



# Math Teachers Press, Inc.

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## NEW MEXICO MATHEMATICS CONTENT STANDARDS CORRELATED TO *MOVING ALGEBRA GRADE 7*

|   | Part A<br>Student Book  | Part A<br>Skill Builders (SB) |
|---|---|-------------------------------|
| <b>STANDARD 1: NUMBER AND OPERATION</b>   |   |                               |
| Students will understand numerical concepts and mathematical operations.  |   |                               |
| <b>A. Understand numbers, ways of representing numbers, relationships among numbers, and number systems.</b>  |   |                               |
| <b>1.</b> Determine the absolute value of rational numbers.   |   | 242, 243<br><b>SB:</b> 201    |
| <b>2.</b> Illustrate the relationships among natural (i.e., counting) numbers, whole numbers, integers, rational and irrational numbers.                                  | 62, 63, 80<br><b>SB:</b> 61   |                               |
| <b>3.</b> Use properties of the real-number system to explain reasoning and to formulate and solve real-world problems.   | 10-15, 32-34, 54, 55, 58, 59, 105, 106, 116, 118, 119, 145, 146, 159, 160<br><b>SB:</b> 9-12, 27, 28, 44-46, 51-53, 87, 88 101, 119, 128, 129 |                               |
| <b>4.</b> Read, write, and compare rational numbers in scientific notation (e.g., positive and negative powers of 10) with approximate numbers using scientific notation. | 22, 23, 25<br><b>SB:</b> 17, 18   |                               |
| <b>5.</b> Simplify numerical expressions using order of operations.   | 14<br><b>SB:</b> 11   | 290-293<br><b>SB:</b> 226-228 |
| <b>B. Understand the meaning of operations and how they relate to one another.</b>  |   |                               |

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|-----------|---|--|--|
| <b>1.</b> | Add, subtract, multiply and divide rational numbers (e.g., integers, fractions, terminating decimals) and take positive rational numbers to whole-number powers.          | 16-19, 26-29, 34-40, 42-51, 68-78, 87, 93-102, 107-115, 123-127, 143, 144, 147-157<br><b>SB:</b> 13, 14, 19-24, 29-41, 56-60, 66, 73-83, 89-99, 103, 117, 118, 120-123, 125-127, 141-143 | 215, 244-248, 294, 295, 301<br><b>SB:</b> 202-206, 229, 247, 252 |
| <b>2.</b> | Convert terminating decimals into reduced fractions.  | 134, 167<br><b>SB:</b> 116   |  |
| <b>3.</b> | Calculate given percentages of quantities and use them to solve problems (e.g., discounts of sales, interest earned, tips, markups, commission, profit, simple interest). | 169-171, 173-179<br><b>SB:</b> 133, 134, 136-138   |  |
| <b>4.</b> | Add and subtract fractions with unlike denominators.  | 97-102<br><b>SB:</b> 79-83, 103  |  |
| <b>5.</b> | Multiply, divide, and simplify rational numbers by using exponent rules.  | 18, 19<br><b>SB:</b> 14  | 296, 297, 299, 300, 302, 303<br><b>SB:</b> 230-232               |
| <b>6.</b> | Understand the meaning of the absolute value of a number:   |  | 242, 243<br><b>SB:</b> 201                                       |
|           | • interpret the absolute value as the distance of the number from zero on a number line   |  | 242<br><b>SB:</b> 201  |
|           | • determine the absolute value of real numbers  |  | 243<br><b>SB:</b> 201  |
| <b>7.</b> | Find square roots of perfect whole-number squares.  |  | 216, 304, 305<br><b>SB:</b> 184, 233                             |
| <b>8.</b> | Simplify and evaluate positive rational numbers raised to positive whole number powers.   | 16,17<br><b>SB:</b> 13   | 294, 296, 297, 301<br><b>SB:</b> 229, 247                        |
| <b>9.</b> | Solve addition, subtraction, multiplication, and division problems that use positive and negative integers and combinations of these operations.                          | 68-78<br><b>SB:</b> 56-60  | 244-248<br><b>SB:</b> 202-206                                    |
|           |   |  |  |
| <b>C.</b> | <b>Compute fluently and make reasonable estimates.</b>  |  |  |

