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Grade 2

Number and Operations

Addition and Subtraction

Fluency within 20

UNIT 1 MATH FOCUS POINTS

- Developing and analyzing visual images for quantities up to 10
- Developing fluency with addition and subtraction within 20
- Naming and comparing strategies for adding and subtracting two single-digit numbers
- Considering whether order matters in addition
- Using known facts to add two or more numbers
- Considering whether reordering three addends results in the same total
- Considering a generalization about reordering addends for all numbers
- Considering whether reordering the numbers in a subtraction problem results in the same difference

CLASSROOM ROUTINES

- Developing and analyzing visual images for quantities up to 10
- Finding the two-addend combinations that equal 10
- Considering a generalization about reordering addends for all numbers
- Using known facts to add two or more numbers
- Developing fluency with the doubles facts within 20
- Developing fluency with addition and subtraction within 20

Each strand is labeled with a grade level.

The content is organized around six strands. All strands do not appear at every grade level.

The strands are divided into main math ideas.

The main math ideas are further subdivided into Math Focus Points. The main math ideas may appear in one or more units.

The main math ideas are also supported by the Classroom Routines (or Ten-Minute Math activities in Grade 3).

Grade 2 Number and Operations

The Number System

Understanding and extending the counting sequence

UNIT 1 MATH FOCUS POINTS

- Using the number line to reason about, and keep track of information about, the magnitude and relationship of numbers
- Counting sets of up to 100 objects
- Counting a quantity in more than one way
- Counting, writing, and reading numbers to 100 and beyond
- Identifying and using patterns in the number sequence to count, read, and write numbers to 100 and beyond
- Developing an understanding of the structure of the 100 chart
- Identifying and recognizing coins and the dollar bill and their values
- Combining coins to a total of 50¢
- Identifying and using coin equivalencies
- Counting by groups of 2, 5, and 10

UNIT 3 MATH FOCUS POINTS

- Using a 100 chart to reason about the magnitude and relationship of numbers
- Identify, read, and write numbers to 500
- Using standard notation ($<$, $>$) to express the relationship between two quantities

UNIT 5 MATH FOCUS POINTS

- Reading and writing 3-digit numbers
- Reasoning about the magnitude and relationship of 2- and 3-digit numbers
- Skip counting and writing multiples of 5 and 10 within 1,000 and noticing patterns in the number sequence

CLASSROOM ROUTINES

- Counting a quantity in more than one way
- Identifying and recognizing coins and their values
- Counting by 5s or 10s within 200, 500, and 1,000
- Identifying patterns in the skip counting sequence of 2s, 5s, and 10s

- Reasoning about the relative size of a number in relation to other numbers
- Using numbers on a partially marked number line to reason about the location of a given number

Understanding place value

UNIT 1 MATH FOCUS POINTS

- Recognizing that the first digit of a 2-digit number designates the number of groups of 10 and the second digit designates the number of ones
- Solving problems about 10s and 1s

UNIT 3 MATH FOCUS POINTS

- Using a place-value model to represent a 2-digit number as tens and ones
- Determining a quantity represented by a given number of tens and ones
- Finding as many combinations of a 2-digit number as possible, using only tens and ones, and recognizing that different combinations of tens and ones for the same number are equivalent (e.g., 4 tens and 6 ones, 3 tens and 16 ones, etc.)
- Using an equation to represent a 2-digit number as the sum of multiples of ten and some number of ones (e.g., $22 = 20 + 2$, $22 = 10 + 10 + 2$)
- Noticing what happens to the tens place when a multiple of 10 is added or subtracted
- Working with the relationship between 1, 10, and 100
- Using a place-value model to represent a 3-digit number as hundreds, tens, and ones
- Recognizing that the numbers 100, 200, 300 represent groups of 100
- Adding 10 to and subtracting 10 from a given number and describing what part of the number changes

UNIT 5 MATH FOCUS POINTS

- Identifying the value that each digit in a 3-digit number represents
- Representing 3-digit numbers in expanded form
- Using a place-value model to represent 3-digit numbers as hundreds, tens, and ones
- Comparing 3-digit numbers by comparing like places (i.e., hundreds with hundreds, tens with tens, ones with ones)
- Using standard notation ($>$, $<$) to express the relationship between two quantities
- Working with the relationship between 1, 10, 100, and 1,000

- Noticing how the digit in the tens place changes when the addends in the ones place sum to greater than 9
- Adding 10 or 100 to and subtracting 10 or 100 from a given number and describing what part of the number changes

