Moving Beyond the Page Math

Age 7-9

Recommend for 3rd grade

(make sure to complete each activity in the lessons)

Unit 1: Multiplication and Division I, Lesson 1: Getting Ready to Multiply

* Skip count
* Use arrays to create addition sentences
* Identify equal groups

Unit 1: Multiplication and Division I, Lesson 2: What is Multiplication?

* Interpret products of whole numbers
* Use the language of multiplication

Unit 1: Multiplication and Division I, Lesson 3: Arrays and Equal Groups

* Interpret products of whole numbers
* Interpret and create arrays that model multiplication
* Use equal groups to model multiplication

Unit 1: Multiplication and Division I, Lesson 4Repeated Addition and Number Lines

* Interpret products of whole numbers
* Use repeated addition and number lines to model multiplication

Unit 1: Multiplication and Division I, Lesson 5: Multiplication and the Abacus

* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Use the language of multiplication

 Unit 1: Multiplication and Division I, Lesson 6: The commutative Property of Multiplication

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide

Unit 1: Multiplication and Division I, Lesson 7: Multiples of 2 and 3

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100
* Know from memory all products of two one-digit numbers

Unit 1: Multiplication and Division I, Lesson 8: More Practice With 2 and 3

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100
* Know from memory all products of two one-digit numbers

Unit 1: Multiplication and Division I, Lesson 9: Multiples of 4 and 5

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100
* Know from memory all products of two one-digit numbers
* Identify arithmetic patterns, and explain them using properties of operations

Unit 1: Multiplication and Division I, Lesson 10: Practice with 2, 3, 4, and 5

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100
* Know from memory all products of two one-digit numbers
* Identify arithmetic patterns, and explain them using properties of operations

Unit 1: Multiplication and Division I, Lesson 11: Multiples of 10

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100
* Know from memory all products of two one-digit numbers
* Identify arithmetic patterns, and explain them using properties of operations

Unit 1: Multiplication and Division I, Lesson 12: Multiples of 10

* Interpret products of whole numbers
* Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100
* Know from memory all products of two one-digit numbers
* Identify arithmetic patterns, and explain them using properties of operations

Unit 1: Multiplication and Division I, Lesson 13: What is Division?

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Understand division as an unknown n-factor problem

Unit 1: Multiplication and Division I, Lesson 14: Multiplication and Division Fact Families

* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Understand division as an unknown n-factor problem

Unit 1: Multiplication and Division I, Lesson 15: Unit Test

* Interpret products of whole numbers
* Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100
* Know from memory all products of two one-digit numbers
* Interpret whole-number quotients of whole numbers
* Understand division as an unknown n-factor problem

Unit 1: Multiplication and Division I, Final Project: Multiples Mini-Posters

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100
* Know from memory all products of two one-digit numbers

Unit 2: Place Value, Lesson 1: Three-Digit Place Value Review

* Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones
* Read, write, and skip count to 1000
* Know from memory all products of two one-digit numbers

Unit 2: Place Value, Lesson 2: Rounding to 10 and 100

* Read and write numbers to 10,000 using base-10 numerals, number names, and expanded form
* Count to 10,000
* Know from memory all products of two one-digit numbers

Unit 2: Place Value, Lesson 3: Problem Solving with Addition

* Use place value understanding to round whole numbers to the nearest 10 or 100
* Know from memory all products of two one-digit numbers

 Unit 2: Place Value, Lesson 4: Using Rounding to Estimate

* Use place value understanding to round whole numbers to the nearest 10 or 100
* Assess the reasonableness of answers using mental computation and estimation strategies including rounding

Unit 2: Place Value, Lesson 5: Adding Four-Digit Numbers

* Fluently add and subtract beyond 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction
* Assess the reasonableness of answers using mental computation and estimation strategies including rounding

Unit 2: Place Value, Lesson 6: Subtracting Four-Digit Numbers

* Fluently add and subtract beyond 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction
* Know from memory all products of two one-digit numbers