|  |   | <b>Part A<br/>Student Book</b>  | <b>Part A<br/>Skill Builders (SB)</b>                            |
|--|---|---|--|
| 1.   | Use estimation to check reasonableness of results, and use this information to make predictions in situations involving rational numbers, $\pi$ , and simple algebraic equations.       | 30-34, 41, 52-55, 91, 103-106, 117-119, 145, 146, 158-160, 172<br><b>SB:</b> 25-28, 42-46, 52, 53, 84-88, 100, 101, 119, 124, 128, 129, 135 |  |
| 2.   | Convert fractions to decimals and percents and use these representations in estimations, computations, and applications   | 134, 140-142, 162, 165-168, 171-179<br><b>SB:</b> 110, 115, 116, 132, 134-138, 145  |  |
| 3.   | Read, write, and compare rational numbers in scientific notation (e.g., positive and negative powers of 10) with approximate numbers using scientific notation.                         | 22, 23, 25<br><b>SB:</b> 17, 18   |  |
| 4.   | Calculate the percentage of increases and decreases of a quantity.  |   |  |
| 5.   | Add and subtract fractions with unlike denominators.  | 97-102<br><b>SB:</b> 79-83, 103   |  |
| 6.   | Use the inverse relationship between raising to a power and extracting the root of a perfect square integer.  |   | 216, 304, 305<br><b>SB:</b> 184, 233                             |
| <b>STANDARD 2: ALGEBRA</b>   |   |   |  |
| <b>Students will understand algebraic concepts and applications.</b> |   |   |  |
| <b>A. Understand patterns, relations, and functions.</b>             |   |   |  |
| 1.   | Identify and continue patterns presented in a variety of formats.   | 16, 17, 102, 85, 86, 122<br><b>SB:</b> 13   | 199, 307-309<br><b>SB:</b> 166, 234, 235                         |
| 2.   | Represent a variety of relationships using tables, graphs, verbal rules, and possible symbolic notation, and recognize the same general pattern presented in different representations. |   | 231-234, 311-317, 332, 333<br><b>SB:</b> 196, 197, 236-239, 254  |
| 3.   | Simplify numerical expressions by applying properties of rational numbers, and justify the process used.  | 10-13, 15<br><b>SB:</b> 9, 10, 12   | 268, 290-293<br><b>SB:</b> 226-228                               |
| 4.   | Interpret and evaluate expressions involving integer powers and simple roots.   | 16-19<br><b>SB:</b> 13, 14  | 292-305<br><b>SB:</b> 228-233, 247, 252                          |
| 5.   | Graph and interpret linear functions.   |   | 231, 232, 311-317, 332, 333<br><b>SB:</b> 196, 197, 236-239, 254 |