CLASSROOM ROUTINES

- Representing a quantity as a group of ones, and as a group of tens and ones, and understanding their equivalence
- Finding different combinations of a 2-digit number, using only tens and ones, and recognizing their equivalence
- Noticing what happens to the tens place when 10 is added to a number, and what happens to the ones place when ones are added to a number
- Working with the relationship between 10 and 100
- Reasoning about the place value of 3-digit numbers
- Expressing a 3-digit number in expanded form
- Determining the quantity represented by a given number of hundreds, tens, and ones
- Using an equation to represent a 2-digit number as the sum of multiples of ten and some number of ones or an equation to represent a 3-digit multiple of 100 as the sum of hundreds
- Noticing and comparing how a quantity changes when tens are added or when ones are added to a number
- Using standard notation ($<$, $>$) to express the relationship between two quantities

Addition and Subtraction

Fluency within 20

UNIT 1 MATH FOCUS POINTS

- Developing and analyzing visual images for quantities up to 10
- Developing fluency with addition and subtraction within 20
- Naming and comparing strategies for adding and subtracting two single-digit numbers
- Considering whether order matters in addition
- Using known facts to add two or more numbers
- Using known facts to add/subtract single-digit numbers
- Considering whether reordering three addends results in the same total
- Considering a generalization about reordering addends for all numbers
- Considering whether reordering the numbers in a subtraction problem results in the same difference

UNIT 2 MATH FOCUS POINT

- Developing fluency with doubles facts within 20

UNIT 3 MATH FOCUS POINTS

- Using known combinations to add two or more numbers
- Finding the difference between 20 and a given number
- Relating the doubles and near-doubles combinations
- Developing fluency with the near-doubles combinations
- Developing fluency with addition and subtraction within 20

UNIT 5 MATH FOCUS POINTS

- Developing fluency with addition and subtraction within 20
- Relating the Plus 10/Minus 10 facts to the Plus 9/Minus 9 facts
- Using cubes and the number line to show the relationship between adding (or subtracting) 9 and adding (or subtracting) 10 to/from a number

UNIT 8 MATH FOCUS POINTS

- Developing fluency with addition and subtraction within 20
- Relating unknown facts to known ones (e.g., using $(7 + 7) + 1$ to solve $15 - 7$ or thinking $15 - 7 = 15 - 5 - 2$)
- Demonstrating fluency with addition and subtraction within 20

CLASSROOM ROUTINES

- Developing and analyzing visual images for quantities up to 10
- Finding the two-addend combinations that equal 10
- Considering a generalization about reordering addends for all numbers
- Using known facts to add two or more numbers
- Developing fluency with the doubles facts within 20
- Developing fluency with addition and subtraction within 20
- Relating the doubles and near-doubles facts
- Relating unknown facts to known ones (e.g., $8 + 6 = 8 + 2 + 4$, or using $8 + 6 = 14$ to solve $14 - 8$)
- Developing fluency with the Plus 10/Minus 10 facts
- Developing fluency with the Plus 9/Minus 9 facts
- Relating the Plus 10/Minus 10 facts to the Plus 9/Minus 9 facts
- Using cubes and the number line to show the relationship between adding 9 and 10 to, or subtracting 9 and 10 from, a number

Understanding, representing, and solving problems involving addition and subtraction

UNIT 1 MATH FOCUS POINTS

- Using standard notation ($>$, $<$) to express the relationship between two quantities
- Using standard notation ($+$, $-$, $=$) to record expressions or equations
- Generating equivalent expressions for a number
- Sharing strategies for solving addition problems
- Solving a comparison story problem with the difference unknown
- Visualizing, representing, and solving put together/take apart story problems with the total unknown, and add to and take from story problems with the result unknown
- Using standard notation ($+$, $-$, $=$) to represent addition and subtraction situations
- Using numbers, symbols, pictures, and/or words to represent a solution to a problem
- Sharing strategies for solving put together/take apart story problems with the total unknown, and add to and take from story problems with the result unknown

