



# Math Teachers Press, Inc.

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| Missouri Learning Standards for Mathematics Correlated to<br><i>Moving with Algebra Grade 8</i> |   |  |  |  |
|---|---|--|--|--|
|   |   | Part A<br>Student Book<br>Skill Builders<br>(SB) | Part B<br>Student Book<br>Skill Builders<br>(SB) | Part C<br>Student Book<br>Skill Builders<br>(SB) |
|   | <b>Number Sense and Operations</b>  |  |  |  |
| <b>8.NS.A.</b>  | <b>Know that there are numbers that are not rational, and approximate them by rational numbers.</b>                                       |  |  |  |
| <b>8.NS.A.1.</b>  | Explore the real number system.   |  |  |  |
| <b>a.</b>   | Know the differences between rational and irrational numbers.   | 80<br><b>SB:</b> 61                              |  |  |
| <b>b.</b>   | Understand that all rational numbers have a decimal expansion that terminates or repeats.   | 141, 165, 166<br><b>SB:</b> 115, 116             |  |  |
| <b>c.</b>   | Convert decimals which repeat into fractions and fractions into repeating decimals.   | 142  |  |  |
| <b>d.</b>   | Generate equivalent representations of rational numbers.  | 140  |  |  |
| <b>8.NS.A.2.</b>  | Estimate the value and compare the size of irrational numbers and approximate their locations on a number line.                           |  | 220<br><b>SB:</b> 186                            |  |
|   | <b>Expressions, Equations and Inequalities</b>  |  |  |  |
| <b>8.EEI.A.</b>   | <b>Work with radicals and integer exponents.</b>  |  |  |  |
| <b>8.EEI.A.1.</b>   | Know and apply the properties of integer exponents to generate equivalent expressions.  | 16-19<br><b>SB:</b> 13, 14                       | 299-301, 305<br><b>SB:</b> 231, 254              | 390, 391<br><b>SB:</b> 306, 308                  |
| <b>8.EEI.A.2.</b>   | Investigate concepts of square and cube roots.  |  |  |  |
| <b>a.</b>   | Solve equations of the form $x^2 = p$ and $x^3 = p$ , where $p$ is a positive rational number.  |  | 219<br><b>SB:</b> 185                            |  |
| <b>b.</b>   | Evaluate square roots of perfect squares less than or equal to 625 and cube roots of perfect cubes less than or equal to 1000.            |  | 219, 308, 309<br><b>SB:</b> 185, 235             |  |
| <b>c.</b>   | Recognize that square roots of non-perfect squares are irrational.  |  | 220<br><b>SB:</b> 186                            |  |
| <b>8.EEI.A.3.</b>   | Express very large and very small quantities in scientific notation and approximate how many times larger one is than the other.          | 22, 23, 25<br><b>SB:</b> 17, 18                  |  | <b>SB:</b> 307                                   |
| <b>8.EEI.A.4.</b>   | Use scientific notation to solve problems.  |  |  |  |
| <b>a.</b>   | Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. |  |  |  |
| <b>b.</b>   | Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities.                     |  |  |  |