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| 6.        | Solve problems involving rate, average speed, distance, and time.  |                                   | 275-280<br><b>SB:</b> 222-224, 246  |
|           |  |                                   |   |
| <b>B.</b> | <b>Represent and analyze mathematical situations and structures using algebraic symbols.</b>   |                                   |   |
| 1.        | Write verbal expressions and sentences as algebraic expressions and equations:   |                                   | 249-252<br><b>SB:</b> 207, 208  |
|           | <ul style="list-style-type: none"> <li>evaluate algebraic expressions</li> </ul>   |                                   | 262-265, 268, 269, 303<br><b>SB:</b> 209, 210, 220  |
|           | <ul style="list-style-type: none"> <li>solve simple linear equations</li> </ul>  |                                   | 253-261, 266, 267, 270-272, 281<br><b>SB:</b> 211-219, 221, 250, 251                                    |
|           | <ul style="list-style-type: none"> <li>graph and interpret results</li> </ul>  |                                   | 231, 232, 311-317, 332, 333<br><b>SB:</b> 196, 197, 236-239, 254  |
| 2.        | Use variables and appropriate operations to write an expression, an equation, or an inequality that represents a verbal description. |                                   | 249-252, 256-258, 260, 261, 263, 264, 267, 273, 274<br><b>SB:</b> 207, 208, 217, 218, 225, 237          |
| 3.        | Use the order of operations to evaluate algebraic expressions.   | 14<br><b>SB:</b> 11               | 249-252, 256-258, 260, 261, 263, 264, 267, 273, 274, 282-287<br><b>SB:</b> 207, 208, 217, 218, 225, 237 |
| 4.        | Simplify numerical expressions by applying properties of rational numbers.   | 10-13, 15<br><b>SB:</b> 9, 10, 12 | 268, 290-293<br><b>SB:</b> 226-228  |
| 5.        | Graph linear functions and identify slope as positive or negative.   |                                   | 231, 232, 311-317, 320, 321<br><b>SB:</b> 196, 197, 236-239, 241, 254                                   |
| 6.        | use letters as variables in mathematical expressions to describe how one quantity changes when a related quantity changes.           |                                   | 231-234, 311-317, 332, 333<br><b>SB:</b> 196, 197, 236-239, 254   |
|           |  |                                   |   |

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|---|-------------------------|---|
| <b>C. Use mathematical models to represent and understand quantitative relationships.</b>   |                         |   |
| 1. Create scale models and use them for dimensional drawings.   |                         |   |
| 2. Understand and use the coordinate plane to graph ordered pairs and linear equations.   |                         | 201, 202, 310,<br>312-314, 316,<br>317, 332, 333<br><b>SB:</b> 168, 236-239,<br>254 |
| 3. Select and use an appropriate model for a particular situation.  |                         | Throughout  |
|   |                         |   |
| <b>D. Analyze changes in various contexts.</b>  |                         |   |
| 1. Use variables and appropriate operations to write an expression, an equation, and/or an inequality that represents a verbal description involving change.  |                         | 311-317, 332,<br>333<br><b>SB:</b> 236-239, 254                                     |
| 2. Interpret and evaluate expressions involving integer powers and simple roots as they relate to change.   | 16, 17<br><b>SB:</b> 13 |   |
| 3. Graph and interpret linear functions as they are used to solve problems.   |                         | 232, 312, 317,<br>332, 333<br><b>SB:</b> 197, 236-239                               |
| 4. Solve two-step equations and inequalities with one variable over the rational numbers, interpret the solution or solutions in the context from which they arose, and verify the reasonableness of the results. |                         | 260, 261, 274,<br>285-287<br><b>SB:</b> 216-218, 225,<br>245                        |
|   |                         |   |
| <b>STANDARD 3: GEOMETRY</b>   |                         |   |
| <b>Students will understand geometric concepts and applications.</b>  |                         |   |
| <b>A. Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematics arguments about geometric relationships.</b>  |                         |   |
| 1. Classify geometric figures as similar or congruent.  |                         | 203, 223-225<br><b>SB:</b> 170, 189, 190  |
| 2. Understand the concept of a constant (e.g., pi) and use the formulas for the circumference and area of a circle.   |                         | 209, 214<br><b>SB:</b> 177  |
| 3. Explain and use the Pythagorean Theorem.   |                         | 218, 219<br><b>SB:</b> 186  |
| 4. Determine the radius, diameter, and circumference of a circle and explain their relationship.  |                         | 183, 209<br><b>SB:</b> 149, 177   |
| 5. Use properties to classify solids including pyramids, cones, prisms, and cylinders.  |                         | 192, 193<br><b>SB:</b> 161, 162   |
|   |                         |   |

