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Looking Forward To:

Grade 3

**Number and Operations**

Multiplication and Division

Understanding the meaning of multiplication

**UNIT 1** MATH FOCUS POINTS IN SESSIONS

- Understanding multiplication as combining equal groups
- Writing, representing, and solving multiplication problems in context
- Identifying the number of groups and the number in each group (the factors), and the total number (the product)
- Understanding the relationship among skip counting, repeated addition, and multiplication
- Using and understanding multiplication notation
- Finding the multiples of the numbers 2, 3, 4, 5, 6, and 10
- Describing and comparing characteristics of sets of multiples
- Understanding that doubling (or halving) one factor in a multiplication expression doubles (or halves) the product
- Using contexts to understand multiplication involving 1 and 0

**TEN-MINUTE MATH**

- Finding the multiples of numbers through skip counting
- Using multiplication patterns to determine a sequence of multiples
- Applying the properties of multiplication to find missing factors
Grade 3

Number and Operations

Multiplication and Division

Understanding the meaning of multiplication

UNIT 1 MATH FOCUS POINTS

- Understanding multiplication as combining equal groups
- Writing, representing, and solving multiplication problems in context
- Identifying the number of groups and the number in each group (the factors), and the total number (the product)
- Understanding the relationship among skip counting, repeated addition, and multiplication
- Using and understanding multiplication notation
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TEN-MINUTE MATH

- Finding the multiples of numbers through skip counting
- Using multiplication patterns to determine a sequence of multiples
- Applying the properties of multiplication to find missing factors
- Becoming familiar with multiplication patterns to determine a sequence of multiples
- Understanding the relationship between skip counting and multiplication

Understanding and working with an array/area model of multiplication

UNIT 1 MATH FOCUS POINTS

- Modeling multiplication situations with arrays
- Finding factors of 2-digit numbers up to 30 using arrays
- Identifying characteristics of numbers, including prime and square numbers, using arrays
Finding the product represented by an array by breaking it into parts
Finding the area of a rectangle by covering it with square tiles
Developing an understanding that the area of a rectangle can be found by multiplying its dimensions

**Learning multiplication facts**

**UNIT 1 MATH FOCUS POINTS**
- Learning multiplication facts using arrays
- Using known multiplication facts to determine the product of more difficult facts
- Identifying and learning multiplication facts not yet known
- Learning multiplication facts to $10 \times 10$

**UNIT 5 MATH FOCUS POINTS**
- Using known multiplication facts to determine the product of more difficult facts
- Finding a product by using an array or story context to represent breaking it into parts
- Identifying and learning multiplication facts not yet known
- Learning multiplication facts to $10 \times 10$

**TEN-MINUTE MATH**
- Organizing and analyzing visual images
- Writing multiplication equations that model the structure of dot arrangements

**Developing strategies for division based on understanding the inverse relationship between multiplication and division**

**UNIT 1 MATH FOCUS POINTS**
- Understanding division as the splitting of a quantity into equal groups
- Writing, representing, and solving division problems in context
- Using the inverse relationship between multiplication and division to solve problems
- Using multiplication facts to solve division problems
- Using and understanding division notation

**Understanding the meaning and structure of multiplication and division and the relationship between them**

**UNIT 5 MATH FOCUS POINTS**
- Recognizing multiples and non-multiples of 3, 4, or 6
- Interpreting division as how many equal groups
- Understanding and articulating the relationship between multiplication and division
- Understanding that doubling one factor in a multiplication expression doubles the product
- Finding the area of arrays by multiplying the dimensions
- Using strategies based on the distributive property
- Developing strategies for multiplying that involve breaking apart numbers
- Understanding division as an unknown-factor problem

**Solving multiplication and division problems, including multi-step problems and problems with multiple solutions**

**UNIT 5 MATH FOCUS POINTS**
- Using multiplication or division to solve word problems
- Using multiplication facts to solve division problems
- Using the inverse relationship between multiplication and division to solve problems
- Representing and comparing multiplication problems with pictures, diagrams, or models
- Solving multi-step problems involving multiplication and addition
- Writing an equation with a letter to represent the unknown
- Solving problems with multiple solutions
- Writing equations to show how a number is a multiple or non-multiple of 3, 4, or 6
- Writing equations with two operations
- Writing and interpreting related multiplication and division equations
- Using and understanding multiplication and division notation
- Understanding the role of parentheses in equation notation
Learning division facts

UNIT 8 MATH FOCUS POINTS
- Developing fluency with division facts
- Using known division facts and related multiplication facts to determine quotients of more difficult facts

Identifying arithmetic patterns and solving multi-step problems

UNIT 8 MATH FOCUS POINTS
- Solving multi-step problems involving more than one operation
- Representing multi-step problems involving more than one operation
- Identifying and explaining arithmetic patterns
- Using tables to identify and interpret arithmetic patterns
- Connecting the steps of a general method or rule to the parts of the situation they represent
- Representing multi-step problems with equations
- Using letters to stand for unknown quantities