|                                 |   | <b>Part A<br/>Student Book<br/>Skill Builders<br/>(SB)</b> | <b>Part B<br/>Student Book<br/>Skill Builders<br/>(SB)</b>                                  | <b>Part C<br/>Student Book<br/>Skill Builders<br/>(SB)</b> |
|---------------------------------|---|--|---|--|
| <b>8.EE1.B.</b>                 | <b>Understand the connections between proportional relationships, lines, and linear equations.</b>  |  |   |  |
| <b>8.EE1.B.5.</b>               | Graph proportional relationships.   |  |   |  |
| <b>a.</b>                       | Interpret the unit rate as the slope of the graph.  |  | 318, 320<br><b>SB:</b> 240, 241, 256  | 361-364<br><b>SB:</b> 283-285, 297-300                     |
| <b>b.</b>                       | Compare two different proportional relationships.   |  |   | 361-364<br><b>SB:</b> 283-285, 297-300                     |
| <b>8.EE1.B.6.</b>               | Apply concepts of slope and y-intercept to graphs, equations and proportional relationships.  |  |   |  |
| <b>a.</b>                       | Explain why the slope (m) is the same between any two distinct points on a non-vertical line in the Cartesian coordinate plane.   |  | 324-327<br><b>SB:</b> 242, 243  | 359  |
| <b>b.</b>                       | Derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.  |  | 328-330   | 352-357<br><b>SB:</b> 276-281                              |
| <b>8.EE1.C.</b>                 | <b>Analyze and solve linear equations and inequalities and pairs of simultaneous linear equations.</b>  |  |   |  |
| <b>8.EE1.C.7.</b>               | Solve linear equations and inequalities in one variable.  |  |   |  |
| <b>a.</b>                       | Create and identify linear equations with one solution, infinitely many solutions or no solutions.  |  |   | <b>SB:</b> 329   |
| <b>b.</b>                       | Solve linear equations and inequalities with rational number coefficients, including equations and inequalities whose solutions require expanding expressions using the distributive property and combining like terms. |  | 257-265, 270, 271, 274-278, 283-285, 287-291<br><b>SB:</b> 213-221, 223, 226, 227, 252, 253 | 346, 347<br><b>SB:</b> 268, 269, 271, 301                  |
| <b>8.EE1.C.8.</b>               | Analyze and solve systems of linear equations.  |  |   |  |
| <b>a.</b>                       | Graph systems of linear equations and recognize the intersection as the solution to the system.   |  |   | 403<br><b>SB:</b> 323, 324                                 |
| <b>b.</b>                       | Explain why solution(s) to a system of two linear equations in two variables correspond to point(s) of intersection of the graphs.  |  |   | 403<br><b>SB:</b> 323, 324                                 |
| <b>c.</b>                       | Explain why systems of linear equations can have one solution, no solution or infinitely many solutions.  |  |   | 407<br><b>SB:</b> 329, 330                                 |
| <b>d.</b>                       | Solve systems of two linear equations.  |  |   | 404-406<br><b>SB:</b> 323, 327, 328                        |
| <b>Geometry and Measurement</b> |   |  |   |  |

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|------------------|---|--|--|--|
| <b>8.GM.A.</b>   | <b>Understand congruence and similarity using physical models, transparencies, or geometry software.</b>  |  |  |  |
| <b>8.GM.A.1.</b> | <b>Verify experimentally the congruence properties of rigid transformations.</b>  |  |  |  |
| <b>a.</b>        | Verify that angle measure, betweenness, collinearity and distance are preserved under rigid transformations.  |  | 204<br><b>SB:</b> 171, 172                                 |  |
| <b>b.</b>        | Investigate if orientation is preserved under rigid transformations.  |  |  |  |
| <b>8.GM.A.2.</b> | Understand that two-dimensional figures are congruent if a series of rigid transformations can be performed to map the pre-image to the image.  |  | 204<br><b>SB:</b> 171                                      |  |
| <b>a.</b>        | Describe a possible sequence of rigid transformations between two congruent figures.  |  |  |  |
| <b>8.GM.A.3.</b> | Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.  |  |  |  |
| <b>8.GM.A.4.</b> | Understand that two-dimensional figures are similar if a series of transformations (rotations, reflections, translations and dilations) can be performed to map the pre-image to the image. |  | 227, 228<br><b>SB:</b> 192                                 |  |
| <b>a.</b>        | Describe a possible sequence of transformations between two similar figures.  |  |  |  |
| <b>8.GM.A.5.</b> | Explore angle relationships and establish informal arguments.   |  |  |  |
| <b>a.</b>        | Derive the sum of the interior angles of a triangle.  |  | 196, 197<br><b>SB:</b> 164, 165                            |  |
| <b>b.</b>        | Explore the relationship between the interior and exterior angles of a triangle.  |  |  |  |
| <b>c.</b>        | Construct and explore the angles created when parallel lines are cut by a transversal.  |  | 200<br><b>SB:</b> 167                                      |  |
| <b>d.</b>        | Use the properties of similar figures to solve problems.  |  | 229  |  |
| <b>8.GM.B.</b>   | <b>Understand and apply the Pythagorean Theorem</b>   |  |  |  |
| <b>8.GM.B.6.</b> | Use models to demonstrate a proof of the Pythagorean Theorem and its converse.  |  | 221  |  |
| <b>8.GM.B.7.</b> | Use the Pythagorean Theorem to determine unknown side lengths in right triangles in problems in two- and three- dimensional contexts.   |  | 221, 222<br><b>SB:</b> 187                                 |  |
| <b>8.GM.B.8.</b> | Use the Pythagorean Theorem to find the distance between two points in a Cartesian coordinate system.   |  |  |  |