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|---|--|------------------------|---|
| <b>B. Specify locations and describe spatial relationships using coordinate geometry and other representational systems.</b>  |  |                        |   |
| 1. Construct and use coordinate graphs to plot simple figures, determine lengths and areas related to them, and determine the image under translations and reflections.                                 |  |                        | 201 202, 204,<br>310<br><b>SB:</b> 168, 171, 248  |
| <b>C. Apply transformations and use symmetry to analyze mathematical situations.</b>  |  |                        | 204, 205<br><b>SB:</b> 171-173                    |
| 1. Determine how perimeter and area are affected by changes of scale.   |  |                        | <b>SB:</b> 183                                    |
| <b>D. Use visualization, spatial reasoning, and geometric modeling to solve problems.</b>   |  |                        |   |
| 1. Compute the perimeter and area of common geometric shapes and use the results to find measures of less common objects.   |  |                        | 206-211<br><b>SB:</b> 174-179, 183                |
| 2. Identify and describe the properties of two-dimensional figures:   |  |                        | 182-191, 200<br><b>SB:</b> 147-160, 167           |
| <ul style="list-style-type: none"> <li>identify angles as vertical, adjacent, complementary, or supplementary and provide descriptions of these terms.</li> </ul>                                       |  |                        | 194, 195<br><b>SB:</b> 163                        |
| <ul style="list-style-type: none"> <li>use the properties of complementary and supplementary angles and the sum of the angles of a triangle to solve the problems involving an unknown angle</li> </ul> |  |                        | 194-197<br><b>SB:</b> 163-165                     |
| <ul style="list-style-type: none"> <li>draw quadrilaterals and triangles from given information</li> </ul>  |  |                        | 188-191, 223,<br>224<br><b>SB:</b> 156, 158       |
| <b>STANDARD 4: MEASUREMENT</b>  |  |                        |   |
| <b>Students will understand measurement systems and applications.</b>   |  |                        |   |
| <b>A. Understand measurable attributes of objects and the units, systems, and processes of measurement.</b>   |  |                        |   |
| 1. Choose appropriate units of measure and ratios to recognize new equivalences (e.g., 1 square yard equals 9 square feet) to solve problems.   |  |                        | 211, 231-234<br><b>SB:</b> 181, 198, 199          |
| 2. Select and use the appropriate size and type of unit for a given measurement situation.  |  |                        | 229, 234<br><b>SB:</b> 198, 199                   |
| 3. Compare masses, weights, capacities, geometric measures, times, and temperatures within measurement systems.   |  |                        | 225, 233, 234,<br>316<br><b>SB:</b> 189, 198, 199 |

|  |   | <b>Part A<br/>Student Book</b> | <b>Part A<br/>Skill Builders (SB)</b>                |
|--|---|--------------------------------|--|
| 4.   | Approximate the relationship between standard and metric measurement systems (e.g., inches and centimeters, pounds and kilograms, quarts and liters).                 |                                |  |
| 5.   | use measures expressed as rates and measures expressed as products to solve problems, check the units of the solutions, and analyze the reasonableness of the answer. |                                | 210-214, 275-280<br><b>SB:</b> 179-181, 222-224, 246 |
| <b>B. Apply appropriate techniques, tools, and formulas to determine measurements.</b>   |   |                                |  |
| 1.   | Apply strategies and formulas to find missing angle measurements in triangles and quadrilaterals.   |                                | 196-199<br><b>SB:</b> 164-166                        |
| 2.   | Select and use formulas to determine the circumference of circles, and the area of triangles, parallelograms, trapezoids, and circles.                                |                                | 209, 214<br><b>SB:</b> 177, 181                      |
| 3.   | Solve problems involving scale factors, ratios, and proportions.  |                                | 222, 225-227<br><b>SB:</b> 187-189, 191, 192         |
| <b>STANDARD 5: DATA ANALYSIS AND PROBABILITY</b>   |   |                                |  |
| <b>Students will understand how to formulate questions, analyze data, and determine probabilities.</b>                         |   |                                |  |
| <b>A. Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.</b> |   |                                |  |
| 1.   | Describe how data representations influences interpretation.  |                                |  |
| 2.   | Select and use appropriate representation for presenting collected data and justify the selection.  |                                |  |
| 3.   | Use measures of central tendency and spread to describe a set of data.  | 56, 57<br><b>SB:</b> 47-50     |  |
| 4.   | Choose between median and mode to describe a set of data and justify the choice for a particular situation.   |                                |  |
| 5.   | Determine the quartiles of a data set.  |                                |  |
| 6.   | Identify ordered pairs of data from a graph and interpret the data in terms of the situation depicted by the graph.   |                                |  |
| 7.   | Use various scales and formats to display the same data set.  |                                |  |
| 8.   | Identify and explain the misleading representations of data.  |                                |  |
| 9.   | Collect, organize, and represent data sets that have one or more variables and identify relationships among variables within a data set.                              |                                |  |

