

# Content Scope & Sequence



SCOTT FORESMAN

# Investigations

IN NUMBER, DATA, AND SPACE®



**Counting, Coins, and Combinations** (Addition, Subtraction, and the Number System 1)**Mathematical Emphases**

**1 Counting and Quantity** Developing strategies for accurately counting a set of objects by ones and groups

**Math Focus Points**

- Counting sets of up to 60 objects
- Developing strategies for counting accurately
- Counting a quantity in more than one way
- Developing and analyzing visual images for quantities up to 10
- Counting by groups of 10

**2 Counting and Quantity** Developing an understanding of the magnitude and sequence of numbers up to 100

**Math Focus Points**

- Using the number line to reason about, and keep track of information about, the magnitude and relationship of numbers
- Developing an understanding of the structure of the 100 chart
- Counting, writing, and reading numbers sequentially from 1 to 100 and beyond
- Identifying and using patterns in the structure of the number system

**3 Whole-Number Operations** Making sense of and developing strategies to solve addition and subtraction problems with totals up to 45

**Math Focus Points**

- Generating equivalent expressions for a number
- Comparing two amounts under 45 to find the difference
- Combining two quantities with totals up to 45
- Visualizing, retelling, and modeling the action of addition and subtraction (as removal) situations
- Using known combinations (e.g., combinations that make 10) to compose, decompose, and combine numbers
- Subtracting a quantity from a whole of up to 30
- Solving addition and subtraction (as removal) story problems
- Doubling a quantity

**4 Computational Fluency** Knowing addition combinations to  $10 + 10$

**Math Focus Points**

- Developing fluency with the Make 10, Plus 1, and Plus 2 addition combinations
- Finding two addends that make 10
- Finding the missing addend to make a total of 10
- Doubling a quantity
- Developing fluency with the doubles combinations

**5 Whole-Number Operations** Using manipulatives, drawings, tools, and notation to show strategies and solutions

**Math Focus Points**

- Establishing use of tools, routines, and expectations for math class
- Using standard notation ( $>$ ,  $<$ ,  $+$ ,  $-$ ,  $=$ ) to describe arrangements of cubes, to record expressions that equal a given number, to compare quantities, to represent addition and subtraction situations, and to represent doubling
- Using the number line to reason about, and keep track of information about, the magnitude and relationship of numbers
- Recording strategies for solving problems, including addition and subtraction story problems
- Using equations to record
- Connecting standard notation for addition and subtraction ( $+$ ,  $-$ ,  $=$ ) to the quantities and actions that the signs and symbols represent
- Using a rectangular array to model doubling

**This Unit also focuses on**

- Fitting shapes together to cover an area
- Identifying coins and their values
- Identifying how many pennies each coin is worth
- Identifying and using coin equivalencies
- Collecting, counting, representing, discussing, interpreting, and comparing data
- Making predictions about data

**Classroom Routines focus on**

- Using clocks as tools for keeping track of and measuring time
- Naming, notating, and telling time to the hour, half hour, and quarter hour on digital and analog clocks
- Associating times on the hour and half hour with daily events
- Determining what time it will be when given start and elapsed times that are multiples of 15 minutes
- Seeing a timeline as a representation of events over time
- Using a timeline to keep track of and compare time and events
- Determining the length of a given interval (e.g., 8:30 to 9:30) or activity (e.g., math class)
- Solving problems involving elapsed time
- Generating equivalent expressions for a number
- Developing fluency with addition and subtraction
- Using standard notation ( $+$ ,  $-$ ,  $=$ ) to record expressions and write equations
- Developing and analyzing visual images for quantities up to 10
- Developing fluency with the combinations that make 10
- Developing fluency with the addition combinations to  $10 + 10$
- Using known combinations (e.g., combinations that make 10) to combine numbers
- Recreating images of dots arranged in 2-by-5 arrays