UNIT 3 MATH FOCUS POINTS

- Identifying and using coin equivalencies
- Using coins to model adding by 5s and 10s
- Adding coin amounts, up to \$1.00
- Determining the difference between a given amount and \$1.00
- Adding multiples of 5 and 10, up to 100
- Determining the difference between a 2-digit number and a multiple of 10 up to 100
- Determining the difference between a multiple of 5 or 10 and 100
- Visualizing, representing, and solving add to and take from story problems with the change unknown or start unknown
- Using numbers, symbols, pictures, and/or words to represent a solution to a problem
- Using standard notation ($+$, $-$, $=$) to represent addition and subtraction situations
- Sharing strategies for solving story problems with an unknown change or unknown start
- Solving two-step story problems about money
- Considering the relationship between addition and subtraction

UNIT 5 MATH FOCUS POINTS

- Finding the difference between two 2-digit numbers
- Finding the difference between a 2- or 3-digit number and 100
- Solving 2-step problems
- Adding two 2-digit numbers and determining the difference between the sum and 100
- Finding combinations of coins that equal \$1.00
- Recognizing and using coin equivalencies
- Visualizing, representing, and solving add to story problems with the result unknown
- Visualizing, representing, and solving comparison problems with a bigger unknown (more than/fewer than)
- Solving story problems that involve comparison and finding the difference

UNIT 6 MATH FOCUS POINT

- Measuring and comparing lengths

UNIT 8 MATH FOCUS POINTS

- Visualizing, representing, and solving comparison problems with a smaller unknown (more than/fewer than)
- Visualizing, representing, and solving take from story problems with the result or the change unknown
- Generating a story context to match a given equation or expression
- Solving 2-step problems that involve comparing and finding the difference
- Subtracting amounts from \$1.00 or 100, down to 0
- Comparing situations in which the amount subtracted differs by 1
- Developing strategies for subtracting 2-digit numbers
- Developing methods for notating subtraction strategies
- Using standard notation ($+$, $-$, $=$) to represent addition and subtraction situations
- Using coin equivalencies

CLASSROOM ROUTINES

- Determining the value of a set of coins, and using an equation to represent it
- Using an equation to represent the value of a set of coins
- Adding multiples of 5, up to 100
- Generating equivalent expressions for a number
- Using standard notation ($+$, $-$, $=$) to record expressions or equations
- Adding four 2-digit numbers

- Using subtraction to generate expressions that equal a given number
- Solving take from problems with unknown change
- Solving a problem with multiple addends
- Solving equations with unknowns in all positions
- Noticing what happens when 10 or 100 is added to, or subtracted from, a 3-digit number
- Developing fluency with addition and subtraction within 20
- Using known facts to add/subtract single-digit numbers

Using knowledge of place value to add and subtract

UNIT 3 MATH FOCUS POINTS

- Adding 2-digit numbers by combining groups of tens and ones or adding on one number in parts
- Developing efficient strategies for adding and subtracting 2-digit numbers
- Naming and comparing strategies for adding and subtracting 2-digit numbers
- Developing efficient methods for notating addition and subtraction strategies
- Considering the relationship between addition and subtraction

UNIT 5 MATH FOCUS POINTS

- Adding and subtracting a number of tens and/or ones to/from a 2- or 3-digit number
- Relating the single-digit combinations of 10 (e.g., $8 + 2$) to multiple of 10 combinations of 100 (e.g., $80 + 20$)
- Using knowledge of place value to find pairs of 2-digit numbers that add to 100 or a number close to 100
- Using known pairs of 2-digit numbers that add to 100 to find related pairs that add to 100 or a number close to 100 (for example: $80 + 20 = 100$, so $79 + 21 = 100$)
- Developing efficient strategies for adding 2-digit numbers
- Developing efficient methods for notating addition strategies
- Solving 2-digit addition problems using accurate and efficient strategies

UNIT 8 MATH FOCUS POINTS

- Using a place-value model and expanded form to represent 3-digit numbers as hundreds, tens, and ones
- Comparing 3-digit numbers by comparing like places (i.e., hundreds with hundreds, tens with tens, ones with ones)
- Estimating the difference between two 2-digit numbers, using known combinations, place value, and properties of operations
- Developing efficient strategies for subtracting 2-digit numbers

- Developing efficient methods for notating subtraction strategies
- Subtracting 2-digit numbers using accurate and efficient strategies
- Adding two 3-digit numbers by combining hundreds, tens, and ones
- Noticing how the digit in the tens (or hundreds) place changes when the ones (or tens) place of the addends sum to greater than 9 (or 90)
- Adding 3-digit numbers by adding on one number in parts or adjusting to make an easier problem
- Subtracting 3-digit numbers by keeping one number whole and subtracting the other in parts by place
- Subtracting numbers where it is necessary to regroup the number of hundreds and/or tens in the initial amount
- Adding and subtracting 3-digit numbers accurately
- Using a place-value model and equations to represent addition and subtraction strategies

