



# Math Teachers Press, Inc.

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## Missouri Mathematics Learning Goals Correlated to Moving with Math Foundations Level B Grade 4

|  | B1<br>Number Sense,<br>Addition &<br>Subtraction<br>Student Book<br>Skill Builders (SB) | B2<br>Multiplication &<br>Division Facts<br>Student Book<br>Skill Builders (SB) | B3<br>Multiplication &<br>Division Problem<br>Solving<br>Student Book<br>Skill Builders (SB) | B4<br>Fractions,<br>Decimals,<br>Geometry &<br>Measurement<br>Student Book<br>Skill Builders (SB) |
|--|---|---|--|---|
| <b>CORE CONTENT A: MULTIPLICATION &amp; DIVISION: BASIC FACTS FLUENCY &amp; MULTI-DIGIT COMPUTATION</b>  |   |   |  |   |
| <b>1.</b> Understand and use efficient strategies for computing multiplication and division facts and use equations to represent the computations.   |   |   |  |   |
| <b>a.</b> Demonstrate proficiency with multiplication and division basic facts (single-digit factors and related division facts).  |   | 18, 20, 39, 40<br><b>SB:</b> 20-8   |  |   |
| <b>b.</b> Recognize and use relational ( $=$ , $\neq$ , $<$ , $>$ ) and operational ( $+$ , $-$ , $\times$ , $\div$ ) symbols to represent mathematical equations using multiplication and division.   |   | 20, 40<br><b>SB:</b> 20-10  |  |   |
| <b>c.</b> Find the unknown quantity in a variety of simple equations (e.g., $20 \times 4 = \underline{\quad}$ ; $6 = 48 \div \underline{\quad}$ ; $4 \times 3 = \underline{\quad} \times 2$ ; $\underline{\quad} = 7 \times 8$ ) that involve addition, subtraction, multiplication and/or division. |   | 62, 69<br><b>SB:</b> 20-6, 20-9, 20-17, 25-7                                    |  |   |
| <b>2.</b> Extend understanding of place value concepts and the operations of multiplication and division.  |   |   |  |   |
| <b>a.</b> Determine the place value (hundred thousands through ones) and the value of each digit in a number (e.g., the 6 in 678,000 represents 6 hundred thousands, 60 ten thousands or 600 thousands) and translate among these representations.   | 17, 18<br><b>SB:</b> 6-1, 6-2   |   |  |   |

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|---|---|--|--|--|
| <b>b.</b> Make connections among representations of multi-digit multiplication situations with objects, diagrams (especially area models), words, expressions, and equations.   |   | 57   | 26-32<br><b>SB:</b> 21-3, 21-11  |  |
| <b>c.</b> Describe the effects of multiplying whole numbers by 10, 100, or 1000.  |   |  | 30   |  |
| <b>d.</b> Explain what a remainder represents in a contextual problem involving division.   |   | 72<br><b>SB:</b> 26-2  | 60<br><b>SB:</b> 26-10   |  |
| <b>e.</b> Analyze a variety of strategies (including a standard algorithm) for multiplication and division in order to demonstrate their similarities and differences, and to draw conclusions about their efficiency, accuracy, and generalizability.    |   |  | 18, 57   |  |
| <b>f.</b> Explain and justify multi-digit multiplication and division strategies on the basis of place value and properties of operations (identity, zero, commutative, associative, and distributive).   |   |  | 18, 20, 22, 65   |  |
| <b>3.</b> Understand, explain, and use efficient strategies to compute multiplication problems (with products to 10,000) and division problems (with up to three-digit dividend and one-digit divisor).   |   |  |  |  |
| <b>a.</b> Use efficient strategies, including a standard algorithm, to solve multiplication (multi-digit) and division (one-digit divisor and up to three-digit dividend) problems proficiently.  |   |  | 26, 27, 32, 65, 70<br><b>SB:</b> 21-4, 21-8, 23-1, 27-2  |  |
| <b>b.</b> Estimate products and/or calculate them mentally depending on the context and numbers involved; use estimates to judge the reasonableness of solutions.   |   | 59<br><b>SB:</b> 21-2  | 23, 24, 34<br><b>SB:</b> 21-6, 21-7, 23-3  |  |
| <b>c.</b> Create single- and multi-step contextual problems for a variety of mathematical situations (multi-digit addition, multi-digit subtraction, multi-digit multiplication and/or division with one-digit divisor [partitive and quotative models]). |   |  | 35 (T.G.), 51 (T.G.), 60 (T.G.)  |  |