**Assessed Benchmarks**

- Count a set of objects up to 60 in at least one way
- Determine the difference between two numbers (up to 45)
- Interpret addition and subtraction story problems (read a story problem and determine what needs to be figured out)
- Have at least one strategy for solving addition and subtraction (as removal) story problems
- Demonstrate fluency with the Plus 1, Plus 2, and Make 10 addition combinations
- Understand what it means to double a quantity

# Shapes, Blocks, and Symmetry (2-D and 3-D Geometry)

## Mathematical Emphases

### ① Features of Shape Composing and decomposing 2-D and 3-D shapes

#### Math Focus Points

- Combining shapes to make a new shape
- Covering a region, without gaps or overlaps, with a single shape or multiple shapes
- Covering a region, without gaps or overlaps, using different shapes
- Combining 3-D shapes to make a 3-D whole
- Drawing 3-D shapes

### ② Features of Shape Describing, identifying, comparing, and sorting 2-D and 3-D shapes

#### Math Focus Points

- Describing attributes of and sorting 2-D and 3-D shapes
- Identifying names and attributes of 2-D and 3-D shapes
- Attending to features of 3-D shapes, particularly the number and shape of faces
- Identifying categories for 2-D shapes
- Identifying a 3-D shape by touch
- Sorting polygons by the number of sides
- Sorting quadrilaterals by angle
- Identifying quadrilaterals as shapes with 4 sides
- Identifying rectangles as 4-sided shapes with 4 right angles
- Identifying important features of a rectangle
- Defining biggest in different ways
- Ordering rectangles from biggest to smallest
- Recognizing that rectangular prisms have rectangular faces
- Recognizing which faces of a rectangular prism are the same size and shape
- Constructing a rectangular prism from rectangles
- Visualizing and describing rectangular prisms
- Comparing rectangular prisms

### ③ Area Measurement Visualizing the structure of arrays

#### Math Focus Points

- Covering rectangles with arrays of tiles
- Arranging square tiles in rectangular arrays
- Constructing and describing rectangular arrays of tiles
- Making different rectangular arrays using the same number of tiles
- Drawing rectangles by attending to the lengths of the sides

### ④ Features of Shape Exploring mirror symmetry

#### Math Focus Points

- Describing and identifying objects and designs that have mirror symmetry
- Constructing 2-D and 3-D symmetrical designs with mirror symmetry
- Reflecting a shape across a line of symmetry
- Exploring symmetry by folding and cutting paper patterns
- Identifying lines of symmetry
- Orienting shapes so that a line of symmetry aligns with a mirror (Shapes software)
- Determining what makes a design symmetrical

### ⑤ Computational Fluency Knowing addition combinations to 10 + 10

#### Math Focus Points

- Reviewing known addition combinations (combinations of 10, Plus 1, Plus 2)
- Developing fluency with the doubles combinations to 10 + 10
- Achieving fluency with the doubles combinations

### Classroom Routines focus on

- Generating equivalent expressions for a number
- Developing fluency with addition and subtraction
- Using standard notation (+, -, =) to record expressions and write equations
- Using clocks as tools for keeping track of and measuring time
- Naming, notating, and telling time to the hour, half hour, and quarter hour on digital and analog clocks
- Associating times on the hour and half hour with daily events
- Developing and analyzing visual images for quantities
- Identifying names and attributes of 2-D shapes
- Developing fluency with the doubles combinations up to 10 + 10
- Using arrays and standard notation (+, =) to represent doubles to 10 + 10
- Making predictions about data
- Collecting, counting, representing, discussing, interpreting, and comparing data
- Counting by groups
- Counting a quantity in more than one way

## Assessed Benchmarks

- Identify the number of sides of a polygon
- Identify the number of rows and the number of squares in each row in an array
- Identify rectangles as four-sided shapes with four right angles
- Identify the number of faces on a rectangular prism and show which faces are congruent
- Make a symmetrical picture based on an image provided
- Demonstrate fluency with addition combinations: doubles combinations to 10 + 10

# Stickers, Number Strings, and Story Problems (Addition, Subtraction, and the Number System 2)

## Mathematical Emphases

**1 Whole-Number Operations** Making sense of and developing strategies to solve addition and subtraction problems with totals up to 45