Addition, Subtraction, and the Number System

Using knowledge of place value to add and subtract

UNIT 3 MATH FOCUS POINTS
- Constructing 1,000 from 10 groups of 100
- Reading, writing, and sequencing numbers to 1,000
- Representing the structure of 3-digit numbers as the composition of 100s, 10s, and 1s
- Recognizing and demonstrating the equivalence of one 100 to ten 10s and of one 10 to ten 1s
- Using place value to determine the size of any number to 1,000
- Determining the number of hundreds in the sum of 3-digit numbers (e.g., there are 6 hundreds in 329 + 287)
- Recognizing and representing the groups of 10 in 3-digit numbers (e.g., there are 27 tens in 276)
- Using place-value understanding to round whole numbers to the nearest ten or hundred
PART 5: SCOPE AND SEQUENCE

- Recognizing and representing the place value of each digit in 2- and 3-digit numbers
- Finding different combinations of 100s, 10s, and 1s for a given number, and recognizing their equivalence (e.g., 137 equals 1 hundred, 3 tens, and 7 ones, or 1 hundred, 2 tens, and 17 ones, or 13 tens and 7 ones)

**TEN-MINUTE MATH**

- Recognizing and interpreting the value of each digit in 2- and 3-digit numbers
- Reading and writing 2- and 3-digit numbers, including using expanded form
- Adding multiples of 10 to, and subtracting multiples of 10 from, 2- and 3-digit numbers
- Using place value understanding to round whole numbers to the nearest ten or hundred

Adding and subtracting fluently

**UNIT 7 MATH FOCUS POINTS**

- Solving addition and subtraction problems in the context of money (dollars, cents)
- Solving addition and subtraction problems in the context of distance traveled
- Solving multi-step word problems
- Combining hundreds to numbers above 1,000
- Solving addition problems with 3-digit numbers
- Estimating and solving addition problems with sums greater than 1,000
- Solving addition problems with more than 2 addends
- Determining combinations of addends for a given sum
- Subtracting from multiples of 100
- Adding multiples of 10 and 100 to, and subtracting them from, 3-digit numbers
- Estimating answers to subtraction problems with 3-digit numbers
- Solving related subtraction problems involving multiples of 100
- Using multiples of 100 to solve subtraction problems
- Writing a story problem to represent a subtraction equation
- Solving add to, take from, put together/take apart, and compare story problems

**TEN-MINUTE MATH**

- Generating expressions equivalent to a given number using particular constraints
- Practicing computation skills
- Estimating solutions to 3-digit addition and subtraction problems
- Breaking apart, reordering, rounding, or changing numbers mentally to determine a reasonable estimate

Understanding different types of addition and subtraction problems

**UNIT 3 MATH FOCUS POINTS**

- Visualizing and representing add to, take from, put together/take apart, and compare problems
- Solving add to, take from, put together/take apart, and compare story problems
- Using number lines to represent solutions to comparison problems

PART 5: SCOPE AND SEQUENCE | 96 | Grade 3
Solving problems involving measurement of liquid volume and mass

**UNIT 7 MATH FOCUS POINT**
- Solving addition and subtraction problems involving liquid volume and mass

Describing, analyzing, and comparing strategies for adding and subtracting whole numbers

**UNIT 7 MATH FOCUS POINTS**
- Identifying addition strategies by focusing on how each strategy starts
- Solving addition problems by changing the numbers to create an equivalent problem that is easier to solve
- Using story contexts and representations to support explanations about equivalent addition expressions (e.g., $88 + 105 = 90 + 103$)
- Subtracting 3-digit numbers by using strategies that involve subtracting one number in parts, adding up, or subtracting back
- Subtracting by using strategies that involve changing one number to make a problem that is easier to solve
- Using story contexts and representations to support explanations about how changing a number in a subtraction problem affects the difference (e.g., $200 - 75 = 125$ and $200 - 78 = 122$)

Grade 3

**Rational Numbers**

**Fractions**

Understanding the meaning of fractions as equal parts of a whole

**UNIT 6 MATH FOCUS POINTS**
- Representing fractional parts of an area
- Understanding one of the equal parts of a whole as a unit fraction
- Understanding fractional parts are constructed of unit fractions
- Finding fractions of different-sized wholes
- Understanding that the size of a fraction is determined by the whole
- Demonstrating that different-shaped pieces are the same fraction of a whole
- Using representations to visualize how fractions relate to each other and are parts of a whole.