CLASSROOM ROUTINES

- Adding and subtracting a number of tens and/or ones to/from a 2-digit number
- Noticing what happens to the tens/hundreds place when 10/100 is added to a number
- Finding pairs of 2-digit numbers that sum to a multiple of 10, and using an equation to represent them
- Using knowledge of place value to find pairs of 2-digit numbers that add to 100 or a number close to 100
- Estimating the sum of two 2-digit numbers using known combinations, place value, and properties of operations
- Solving a multiple addend problem about tens and hundreds (dimes and dollars)
- Estimating the sum of (or difference between) two 2- or 3-digit numbers, using known combinations, place value, and properties of operations

Foundations of Multiplication

Investigating odd and even numbers

UNIT 7 MATH FOCUS POINTS

- Investigating numbers that can and cannot be made into groups of two or two equal groups
- Understanding that any number that can be divided into groups of two can also be divided into two equal groups (and vice versa)

- Characterizing even and odd numbers as those that do or do not make groups of two (partners) and two equal groups (teams)
- Representing an even number as the sum of two equal addends and an odd number as the sum of two equal addends plus 1
- Considering whether observations about even or odd numbers apply to all even numbers or all odd numbers

Visualizing equal groups in the structure of arrays

UNIT 7 MATH FOCUS POINTS

- Arranging cubes in rectangular arrays
- Finding the total number of objects in a rectangular array
- Using an equation to model the total number of cubes in an array as a sum of equal addends

CLASSROOM ROUTINES

- Developing a visual image of an array
- Using an array to model equal groups
- Using an equation to model the total number of squares in an array as the sum of equal addends

Describing and representing equal groups as the foundation of multiplication

UNIT 7 MATH FOCUS POINTS

- Counting by and adding equal groups
- Using an equation to model adding equal groups
- Describing the relationship between a number of equal groups and their total
- Representing multiplicative relationships with tables
- Comparing situations that look different but have the same equal group structure
- Solving problems involving equal groups and the total number of objects

CLASSROOM ROUTINES

- Developing a visual image of an array
- Using an array to model equal groups
- Using an equation to model the total number of squares in an array as the sum of equal addends

Grade 2 Geometry

Describing, identifying, and comparing attributes of 2-D and 3-D shapes

UNIT 1 MATH FOCUS POINTS

- Developing vocabulary to name and describe 2-D shapes
- Finding combinations of shapes that fill a region
- Examining equivalencies among the pattern-block shapes, and the relationship between the size and the number of blocks used to fill a region

UNIT 2 MATH FOCUS POINTS

- Drawing 2-D shapes
- Observing, describing, and identifying 2-D and 3-D shapes
- Developing visual images of 2-D shapes and geometric language for describing their defining attributes
- Developing geometric vocabulary to describe and compare defining attributes of 3-D shapes and their 2-D faces
- Developing geometric language for describing defining attributes of 2-D shapes
- Attending to features of 3-D shapes, particularly the number and shapes of faces
- Identifying a 3-D shape by its attributes
- Identifying and sorting 2-D shapes by defining attributes
- Sorting 3-D shapes by common attributes
- Identifying categories of shapes based on attributes
- Identifying quadrilaterals as shapes with 4 sides and 4 angles
- Identifying rectangles as 4-sided shapes with 4 right angles
- Drawing rectangles
- Drawing rectangles by attending to the lengths of the sides
- Identifying defining attributes of a rectangle
- Making a 2-D representation of a 3-D shape
- Matching a 3-D shape to a 2-D image of its faces
- Sorting and naming polygons according to the number of sides

CLASSROOM ROUTINES

- Developing visual images of 2-D shapes and language for describing their defining attributes
- Drawing 2-D shapes
- Describing and comparing 2-D shapes

Visualizing the structure of arrays**UNIT 2 MATH FOCUS POINTS**

- Arranging square tiles in rows and columns of equal length to form a rectangle
- Describing a rectangular array of square tiles in terms of the number of rows, the number of tiles in each row and/or the total number
- Making different rectangular arrays using the same number of square tiles
- Constructing and describing rectangular arrays of tiles