### Math Focus Points

- Using known combinations to add two or more numbers
- Comparing a number to 20 to find the difference
- Visualizing, retelling, and modeling the action of a variety of addition and subtraction situations
- Developing strategies for solving a variety of addition and subtraction story problems with totals up to 45 and recording work
- Solving problems with an unknown change
- Combining coins to a total of 50¢
- Solving an addition story problem by counting on or breaking numbers apart

**2 Whole-Number Operations** Understanding the properties of addition and subtraction

### Math Focus Points

- 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 total
- Considering the relationship between addition and subtraction

**3 Counting and Quantity** Counting by equal groups

### 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)
- Considering whether observations about even or odd numbers apply to all even numbers or all odd numbers

**4 Counting and Quantity** Developing strategies for accurately counting a set of objects by ones and groups

### Math Focus Points

- Looking at patterns and developing fluency with skip counting by 2s, 5s, and 10s
- Considering the relationship between skip counting and grouping
- Counting by groups of 2, 5, and 10
- Noticing and describing a 2:1 relationship (e.g., there are 2 legs for every 1 person)
- Solving problems that involve equal groups
- Knowing that the size of a group remains constant no matter how it is counted (by 1s, 2s, 5s, or 10s)

**5 The Base-Ten Number System** Understanding the equivalence of one group and the discrete units that comprise it

### Math Focus Points

- Identifying coins and their values
- Identifying and using coin equivalencies
- 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
- Using a place-value model to represent a number as 10s and 1s
- Finding as many combinations of a number as possible, using only 10s and 1s
- Recognizing that different combinations of 10s and 1s for the same number are equivalent (e.g., 4 tens and 6 ones = 3 tens and 16 ones, etc.)

**6 Whole-Number Computation** Using manipulatives, drawings, tools, and notation to show strategies and solutions

### Math Focus Points

- Using the calculator as a mathematical tool
- Using standard notation (+, -, =) to represent a variety of addition and subtraction situations
- Telling stories to match given equations
- Using tally marks to represent groups of 5

**7 Computational Fluency** Knowing addition combinations to 10 + 10

### Math Focus Points

- Relating the doubles and near-doubles combinations
- Developing fluency with the near-doubles combinations
- Adding 10 to any number (or any number to 10)
- Developing fluency with the Plus 10 combinations
- Achieving fluency with the near-doubles combinations

## Assessed Benchmarks

- Use known combinations to add several numbers in any order
- Interpret and solve subtraction (removal) and unknown change story problems with totals up to 45
- Define even and odd numbers in terms of groups of two or two equal groups
- Recognize and identify coins and their value
- Count on or break apart numbers to add two or more numbers up to a total of 45
- Interpret and solve problems about the number of tens and ones in a quantity
- Demonstrate fluency with addition combinations: near-doubles

## Classroom Routines focus on

- Generating equivalent expressions for a number
- Developing fluency with addition and subtraction
- Using standard notation (+, -, =) to record expressions and write equations
- Skip counting by 2s, 5s, and 10s
- Identifying patterns in the multiples of 2, 5, and 10
- Developing fluency with the addition combinations to 10 + 10
- Using known combinations (i.e., combinations that make 10) to combine numbers
- Recreating images of dots arranged in 2-by-5 arrays
- Using standard notation (+, -, =) to write equations
- Making predictions about data
- Collecting, counting, representing, discussing, interpreting, and comparing data
- Counting by groups
- Counting a quantity in more than one way
- Using known combinations (i.e., combinations that make 10) to combine numbers
- Developing strategies for solving addition problems with many addends
- Using a place-value model to represent a number as 10s and 1s
- 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
- Using clocks as tools for keeping track of and measuring time
- Naming, notating, and telling time to the hour, half hour, and quarter hour on digital and analog clocks
- Associating times on the hour and half hour with daily events
- Determining what time it will be when given start and elapsed times that are multiples of 15 minutes
- Determining the number of minutes in hours, half hours, and quarter hours
- Counting by 5s