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|--|---|--|--|--|
| <b>d.</b> Solve single- and multi-step contextual problems (multi-digit addition, multi-digit subtraction, multi-digit multiplication and/or division with one-digit divisor [partitive and quotative models]).                                  |   |  | 32-35, 60<br><b>SB:</b> 23-4   |  |
| <b>CORE CONTENT B: DECIMAL PLACE VALUE &amp; CONNECTIONS TO FRACTIONS &amp; PERCENTS</b>   |   |  |  |  |
| <b>1. Understand and apply the meaning of decimals and the relationships among the place values of their digits.</b>   |   |  |  |  |
| <b>a.</b> Make connections between and among a variety of representations of hundredths and tenths, including base ten models, meter sticks, words, standard and expanded forms.   |   |  |  | 23, 24<br><b>SB:</b> 47-11, 47-12  |
| <b>b.</b> Recognize and apply the concepts underlying place value (tenths, hundredths) by identifying the value of each digit in a decimal (e.g., the 7 in 0.78 represents 7 tenths or 70 hundredths) and translate among these representations. |   |  |  | 23, 24<br><b>SB:</b> 47-11, 47-12  |
| <b>c.</b> Identify a tenth more or a tenth less, and a hundredth more or a hundredth less, than a given number.  |   |  |  |  |
| <b>2. Understand and explain relationships among commonly used fractions, decimals, and percents.</b>  |   |  |  |  |
| <b>a.</b> Model fractions (halves, fourths, eighths, fifths and tenths) on a 10 x 10 grid and use this representation to convert fractions to decimals.  |   |  |  | 23-25<br><b>SB:</b> 47-12  |
| <b>b.</b> Relate fractions with denominators of ten and one hundred to equivalent decimals.  |   |  |  | 25<br><b>SB:</b> 47-19   |
| <b>c.</b> Relate benchmark percents (0%, 25%, 50%, 75%, and 100%) to fractions with denominators of 100 and to decimals to hundredths.   |   |  |  |  |
| <b>d.</b> Identify equivalent fractions, decimals (less than one, equivalent to one, and greater than one) and percents, with and without models, including locations on a number line.  |   |  |  | 26, 27   |

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|--|---|---|--|---|
| e. Use a variety of methods to compare and order fractions, decimals, and percents.  |   |   |  | 4, 13, 28<br>SB: 32-1, 32-4, 47-15  |
| <b>CORE CONTENT C: AREA MEASUREMENT &amp; TRANSFORMATIONS</b>  |   |   |  |   |
| 1. Understand, explain, and apply the concepts of area and area measurement as related to rectangles.  |   |   |  |   |
| a. Find the area of a variety of two-dimensional figures by using physical models (e.g., square units to cover a shape with no gaps or overlaps or a transparent grid placed over a shape) to count the total number of units. |   |   |  | 68, 69<br>SB: 46-5, 46-7  |
| b. Derive and use the area formula for a rectangle ( $b \cdot h$ ) and connect it with the area model for multiplication.  |   |   |  | 69<br>SB: 46-6  |
| c. Given a linear or area measurement situation, select the appropriate type (one dimensional or two dimensional) and size (i.e. inches/feet, centimeters/meters, etc.) of unit.   |   |   |  |   |
| d. Demonstrate that rectangles with the same area can have different perimeters, and that rectangles with the same perimeter can have different areas.   |   |   |  | SB: 46-8  |
| e. Use area and perimeter concepts and knowledge of metric and customary measurement systems to solve problems involving rectangles including the measure of unknown sides.  |   |   |  | 70<br>SB: 46-4  |
| 2. Understand and explain the meanings and uses of transformations.  |   |   |  |   |
| a. Use translations (slides), reflections (flips), and rotations (turns) to transform two-dimensional shapes.  |   |   |  | 42, 43<br>SB: 39-2  |
| b. Predict the result of a transformation.   |   |   |  | 42, 43  |

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|---|---|--|--|--|
| <b>c.</b> Determine whether two shapes are congruent by using a combination of translations, reflections, and/or rotations with models.   |   |  |  | 41 (T.G.)<br><b>SB:</b> 39-3   |
| <b>d.</b> Use transformations to determine whether a two-dimensional shape has line and/or rotational symmetry.   |   |  |  | 45<br><b>SB:</b> 38-2  |
|   |   |  |  |  |
|   |   |  |  |  |
| <b>1.</b> Understand how to formulate and answer questions that can be addressed by conducting simple experiments and collecting numerical data.  |   |  |  |  |
| <b>a.</b> Formulate questions that can be addressed with data.  | 68, 70  |  |  |  |
| <b>b.</b> Collect or use available numerical data in order to draw conclusions and answer questions.  | 68-70<br><b>SB:</b> 50-1 to 50-4  |  |  |  |
|   |   |  |  |  |
| <b>2.</b> Understand the tools for exploring distributions (including measures of center and spread), the appropriateness of data displays, and limitations of inference.                 |   |  |  |  |
| <b>a.</b> Represent distributions of data by using a variety of displays, including tables, bar graphs, line graphs, line plots, and discuss the appropriateness of each type of display. | 68  |  |  |  |
| <b>b.</b> Describe the distribution of data in terms of its center (mode and median) and spread (range).  |   |  | 68<br><b>SB:</b> 50-9  |  |
| <b>c.</b> Compare related data sets on the basis of measures of center (mode and median) and spread (range).  |   |  |  |  |
| <b>d.</b> Recognize limitations in the scope of inference beyond the experiment.  |   |  |  |  |