Unit 2: Place Value, Lesson 7: Unit Test

* Read and write numbers to 10,000 using base-10 numerals, number names, and expanded form
* Count to 10,000
* Use place value understanding to round whole numbers to the nearest 10 or 100
* Assess the reasonableness of answers using mental computation and estimation strategies including rounding
* Fluently add and subtract beyond 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction
* Know from memory all products of two one-digit numbers

Unit 2: Place Value, Final Project: Place Value Board Game

* Read and write numbers to 10,000 using base-10 numerals, number names, and expanded form
* Count to 10,000
* Use place value understanding to round whole numbers to the nearest 10 or 100
* Fluently add and subtract beyond 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction

Unit 3: Measurement, Lesson 1: Practice With Time

* Tell, show, and talk about time to 5 minutes

Unit 3: Measurement, Lesson 2: Telling Time to the Minute

* Tell and write time to the nearest minute

Unit 3: Measurement, Lesson 3: Elapsed Time

* Tell and write time to the nearest minute and measure time intervals in minutes

Unit 3: Measurement, Lesson 4: working With Weight

* Measure and estimate weights of objects using standard units

Unit 3: Measurement, Lesson 5: More Work With Weight

* Measure and estimate weights of objects using standard units

Unit 3: Measurement, Lesson 6: Exploring Volume

* Measure and estimate liquid volumes (capacities) using standard units

Unit 3: Measurement, Lesson 7: More Work With Volume

* Measure and estimate liquid volumes (capacities) using standard units

Unit 3: Measurement, Lesson 8: Some Weighty Problem Solving

* Measure and estimate weight using standard units
* Add, subtract, multiply, or divide to solve one-step word problems involving weights or volumes that are given in the same units

Unit 3: Measurement, Lesson 9: Unit Test

* Tell and write time to the nearest minute and measure time intervals in minutes
* Solve word problems involving addition and subtraction of time intervals in minutes
* Measure and estimate liquid volumes and weights of objects using standard units
* Add, subtract, multiply, or divide to solve one-step word problems involving weights or volumes that are given in the same units

Unit 3: Measurement, Final Project: Volume Video

* Measure and estimate liquid volumes using standard units

Unit 4: Multiplication and Division II, Lesson 1: Mastering More Multiplication Facts

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100

Unit 4: Multiplication and Division II, Lesson 2: Multiples of 6 and 7

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Fluently multiply and divide within 100
* Use multiplication and division within 100 to solve word problems
* Identify arithmetic patterns

Unit 4: Multiplication and Division II, Lesson 3: Multiples of 8 and 9

* Interpret products of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Fluently multiply and divide within 100
* Use multiplication and division within 100 to solve word problems
* Identify arithmetic patterns

 Unit 4: Multiplication and Division II, Lesson 4: Practicing All of the Multiples

* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Fluently multiply and divide within 100

Unit 4: Multiplication and Division II, Lesson 5: The Associative Property of Multiplication

* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100

Unit 4: Multiplication and Division II, Lesson 6: The Distributive Property of Multiplication

* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100

Unit 4: Multiplication and Division II, Lesson 7: Reviewing Properties of Multiplication

* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100

Unit 4: Multiplication and Division II, Lesson 8: Revisiting Division

* Interpret whole-number quotients of whole numbers
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Understand division as an unknown-factor problem
* Fluently multiply and divide within 100

Unit 4: Multiplication and Division II, Lesson 9: Multiplication and Division Facts Practice

* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Understand division as an unknown-factor problem
* Fluently multiply and divide within 100

Unit 4: Multiplication and Division II, Lesson 10: Problem Solving Using Multiple Operations

* Use multiplication and division within 100 to solve word problems
* Solve two-step word problems using the four operations

Unit 4: Multiplication and Division II, Lesson 11: Multiplying by Multiples of 10

* Multiply one-digit whole numbers by multiples of 10 in the range 10-90
* Use multiplication and division to solve word problems