# Pockets, Teeth, and Favorite Things (Data Analysis)

## Mathematical Emphases

---

### ① Data Analysis Sorting and classifying data

#### Math Focus Points

- Grouping data into categories based on similar attributes
- Sorting the same set of data in different ways
- Sorting a set of data by two attributes at one time

### ② Data Analysis Representing data

#### Math Focus Points

- Representing a set of data sorted into categories
- Comparing representations of a set of data
- Using equations to show how the sum of the responses in each category equals the total responses collected
- Using a Venn diagram to represent a sorted set of data
- Ordering, representing, and describing a set of numerical data
- Comparing ways of organizing data
- Representing data on a line plot

### ③ Data Analysis Describing data

#### Math Focus Points

- Describing what the data show about the group surveyed
- Interpreting a data representation including a line plot
- Describing important features of a data set
- Describing a set of numerical data
- Comparing two sets of data
- Developing a hypothesis based on a set of data

### ④ Data Analysis Designing and carrying out a data investigation

#### Math Focus Points

- Choosing a survey question
- Making a plan for collecting data
- Making predictions about data to be collected
- Collecting and recording data from a survey
- Interpreting and sharing results from a data investigation

### This Unit also focuses on

- Developing strategies for combining multiple addends
- Achieving fluency with the Plus 10 combinations

### Classroom Routines focus on

- Generating equivalent expressions for a number
- Developing fluency with addition and subtraction
- Using standard notation (+, -, =) to record expressions and write equations
- Using clocks as tools for keeping track of and measuring time
- Naming, notating, and telling time to the hour, half hour, and quarter hour on digital and analog clocks
- Determining what time it will be when given start and elapsed times that are multiples of 15 minutes
- Determining the number of minutes in hours, half hours, and quarter hours
- Developing and analyzing visual images for quantities
- Combining groups of tens and ones
- Adding to or subtracting 10 from a 2-digit number
- Noticing what happens to the tens place when a multiple of 10 is added to or subtracted from a 2-digit number
- Identifying coins and their values
- Adding coin amounts
- Using standard notation (¢, +, -, =) to write equations

## Assessed Benchmarks

---

- Use a Venn diagram to sort data by two attributes
- Identify categories for a set of categorical data and organize the data into chosen categories
- Order and represent a set of numerical data
- Describe a numerical data set, including the highest and lowest values and the mode
- Read and interpret a variety of representations of numerical and categorical data
- Compare two sets of numerical data
- Demonstrate fluency with Plus 10 combinations

## How Many Floors? How Many Rooms? (Patterns, Functions, and Change)

## Mathematical Emphases

**1 Linear Relationships** Describing and representing ratios**Math Focus Points**

- Describing the relationship between two quantities in a constant ratio situation
- Using tables to represent the ratio relationship between two quantities
- Finding the value of one quantity in a constant ratio situation, given the value of the other

**2 Using Tables and Graphs** Using tables to represent change**Math Focus Points**

- Connecting numbers in a table to the situation they represent
- Using conventional language for a table and its parts: rows, columns
- Describing the pattern in the numbers in a column and interpreting the pattern in terms of the situation the table represents
- Describing what is the same about situations that look different but can be represented by the same table
- Describing how the two numbers in the row of a table are connected to the situation the table represents
- Using information in a table to determine the relationship between two quantities

**3 Number Sequences** Constructing, describing, and extending number sequences with constant increments generated by various contexts**Math Focus Points**

- Extending a repeating pattern
- Identifying the unit of a repeating pattern
- Creating a repeating pattern that has the same structure as, but different elements than, another repeating pattern (e.g., a red–blue pattern and a clap–tap head pattern)
- Defining even and odd numbers
- Determining and describing the number sequence associated with one of the elements in an AB, ABC, ABCD, or AABBC repeating pattern (e.g., 2, 4, 6, 8, ...; 3, 6, 9, ...; 1, 4, 7, ...)
- Determining the element of a repeating pattern associated with a particular counting number in AB, ABC, ABCD, or AABBC patterns (e.g., what color is the 8th element in a red–blue repeating pattern?)
- Determining how and why the same number sequence can be generated by different contexts