Understanding the meaning of fractions as numbers

**UNIT 6 MATH FOCUS POINTS**
- Representing fractions on a number line
- Understanding a unit fraction as a number represented on a number line
- Understanding fractions with numerators greater than 1 as iterations of a unit fraction on the number line
- Measuring length to the nearest fourth inch
- Representing measurement data to the nearest fourth inch on a line plot
Comparing fractions and reasoning about fraction equivalencies with representations

**UNIT 6 MATH FOCUS POINTS**
- Generating and identifying equivalent fractions
- Understanding and explaining why fractions are equivalent
- Ordering unit fractions by reasoning about their size
- Comparing fractions by reasoning about their size
- Comparing fractions with the same denominators or same numerators

Modeling with fraction notation

**UNIT 6 MATH FOCUS POINTS**
- Understanding and using notation for unit fractions (e.g., $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{8}$)
- Understanding and using notation for fractions with numerators greater than 1 (e.g., $\frac{3}{4}$, $\frac{7}{8}$)
- Understanding and using notation for fractions equivalent to 1 (e.g., $\frac{2}{2}$, $\frac{3}{3}$)
- Understanding and using notation for fractions greater than 1 (e.g., $\frac{3}{2}$, $\frac{7}{4}$)
- Using equations to represent how fractions relate to each other and to a whole

Grade 3

**Measurement**

Generating measurement data

**UNIT 2 MATH FOCUS POINTS**
- Generating measurement data by measuring to the nearest half inch
- Generating measurement data by measuring lengths longer than the measuring tool
- Understanding the relationship between feet and inches
- Combining feet and inches to get a total measurement
- Using correct notation to write a measurement in feet and inches

Understanding and finding perimeter

**UNIT 4 MATH FOCUS POINTS**
- Understanding perimeter as the distance around the outside edges of a 2-D figure
- Finding perimeter using standard units
- Creating different shapes with the same perimeter
- Looking for and making use of structure of 2-D geometric shapes
- Finding the perimeter of an irregular shape
- Finding the unknown side lengths when given the perimeter and some side lengths
- Understanding that rectangles can have the same perimeter and different areas or the same area and different perimeters
- Reviewing the length of units of measure (inch, foot, yard, centimeter, and meter)
- Establishing measurement benchmarks
- Using U.S. standard and metric units to accurately measure length
- Recognizing and explaining possible sources of measurement error
Understanding and finding area

**UNIT 4 MATH FOCUS POINTS**
- Covering a shape with no gaps or overlaps
- Understanding that area is measured in square units
- Understanding that when measuring area, the space being measured must be completely covered with no gaps or overlaps
- Understanding that different shapes can have the same area
- Determining area, using square units and half-units
- Examining the relationship between areas of rectangles and triangles
- Finding the area and perimeter of a rectangle
- Understanding that rectangles can have the same perimeter and different areas or the same area and different perimeters
- Finding the areas of partially covered rectangles
- Finding the area of an irregular shape
- Finding areas of rectangles in square units
- Multiplying side lengths to find area of a rectangle
- Understanding that area is additive through finding the areas of rectilinear shapes

Solving problems involving measurement of liquid volume and mass

**UNIT 7 MATH FOCUS POINTS**
- Understanding measures of liquid volume and mass
- Estimating and measuring liquid volume and mass
- Solving addition and subtraction problems involving liquid volume and mass

Data

**UNIT 2 MATH FOCUS POINTS**
- Describing and interpreting categorical data
- Using summaries such as *almost all*, *very few*, *half*, or *more/less than half*
- Using one half as a benchmark
- Using data to compare groups
- Solving one- and two-step “how many more” and “how many less” problems based on data presented in bar graphs
- Describing the shape of ordered, numerical data
- Summarizing what is typical about the data as a whole
- Reading and interpreting bar graphs and pictographs
- Developing and revising a survey question

Representing data

**UNIT 2 MATH FOCUS POINTS**
- Developing classifications to organize categorical data
- Organizing categorical data in different ways to answer different questions
- Representing categorical data
- Considering how well a data representation communicates to an audience
- Representing data with bar graphs and pictographs
- Using and interpreting a scale on a bar graph or pictograph with intervals larger than 1
- Using a line plot to represent ordered, numerical data
- Using a line plot to represent measurement data that includes fractions
- Interpreting what the numbers and symbols on a line plot mean

TEN-MINUTE MATH
- Naming, notating, and telling time to the nearest minute on a digital or analog clock
- Determining intervals of time to the nearest minute
- Solving problems involving addition or subtraction of time intervals in minutes

TEN-MINUTE MATH
- Identifying how data are sorted into categories based on similar attributes
Grade 3

Geometry

Describing and classifying 2-D figures

**UNIT 4 MATH FOCUS POINTS**

- Constructing triangles and quadrilaterals with given attributes
- Identifying a right angle
- Identifying the attributes of triangles: three sides, three vertices, and three angles
- Identifying the attributes of quadrilaterals: four sides, four vertices, and four angles
- Identifying the attributes of squares, rectangles, and rhombuses
- Categorizing quadrilaterals based on their attributes
- Comparing the properties of squares, rectangles, and rhombuses

**TEN-MINUTE MATH**

- Looking for and making use of structure of 2-D geometric shapes
- Developing language and concepts needed to communicate about spatial relationships, including shape names and attributes
- Decomposing images of 2-D shapes and then recombining them to make a given design