CLASSROOM ROUTINES

- Using an array to model doubling

**Grade 2
Fractions****Understanding equal parts of a whole****UNIT 2 MATH FOCUS POINTS**

- Understanding equal parts of a whole
- Partitioning and identifying one half of a rectangle, a triangle, a hexagon, and a circle
- Recognizing that halves of the same shape can look different
- Using fraction vocabulary (e.g., one half, one fourth, one third, two thirds) and the associated notation (e.g., $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{2}{3}$) to describe fractional parts of a whole
- Finding a 3-D shape that is half of a rectangular prism
- Proving a block is half of another block
- Recognizing that different-looking halves of the same shape are equal
- Determining whether a shape is half of a given rectangle
- Making shapes and partitioning them into halves
- Identifying and determining whether a shape is half of a rectangular prism
- Partitioning and identifying one quarter of a square
- Recognizing that halves/fourths of the same shape can look different
- Identifying halves, thirds, and fourths of regions

CLASSROOM ROUTINES

- Drawing 2-D shapes and partitioning them into halves and fourths
- Recognizing that changing the orientation of a shape that is divided in half does not change the fractional part
- Understanding equal parts of a whole

Grade 2 Measurement

Using linear units

UNIT 6 MATH FOCUS POINTS

- Identifying contexts for measurement
- Identifying length and width as different dimensions of an object
- Using nonstandard units to measure length
- Considering the relationship between the size of a unit and the number of units it takes to measure a length
- Identifying strategies for accurate measurement
- Considering sources of measurement error
- Iterating units to measure length
- Understanding that different-sized units yield different counts (the smaller the unit, the higher the count)
- Establishing the need for a common unit to compare measurements
- Using inch-long units to measure length
- Seeing the need for, making, and using a 12-inch measuring tool
- Identifying and labeling partial units
- Using a 12-inch measuring tool to measure lengths that are shorter and longer than 12 inches
- Iterating a 12-inch measuring tool

Measuring with standard units

UNIT 6 MATH FOCUS POINTS

- Becoming familiar with and using the terms *inches*, *feet*, *yards*, *centimeters*, and *meters* as standard units of measure
- Comparing a variety of measuring tools
- Comparing centimeters and inches, and rulers that measure them
- Using rulers and yardsticks as standard measuring tools
- Using inches, feet, yards, centimeters, and meters to describe length

Understanding time

UNIT 1 MATH FOCUS POINT

- Naming, notating, and telling time to the hour using analog and digital formats

UNIT 8 MATH FOCUS POINT

- Naming, notating, and telling time to the nearest five minutes using analog and digital formats

CLASSROOM ROUTINES

- Identifying and drawing the important features of an analog clock
- Determining the number of minutes in hours, half hours, or quarter hours
- Naming, notating, and telling time to the hour, half hour, quarter hour, and nearest five minutes using analog and digital formats
- Determining what time it will be when given start and elapsed times that are multiples of 60, 30, or 15 minutes
- Using A.M. and P.M. to label times, and thinking about what happens at those times

Grade 2 Data

Sorting and classifying

UNIT 4 MATH FOCUS POINTS

- Identifying attributes of a set
- Sorting data with up to four categories based on similar attributes
- Using a Venn diagram to represent a sorted set of data, with overlapping categories
- Sorting the same set of data in different ways

Collecting and representing data

UNIT 1 MATH FOCUS POINT

- Collecting, counting, representing, and comparing data

UNIT 4 MATH FOCUS POINTS

- Representing a set of data sorted into up to four categories
- Using an equation to show how the sum of the responses in each category equals the total responses collected
- Representing data on a picture graph, bar graph, or line plot
- Making a plan for collecting data
- Making predictions about data to be collected
- Collecting and recording data from a survey
- Ordering and representing a set of numerical data

UNIT 5 MATH FOCUS POINT

- Collecting, counting, representing, and comparing data

UNIT 6 MATH FOCUS POINT

- Representing and describing a set of measurement data in a table and on a line plot

CLASSROOM ROUTINES

- Collecting, counting, representing, and comparing data

Describing and interpreting data

UNIT 4 MATH FOCUS POINTS

- Describing and interpreting data on a picture graph and bar graph
- Comparing representations of the same set of data
- Matching a bar graph to another representation by noticing features of the data
- Interpreting a data representation
- Describing and interpreting what the data show about the group surveyed
- Describing important features of a set of data
- Describing a set of data in up to four categories
- Describing a set of numerical data
- Interpreting and sharing results from a data investigation
- Developing a hypothesis based on a set of data

CLASSROOM ROUTINES

- Collecting, counting, representing, and comparing data