**This Unit also focuses on**

- Counting by and adding equal groups, such as 2s and 5s

**Classroom Routines focus on**

- Generating equivalent expressions for a number
- Developing fluency with addition and subtraction
- Using standard notation (+, −, =) to record expressions and write equations
- Using clocks as tools for keeping track of and measuring time
- Naming, notating, and telling time to the hour, half hour, and quarter hour on digital and analog clocks
- Determining what time it will be when given start and elapsed times that are multiples of 15 minutes
- Developing and analyzing visual images for quantities
- Combining groups of 10s and 1s
- Identifying coins and their values
- Adding coin amounts
- Using standard notation (¢, +, =) to write equations
- Using ratio relationships to solve problems
- Making estimates based on data collected over time
- Collecting, counting, representing, discussing, interpreting, and comparing data
- Counting by groups
- Counting a quantity in more than one way
- Using known combinations (e.g., combinations that make 10) to combine numbers
- Developing strategies for solving addition problems with many addends
- Using a place value model to represent a number as 10s and 1s
- 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

## Assessed Benchmarks

- Explain what the numbers in a table represent in a constant ratio situation (involving ratios of 1:2, 1:3, 1:4, 1:5, and 1:6)
- Complete and extend a table to match a situation involving a constant ratio
- Extend a repeating pattern and determine what element of the pattern will be in a particular position (e.g., the 16th position) if the pattern keeps going

# How Many Tens? How Many Ones? (Addition, Subtraction, and the Number System 3)

## Mathematical Emphases

**① Whole-Number Operation** Making sense of and developing strategies to solve addition and subtraction problems with totals up to 100

### Math Focus Points

- Developing efficient methods for adding and subtracting 2-digit numbers
- Adding tens and ones to combine 2-digit numbers
- Noticing what happens to the tens place when a multiple of 10 is added or subtracted
- Adding 2-digit numbers by keeping one number whole
- Naming and comparing strategies for adding and subtracting 2-digit numbers
- Determining the difference between a number and a multiple of 10 up to 100
- Adding 2-digit numbers
- Adding multiples of 5 and 10, up to 100
- Adding coin amounts, up to \$1.00
- Determining the difference between a given amount and \$1.00
- Adding and subtracting 10 and multiples of 10 to/from any number
- Subtracting amounts from 100 or \$1.00, down to 0

**② Counting and Quantity** Developing an understanding of the magnitude and sequence of numbers up to 100

### Math Focus Points

- Becoming familiar with the structure of the 100 chart
- Developing fluency with the sequence of numbers from 1 to 100
- Finding and using patterns in the sequence of numbers
- Using the 100 chart to reason about, and keep track of, information about the magnitude and relationship of numbers

**③ Counting and Quantity** Counting by equal groups

### Math Focus Points

- Skip counting by 2s, 5s, and 10s
- Thinking about the structure of 100 in terms of groups of 5 and 10
- Identifying patterns in the multiples of 2, 5, and 10
- Using the relationship between 5 and 10, and between nickels and dimes, to solve problems

**④ The Base-Ten Number System** Understanding the equivalence of one group and the discrete units that comprise it

### Math Focus Points

- Organizing cubes into 10s and 1s
- Using a place-value model to represent a number as 10s and 1s
- Using coin equivalencies
- Working with the relationship between 1, 10, and 100

**⑤ Whole-Number Computation** Using manipulatives, drawings, tools, and notation to show strategies and solutions

### Math Focus Points

- Writing an equation that represents a problem
- Developing efficient methods for notating addition and subtraction strategies
- Visualizing and making jumps of multiples of 5 on the 100 chart
- Using coins to model adding by 5s and 10s
- Using the 100 chart and the number line to model addition

