeters, areas of rectangles, triangles, and irregular shapes.	464A–464B, 464–466, 471	
	2. Find the area of rectangles, related triangles, and parallelograms.	468A–468B, 468–471	
	3. Estimate, measure, and solve problems involving length, area, mass, time, and temperature using appropriate standard units and tools.	190A–190B, 190–191, 192A–192B, 192–195, 196A–196B, 196–197, 198A–198B, 198–199, 468A–468B, 468–471, 588A–588B, 588–589, 652A–652B, 652–653, 656A–656B, 656–657, 664A–664B, 664–665	
	4. Identify common measurements of turns (e.g., 360 degrees in one turn, 90 degrees in a quarter–turn).	455	
	5. Compute elapsed time and make and interpret schedules.	196A–196B, 196–197	
	6. Use tools to measure angles (e.g., protractor, compass).	443	

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Mathematics Grade 4

Standard 5: DATA ANALYSIS AND PROBABILITY: Students will understand how to formulate questions, analyze data, and determine probabilities.

Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	1. Organize, represent, and interpret numerical and categorical data and clearly communicate findings: <ul style="list-style-type: none">choose and construct representations that are appropriate for the data setrecognize the differences in representing categorical and numerical data.	138–139, 140A–140B, 140–142, 204A–204B, 204–205, 206A–206B, 206–207, 208A–208B, 208–211, 222A–222B, 222–223, 230A–230B, 230–231, This standard can be developed from these lessons. 138–139, 216A–216B, 216–219, 220–221, 222A–222B, 222–223	
	2. Design investigations and represent data using tables and graphs (e.g., line plots, bar graphs, line graphs).	188J, 204A–204B, 204–205, 206A–206B, 206–207, 208A–208B, 208–211, 216A–216B, 216–219, 220–221, 222A–222B, 222–223, 226A–226B, 226–229, 230A–230B, 230–231, 232–233, 405	
B. Select and use appropriate statistical methods to analyze data.	1. Compare and describe related data sets.	Related content: 208A–208B, 208–211	
	2. Use the concepts of median, mode, maximum, minimum, and range and draw conclusions about a data set.	226A–226B, 226–229	

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Benchmark	Performance Standards	Publisher Citation (pages)	% Meets Standard*
	3. Use data analysis to make reasonable inferences/predictions and to develop convincing arguments from data described in a variety of formats (e.g. bar graphs, Venn diagrams, charts, tables, line graphs, and pictographs).	206, 207, 208, 209, 210, 211, 218, 219, 220, 222, 223, 232, 233	
C. Develop and evaluate inferences and predictions that are based on data.	1. Propose and justify conclusions and predictions based on data.	206, 207, 208, 209, 210, 211, 218, 219, 220, 222, 223, 232, 233, 710A–710B, 710–711	
	2. Develop convincing arguments from data displayed in a variety of formats.	206, 207, 208, 209, 210, 211, 218, 219, 220, 222, 223, 232, 233, 710A–710B, 710–711	
D. Understand and apply basic concepts of probability.	1. Describe events as “likely,” “unlikely,” or “impossible” and quantify simple probability situations: <ul style="list-style-type: none">represent all possible outcomes for a simple probability situation in an organized way (e.g., tables, grids, tree diagrams)express outcomes of experimental probability situations verbally and numerically (e.g., three out of four, $\frac{3}{4}$)	686J, 704A–704B, 704–705, 706A–706B, 706–709, 710A–710B, 710–711 700A–700B, 700–702, 706A–706B, 706–718	
	2. List all the possible combinations of objects from three sets (e.g., spinners, number of outfits from three different shirts, two skirts, and two hats).	See Grade 5.	

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