



Math Teachers Press, Inc.

4850 Park Glen Road, Minneapolis, MN 55416
 phone (800) 852-2435 fax (952) 546-7502

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NEW MEXICO MATHEMATICS CONTENT STANDARDS CORRELATED TO *MOVING ALGEBRA GRADE 8*

	Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
STANDARD 1: NUMBER AND OPERATION		
Students will understand numerical concepts and mathematical operations.		
A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.		
1. Sort numbers by their properties (e.g., prime, composite, square, square root).	16, 17, 20, 21 SB: 13, 15	215-217, 304, 305 SB: 184, 185, 233
2. Demonstrate the magnitude of rational numbers (e.g., trillions to millions).	2, 4-7 SB: 2-4	
B. Understand the meaning of operations and how they relate to one another.		
1. Use real number properties (e.g., commutative, associative, distributive) to perform various computational procedures.	10-15 SB: 9-12	263, 264, 290-293, 298 SB: 209, 210, 226-228
2. Perform arithmetic operations and their inverses (e.g., addition/subtraction, multiplication/division, square roots of perfect squares, cube roots of perfect cubes) on real numbers.	26-29, 34-40, 42-51, 68-78, 87, 93-102, 107-115, 123-127, 143, 144, 147-157 SB: 19-24, 29-41, 56-60, 66, 73-83, 89-99, 103, 117, 118, 120-123, 125-127, 141-143	215, 216 SB: 184
3. Find roots of real numbers using calculators.		
C. Compute fluently and make reasonable estimates.		

		Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
1.	Formulate algebraic expressions that include real numbers to describe and solve real-world problems.	55, 58, 59, 116, 159, 160 SB: 45, 46, 51-53, 101, 129	249-252, 257, 258, 260, 261, 263, 264, 266-268, 273, 274, 276, 277, 279, 280 SB: 207, 208, 217, 218, 222-224
2.	Use a variety of computational methods to estimate quantities involving real numbers.	30, 31, 41, 52, 53, 91, 103, 104, 117, 158, 172 (plus all problem solving pages) SB: 25, 26, 42, 43, 84-86, 100, 124, 135	
3.	Differentiate between rational and irrational numbers.	80	209 SB: 177
4.	Use real number properties to perform various computational procedures and explain how they were used.	26-29, 34-40, 42-51, 68-78, 87, 93-102, 107-115, 123-127, 143, 144, 147-157 SB: 19-24, 29-41, 56-60, 66, 73-83, 89-99, 103, 117, 118, 120-123, 125-127, 141-143	
5.	Perform and explain computations with rational numbers, pi, and first-degree algebraic expressions in one variable in a variety of situations.	26-29, 34-40, 42-51, 68-78, 87, 93-102, 107-115, 123-127, 143, 144, 147-157 SB: 19-24, 29-41, 56-60, 66, 73-83, 89-99, 103, 117, 118, 120-123, 125-127, 141-143	Throughout

	Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
6. Select and use appropriate forms of rational numbers to solve real-world problems including those involving proportional relationships.	32-34, 54, 55, 58, 59, 78, 105, 106, 116, 118, 119, 145, 146, 159, 160 SB: 27, 28, 44-46, 51-53, 87, 88, 101, 119, 128, 129	222, 225-227, 249-252, 257, 258, 260, 261, 263, 264, 266-268, 273, 275-280 SB: 187-189, 191, 192, 207, 208, 217, 218, 222-224, 246
7. Approximate, mentally and with calculators, the value of irrational numbers as they arise from problem situations.		
8. Express numbers in scientific notation (including negative exponents) in appropriate problem situations using a calculator.	22, 23, 25 SB: 17, 18	212-214 SB: 180-182
9. Estimate answers and use formulas to solve application problems involving surface area and volume.		
STANDARD 2: ALGEBRA		
Students will understand algebraic concepts and applications.		
A. Understand patterns, relations, and functions.		
1. Move between numerical, tabular, and graphical representations of linear relationships.		198, 199, 231-234, 307, 309, 311-317 SB: 166, 196, 197, 234-239, 254
2. Use variables to generalize patterns and information presented in tables, charts, and graphs:		317, 322, 327, 328 SB: 243
<ul style="list-style-type: none"> graph linear functions noting that the vertical change per unit of horizontal change (the slope of the graph) is always the same 		232, 312-314, 316, 317, 320-322, 324, 326, 327 SB: 197, 236-239, 241-243, 249, 254
<ul style="list-style-type: none"> plot the values of quantities whose ratios are always the same, fit a line to the plot, and understand that the slope of the line equals the quantities. 		322, 324, 332 SB: 242

	Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
B. Represent and analyze mathematical situations and structures using algebraic symbols.		
1. Demonstrate the difference between an equation and an expression.		251-254, 262-265 SB: 207-211
2. Solve two-step linear equations and inequalities in one variable with rational solutions.		260, 261, 281, 285-287 SB: 216-218, 225, 245
3. Evaluate formulas using substitution.		
4. Demonstrate understanding of the relationships between ratios, proportions, and percents and solve for a missing term in a proportion.	122, 140-142, 161-168, 169-179 SB: 102, 115, 116, 130-134, 136-138, 145	220-222, 225-227, 275-278 SB: 187-189, 191, 192, 222, 223, 246
5. Graph solution sets of linear equations in two variables on the coordinate plane.		
6. Formulate and solve problems involving simple linear relationships, find percents of a given number, variable situations, and unknown quantities.	169-171, 173-179 SB: 133, 134, 136-138	
7. Use symbols, variables, expressions, inequalities, equations, and simple systems of equations to represent problem situations that involve variables or unknown quantities.	55, 58, 59, 116, 159, 160 SB: 45, 46, 51-53, 101, 129	249-252, 254-261, 281-287 SB: 207, 208, 217, 218, 225, 245
C. Use mathematical models to represent and understand quantitative relationships.		
1. Generate different representations to model a specific numerical relationship given one representation of data (e.g., a table, a graph, an equation, a verbal description).		231-234, 311-317, 324-328, 332, 333 SB: 196, 197, 236-239, 243, 249, 254
D. Analyze changes in various contexts.		
1. Use graphs, tables, and algebraic representations to make predictions and solve problems that involve change.		231-234, 311-317 SB: 196, 197, 236-239, 254
2. Estimate, find, and justify solutions to problems that involve change using tables, graphs, and algebraic expressions.		

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3. Use appropriate problem-solving strategies (e.g., drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, or graph, working a simpler problem, writing an algebraic expression or working backward) to solve problems that involve change.		231-234, 311-317 SB: 196, 197, 236-239, 254
4. Solve multi-step problems that involve changes in rate, average speed, distance, and time.		276-280 SB: 224
5. Analyze problems that involve change by identifying relationships distinguishing relevant from irrelevant information, identifying missing information, sequencing, and observing patterns.		231-234, 275, 311-317 SB: 196, 197, 236-239, 254
6. Generalize a pattern of change using algebra and show the relationship among the equation, graph, and table of values.		231-234, 311-317, 324-328, 332, 333 SB: 196, 197, 236-239, 243, 249, 254
7. Recognize the same general pattern of change presented in different representations.		231-234, 311-317, 324-328, 332, 333 SB: 196, 197, 236-239, 243, 249, 254
STANDARD 3: GEOMETRY		
Students will understand geometric concepts and applications.		
A.. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematics arguments about geometric relationships.		
1. Recognize, classify, and discuss properties of all geometric figures including point, line, and plane.		182-195 SB: 147-163
2. Identify arc, chord, and semi-circle and explain their attributes.		183 SB: 149
3. Use the Pythagorean theorem and its converse to find the missing side of a right triangle and the lengths of the other line segments.		218, 219 SB: 186
B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.		

	Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
1. Represent, formulate, and solve distance and geometry problems using the language and symbols of algebra and the coordinate plane and space (e.g., ordered triplets).		201, 202, 310 SB: 168, 248
C. Apply transformations and use symmetry to analyze mathematical situations.		
1. Describe the symmetry of three-dimensional figures.		
2. Describe and perform single and multiple transformations that include rotation, reflection, translation, and dilation (i.e., shrink or magnify) to two-dimensional figures.		204, 223, 224 SB: 171, 172
D. Use visualization, spatial reasoning, and geometric modeling to solve problems.		
1. Understand angle relationships formed by parallel lines cut by a transversal.		200 SB: 167
2. Recognize and apply properties of corresponding parts of similar and congruent triangles and quadrilaterals.		203, 225 SB: 170, 189
3. Represent and solve problems relating to size, shape, area, and volume using geometric models.		183, 185, 194-200, 206-214 SB: 149, 154, 163-167, 174, 175, 178
4. Develop and use formulas for area, perimeter, circumference, and volume.		207-214 SB: 176, 177, 179-183
5. Construct two-dimensional patterns for three-dimensional models (e.g., cylinders, prisms, cones).		193, 212 SB: 161, 162
STANDARD 4: MEASUREMENT		
Students will understand measurement systems and applications.		
A. Understand measurable attributes of objects and the units, systems, and processes of measurement.		
1. Understand the concept of volume and use the appropriate units in common measuring systems (e.g., cubic centimeter, cubic inch, cubic yard) to compute the volume of rectangular solids.		212-214 SB: 180-182
2. Use changes in measurement units (e.g., square inches, cubic feet) to perform conversions from one-, two-, and three-dimensional shapes.		211 SB: 181

		Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
B. Apply appropriate techniques, tools, and formulas to determine measurements.			
1 Use ratios and proportions to measure hard-to-measure objects.			225-227 SB: 189, 191, 192
2. Use estimation to solve problems.		30-34, 41, 52-55, 58, 59, 91, 103-106, 116-119, 145, 146, 158-160, 172 SB: 25-28, 42-46, 51-53, 84-88, 100, 101, 119, 124, 128, 129, 135	
3. Use proportional relationships in similar shapes to find missing measurements.			225 SB: 189
4. Apply strategies to determine the surface area and volume of prisms, pyramids, and cylinders.			214 SB: 181
5. Perform conversions with multiple terms between metric and U.S. standard measurement systems.			
6. Estimate volume in cubic units.			
7. Solve simple problems involving rates and derived measurements for such properties as velocity and density.			234, 275-280 SB: 222-224, 246
STANDARD 5: DATA ANALYSIS AND PROBABILITY			
Students will understand how to formulate questions, analyze data, and determine probabilities.			
A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.			
1. Represent two numerical variables on a plot, describe how the data points are distributed, and identify relationships that exist between the two variables.			
2. Generate, organize, and interpret real numbers in a variety of situations.		Throughout	
3. Organize, analyze, and display appropriate quantitative and qualitative data to address specific questions including:			
• frequency distributions			
• plots			
• histograms			

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	<ul style="list-style-type: none"> • bar, line, and pie graphs 	179 SB: 101	
	<ul style="list-style-type: none"> • diagram and pictorial displays 		Throughout
	<ul style="list-style-type: none"> • charts and tables 		Throughout
4.	Select the appropriate measure of central tendency to describe a set of data for a particular problem situation.	56, 57 SB: 47-50	
5.	Simulate an event selecting and using different models.		
6.	Develop an appropriate strategy using a variety of data from surveys, samplings, estimations, and inferences to address a specific problem.		
	B. Select and use appropriate statistical methods to analyze data.		
1.	Use changes in scales, intervals, or categories to help support a particular interpretation of data.		
2.	Generate, organize, and interpret real number and other data in a variety of situations.	Throughout	
3.	Analyze data to make decisions and to develop convincing arguments from data displayed in a variety of formats that include:		
	<ul style="list-style-type: none"> • plots • distributions • graphs • scatter plots • diagrams • pictorial displays • charts and tables • Venn diagrams 		
		80, 87	
4.	Interpret and analyze data from graphical representations and draw simple conclusions (e.g., line of best fit).		
5.	Evaluate and defend the reasonableness of conclusions drawn from data analysis.		
6.	Use appropriate central tendency and spread as a means for effective decision-making in analyzing data and outliers.		
7.	Identify simple graphic misrepresentations and distortions of sets of data (e.g., unequal interval sizes, omission of parts of axis range, scaling).		
8.	Use appropriate technology to display data as lists, tables, matrices, graphs, and plots and to analyze the relationships of variables in the data displayed.		

	Part A Student Book Skill Builders (SB)	Part B Student Book Skill Builders (SB)
C. Develop and evaluate inferences and predictions that are based on data.		
1. Describe how changes in scale, intervals, or categories influence arguments for a particular interpretation of the data.		
2. Describe how reader bias, measurement errors, and display distortion can affect the interpretation of data, predictions, and inferences based on data.		
3. Conduct simple experiments and/or simulations, record results in charts, tables, or graphs, and use the results to draw conclusions and make predictions.		
4. Compare expected results with experimental results and information used in predictions and inferences.		
D. Understand and apply basic concepts of probability.		
1. Calculate the odds of a desired outcome in a simple experiment.		
2. Design and use an appropriate simulation to estimate the probability of a real-world event (e.g., disk toss, cube toss).		
3. Explain the relationship between probability and odds and calculate the odds of a desired outcome in a simple experiment.		
4. Use theoretical or experimental probability to make predictions about real-world events.		
5. Use probability to generate convincing arguments, draw conclusions, and make decisions in a variety of situations.		
6. Understand that the probability of two unrelated events occurring is the sum of the two individual possibilities and that the probability of one event following another, in independent trials, is the product of the two probabilities.		