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|-------------------|--|--|--|--|
| <b>8.GM.C.</b>    | <b>Solve problems involving volumes of cones, pyramids and spheres.</b>  |  |  |  |
| <b>8.GM.C.9.</b>  | Solve problems involving surface area and volume.  |  |  |  |
| <b>a.</b>         | Understand the concept of surface area and find surface area of pyramids.  |  | 216  |  |
| <b>b.</b>         | Understand the concepts of volume and find the volume of pyramids, cones and spheres.  |  |  |  |
|                   | <b>Data Analysis, Statistics and Probability</b>   |  |  |  |
| <b>8.DSP.A.</b>   | <b>Investigate patterns of association in bivariate data.</b>  |  |  |  |
| <b>8.DSP.A.1.</b> | Construct and interpret scatter plots of bivariate measurement data to investigate patterns of association between two quantities. |  |  | 367-369<br><b>SB:</b> 287                                  |
| <b>8.DSP.A.2.</b> | Generate and use a trend line for bivariate data, and informally assess the fit of the line.                                       |  |  | 368  |
| <b>8.DSP.A.3.</b> | Interpret the parameters of a linear model of bivariate measurement data to solve problems.  |  |  | 372, 373   |
| <b>8.DSP.A.4.</b> | Understand the patterns of association in bivariate categorical data displayed in a two-way table.                                 |  |  |  |
| <b>a.</b>         | Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects.            |  |  |  |
| <b>b.</b>         | Use relative frequencies calculated for rows or columns to describe possible association between the two variables.                |  |  |  |
|                   | <b>Functions</b>   |  |  |  |
| <b>8.F.A.</b>     | <b>Define, evaluate, and compare functions.</b>  |  |  |  |
| <b>8.F.A.1.</b>   | Explore the concept of functions. (The use of function notation is not required.)  |  |  |  |
| <b>a.</b>         | Understand that a function assigns to each input exactly one output.   |  | 235, 236, 315-317<br><b>SB:</b> 198, 238, 239              | 398, 399<br><b>SB:</b> 316, 317                            |
| <b>b.</b>         | Determine if a relation is a function.   |  | 235, 236   | 398, 399   |
| <b>c.</b>         | Graph a function.  |  | 236, 316, 317<br><b>SB:</b> 198, 238, 239                  | 349<br><b>SB:</b> 273, 296                                 |
| <b>8.F.A.2.</b>   | Compare characteristics of two functions each represented in a different way.  |  | 236  | <b>SB:</b> 319   |
| <b>8.F.A.3.</b>   | Investigate the differences between linear and nonlinear functions.  |  |  |  |
| <b>a.</b>         | Interpret the equation $y = mx + b$ as defining a linear function, whose parameters are the slope (m) and the y-intercept (b).     |  | 328-331<br><b>SB:</b> 244, 250, 260                        | 351-353, 355, 356<br><b>SB:</b> 275-277, 279, 280          |

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|-----------------|---|--|--|--|
| <b>b.</b>       | Recognize that the graph of a linear function has a constant rate of change.                      |  | 328, 330   | 350<br><b>SB:</b> 274                                      |
| <b>c.</b>       | Give examples of nonlinear functions.   |  |  | 348<br><b>SB:</b> 272                                      |
| <b>8.F.B.</b>   | <b>Use functions to model relationships between quantities.</b>                                   |  |  | 355, 361   |
| <b>8.F.B.4.</b> | Use functions to model linear relationships between quantities.                                   |  |  |  |
| <b>a.</b>       | Explain the parameters of a linear function based on the context of a problem.                    |  | 235, 236, 315-321  | 355, 361   |
| <b>b.</b>       | Determine the parameters of a linear function.  |  | 235, 236, 315-321<br><b>SB:</b> 199, 200, 238, 239, 256, 262 | 355, 361<br><b>SB:</b> 280, 283                            |
| <b>c.</b>       | Determine the x-intercept of a linear function.   |  | 321, 328   | 355  |
| <b>8.F.B.5.</b> | Describe the functional relationship between two quantities from a graph or a verbal description. |  | 235, 236, 315-321  | <b>SB:</b> 319   |