Unit 4: Multiplication and Division II, Lesson 12: Unit Test

* Use multiplication and division within 100 to solve word problems
* Solve two-step word problems using the four operations
* Determine the unknown whole number in a multiplication or division equation relating three whole numbers
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100
* Multiply one-digit whole numbers by multiples of 10 in the range 10-90

Unit 4: Multiplication and Division II, Final Project: Planning a Picnic

* Use multiplication and division within 100 to solve word problems
* Solve two-step word problems using the four operations
* Apply properties of operations as strategies to multiply and divide

Unit 5: Area and Perimeter, Lesson 1: Review of Plane Shapes

* Name, describe, and create polygons
* Measure length

Unit 5: Area and Perimeter, Lesson 2: What is Perimeter?

* Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths

Unit 5: Area and Perimeter, Lesson 3: Calculating Perimeter

* Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths

Unit 5: Area and Perimeter, Lesson 4: More Work With Perimeter

* Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths

Unit 5: Area and Perimeter, Lesson 5: Problem Solving With Perimeter

* Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths

Unit 5: Area and Perimeter, Lesson 6: What is Area?

* Recognize area as an attribute of plane figures and understand concepts of area measurement
* Understand that a square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area
* Measure area by counting unit squares (square cm, square m, square in, square ft, and improvised units)

Unit 5: Area and Perimeter, Lesson 7: Calculating Area

* Relate area to the operations of multiplication and addition
* Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths
* Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems

Unit 5: Area and Perimeter, Lesson 8: More Work With Area

* Relate area to the operations of multiplication and addition
* Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems
* Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts

Unit 5: Area and Perimeter, Lesson 9: Creating With Perimeter and Area

* Solve real world and mathematical problems involving perimeters of polygons
* Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems
* Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts

Unit 5: Area and Perimeter, Lesson 10: Problem Solving With Perimeter and Area

* Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths
* Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems
* Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems

Unit 5: Area and Perimeter, Lesson 11: Unit Test

* Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths and finding unknown side length
* Relate area to the operations of multiplication and addition
* Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems
* Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts

Unit 5: Area and Perimeter, Final Project: Shapesville

* Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths and finding unknown side length
* Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems

Unit 6: Fractions, Lesson 1: What Is a Fraction?

* Identify and compare wholes and parts
* Show fractional parts and shapes

Unit 6: Fractions, Lesson 2: Naming Fractions

* Recognize parts of fractions: numerator and denominator
* Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts
* Understand a fraction a/b as the quantity formed by a parts of size 1/b

Unit 6: Fractions, Lesson 3: Fraction Parts

* If denominators are the same in two fractions, the fraction with the larger numerator is the larger fraction
* If the numerators are the same in two fractions, the fraction with the smaller denominator is the larger fraction

 Unit 6: Fractions, Lesson 4: More Fraction Exploration

* Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts
* Explain equivalence of fractions in special cases
* Recognize and generate simple equivalent fractions
* Recognize fractions that are equivalent to whole numbers

Unit 6: Fractions, Lesson 5: Fractions, Division, and Groups

* Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b

 Unit 6: Fractions, Lesson 6: Fractions on Number Lines

* Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b
* Understand a fraction as a number on the number line; represent fractions on a number line diagram
* Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.
* Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.

Unit 6: Fractions, Lesson 7: Equivalent Fractions

* Explain equivalence of fractions in special cases
* Understand two fractions as equivalent (equal) if they are the same size
* Recognize and generate simple equivalent fractions

Unit 6: Fractions, Lesson 8: Fractions in Our World

* Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b
* Discuss the use of fractions in the real world

Unit 6: Fractions, Lesson 9: Unit Test

* Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b
* Understand a fraction as a number on the number line; represent fractions on a number line diagram
* Recognize and generate simple equivalent fractions
* Compare two fractions with the same numerator or the same denominator

Unit 6: Fractions, Final Project: Fraction BINGO

* Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b
* Understand a fraction as a number on the number line; represent fractions on a number line diagram

Unit 7: Geometry, Lesson 1: Back to the Geometry Basics

* Define the attributes of polygons
* Identify polygons and non-polygons
* Identify congruent shapes

Unit 7: Geometry, Lesson 2: Parallel (and Other) Lines

* Identify and create parallel, intersecting, and perpendicular lines

 Unit 7: Geometry, Lesson 3: What Is a Quadrilateral?

* Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes, and that the shared attributes can define a larger category

Unit 7: Geometry, Lesson 4: Getting To Know Specific Quadrilaterals

* Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes, and that the shared attributes can define a larger category
* Recognize rhombuses, rectangles, and squares as examples of quadrilaterals

Unit 7: Geometry, Lesson 5: Getting Creative With Quadrilaterals

* Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes, and that the shared attributes can define a larger category
* Recognize rhombuses, rectangles, and squares as examples of quadrilaterals

Unit 7: Geometry, Lesson 6: Dividing Shapes

* Partition shapes into parts with equal areas
* Express the area of each part as a unit fraction of the whole

 Unit 7: Geometry, Lesson 7: Some Geometric Problem Solving

* Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes, and that the shared attributes can define a larger category
* Recognize rhombuses, rectangles, and squares as examples of quadrilaterals
* Partition shapes into parts with equal areas
* Express the area of each part as a unit fraction of the whole

Unit 7: Geometry, Lesson 8: Unit Test

* Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes, and that the shared attributes can define a larger category
* Recognize rhombuses, rectangles, and squares as examples of quadrilaterals
* Partition shapes into parts with equal areas
* Express the area of each part as a unit fraction of the whole

Unit 7: Geometry, Final Project: My Quadrilateral Story

* Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes, and that the shared attributes can define a larger category
* Recognize rhombuses, rectangles, and squares as examples of quadrilaterals

Unit 8: Graphing Data, Lesson 1: Data and Graphing Basics

* Collect data
* Read and interpret graphs
* Solve one- and two-step “how many more” and “how many less” problems using information presented in graphs
* Draw conclusions

Unit 8: Graphing Data, Lesson 2: Pictographs

* Read and interpret graphs
* Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories
* Solve one- and two-step “how many more” and “how many less” problems using information presented in graphs
* Draw conclusions

Unit 8: Graphing Data, Lesson 3: Bar Graphs

* Read and interpret graphs
* Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories
* Solve one- and two-step “how many more” and “how many less” problems using information presented in graphs

Unit 8: Graphing Data, Lesson 4: Line Plots

* Measure to half and quarter inches
* Read and interpret line plots
* Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch
* Show data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters

 Unit 8: Graphing Data, Lesson 5: More Work With Graphing

* Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories
* Show data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters
* Draw conclusions

Unit 8: Graphing Data, Lesson 6: Unit Test

* Read and interpret graphs
* Solve one- and two-step “how many more” and “how many less” problems using information presented in graphs

Unit 8: Graphing Data, Final Project: Saving the Bakery

* Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories
* Show data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters
* Draw conclusions

Unit 9: Skills Review, Lesson 1: Reviewing Multiplication and Division

* Use place value understanding to round whole numbers to the nearest 10 or 100
* Apply properties of operations as strategies to multiply and divide
* Fluently multiply and divide within 100

Unit 9: Skills Review, Lesson 2: Reviewing Fractions

* Tell time to the nearest minute and measure time intervals in minutes
* Identify, represent, and compare fractions
* Recognize and generate simple equivalent fractions

Unit 9: Skills Review, Lesson 3: Reviewing Perimeter and Area

* Find perimeters of given shapes
* Find areas of given shapes
* Identify units of measure

 Unit 9: Skills Review, Lesson 4: Reviewing Geometry

* Recognize quadrilaterals
* Divide shapes into parts with equal areas and express each area as a fraction of the whole