|   |   | Part A<br>Student Book                                       | Part A<br>Skill Builders (SB)    |
|---|---|--|----------------------------------|
| 10.   | Compute the minimum, lower quartile, median, upper quartile, and maximum of a data set.   |  |                                  |
| 11.   | Identify and explain the effects of scale and/or interval changes on graphs of whole number data sets.  |  |                                  |
| 12.   | Use and explain sampling techniques (e.g., observations, surveys, and random sampling) for gathering data.  | 179  |                                  |
| 13.   | Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, and selecting, collecting, and displaying appropriate data to address the problem. | 158, 159 (and all word problem pages)<br><b>SB:</b> 128, 129 | 275 (and all word problem pages) |
| <b>B. Select and use appropriate statistical methods to analyze data.</b>         |   |  |                                  |
| 1   | Choose and justify appropriate measures of central tendencies (e.g., mean, median, mode, range) to describe given or derived data.  | 56, 57<br><b>SB:</b> 47-50                                   |                                  |
| 2.  | Know various ways to display data sets (e.g., stem and leaf plot, box and whisker lot, scatter plots) and use these forms to display a single set of data or to compare two sets of data.                               | 179<br><b>SB:</b> 101  |                                  |
| 3.  | use the analysis of data to make convincing arguments.  |  |                                  |
| 4.  | Use appropriate technology to gather and display data sets and identify the relationships that exist among variables within the data set.   |  |                                  |
| 5.  | Use data samples of a population and describe the characteristics and limitations of the sample.  |  |                                  |
| 6.  | Identify data that represents sampling errors and explain why the sample and the display might be biased.   |  |                                  |
| 7.  | Identify claims based on statistical data and evaluate the validity of the claims.  |  |                                  |
| <b>C. Develop and evaluate inferences and predictions that are based on data.</b> |   |  |                                  |
| 1.  | Formulate and justify mathematical conjectures based on data and a general description of the mathematical question or problem posed.   |  |                                  |
| 2.  | Analyze data to make accurate inferences, predictions, and to develop convincing arguments from data displayed in a variety of forms.   |  |                                  |
| 3.  | Approximate a line of best fit for a data set in a scatter plot form and make predictions using the simple equation of that line.   |  |                                  |



|           |  | Part A<br>Student Book | Part A<br>Skill Builders (SB) |
|-----------|--|------------------------|-------------------------------|
|           |  |                        |                               |
| <b>D.</b> | <b>Understand and apply basic concepts of probability.</b>   |                        |                               |
| <b>1.</b> | Determine the probability of a compound event composed of two independent events.                                  |                        |                               |
| <b>2.</b> | Identify examples of events having the probability of one or zero.   |                        |                               |
| <b>3.</b> | Describe the probability of events using fractions, decimals, and percents.  |                        |                               |
| <b>4.</b> | Express probability as a fraction, zero, or one.   |                        |                               |
| <b>5.</b> | Use probability to generate convincing arguments, draw conclusions, and make decisions in a variety of situations. |                        |                               |
| <b>6.</b> | Make predictions based on theoretical probabilities of compound events.  |                        |                               |
| <b>7.</b> | Determine the probability of a simple event or a compound event composed of a simple, independent events.          |                        |                               |