### Classroom Routines focus on

- Using clocks as tools for keeping track of and measuring time
- Naming, notating, and telling time to the hour, half hour, and quarter hour on digital and analog clocks
- Determining the number of minutes in hours, half hours, and quarter hours
- Counting by 5s
- Determining what time it will be when given start and elapsed times that are multiples of 15 minutes
- Generating equivalent expressions for a number
- Developing fluency with addition and subtraction
- Using standard notation (+, -, =) to record expressions and write equations
- Skip counting by 2s, 5s, and 10s
- Identifying patterns in the multiples of 2, 5, and 10
- Making estimates based on data collected over time
- Collecting, counting, representing, discussing, interpreting, and comparing data
- Counting by groups
- Counting a quantity in more than one way
- Identifying coins and their values
- Identifying and using coin equivalencies
- Using a place-value model to represent a number as 10s and 1s
- 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
- Developing and analyzing visual images for quantities
- Using ratio relationships to solve problems
- Adding coin amounts

## Assessed Benchmarks

- Write an equation that represents an addition or subtraction situation
- Determine the difference between a number and any multiple of 10, up to 100
- Count by 2s, 5s, and 10s, up to 110
- Add multiples of 5, up to 100
- Know coin equivalencies for nickel, dime, and quarter

## Parts of a Whole, Parts of a Group (Fractions)

### Mathematical Emphases

#### ① Rational Numbers Understanding fractions as equal parts of a whole

##### Math Focus Points

- Finding equal parts of a whole and naming them with fractions (e.g.,  $\frac{1}{2}$  is one of two equal parts;  $\frac{1}{3}$  is one of three equal parts, and so on)
- Showing one half of an object
- Determining whether a block is half of another block
- Determining whether a region is half of a given rectangle
- Seeing different ways to make fourths of a square
- Recognizing the equivalence of different fourths of the same object
- Identifying halves, thirds, and fourths of regions
- Identifying and naming fractional parts that have numerators greater than 1 (e.g.,  $\frac{2}{3}$ ,  $\frac{2}{4}$ ,  $\frac{3}{4}$ )

#### ② Rational Numbers Understanding fractions as equal parts of a group

##### Math Focus Points

- Finding equal parts of a group and naming them with fractions (e.g.,  $\frac{1}{2}$  is one of two equal parts;  $\frac{1}{3}$  is one of three equal parts, and so on)
- Finding one half of a set
- Solving problems about finding halves of quantities in different contexts
- Solving problems that result in mixed numbers
- Finding thirds and fourths of sets
- Finding fractions of sets

#### ③ Rational Numbers Using terms and notation

##### Math Focus Points

- Learning the term one half and the notation  $\frac{1}{2}$
- Learning the terms and notation for mixed numbers (e.g., one and a half and  $1\frac{1}{2}$ )
- Learning the term one fourth and the notation  $\frac{1}{4}$
- Learning the term one third and the notation  $\frac{1}{3}$
- Learning the terms and notation for fractions that contain more than one part (e.g.,  $\frac{2}{3}$ ,  $\frac{2}{4}$ , and  $\frac{3}{4}$ )

#### Classroom Routines focus on

- Developing and analyzing visual images for quantities
- Combining groups of tens and ones
- Generating equivalent expressions for a number
- Developing fluency with addition and subtraction
- Using standard notation (+, -, =) to record expressions and write equations
- Using clocks as tools for keeping track of and measuring time
- Naming, notating, and telling time to the hour, half hour, and quarter hour on digital and analog clocks
- Determining the number of minutes in hours, half hours, and quarter hours
- Counting by 5s
- Making predictions about data
- Collecting, counting, representing, discussing, interpreting, and comparing data
- Using known combinations (i.e., combinations that make 10) to combine numbers
- Developing strategies for solving addition problems with many addends

### Assessed Benchmarks

- Identify  $\frac{1}{2}$ ,  $\frac{1}{3}$ , and  $\frac{1}{4}$  of a region
- Find  $\frac{1}{2}$  of a set of objects
- Recognize that a fraction divides the whole into equal parts

# Partners, Teams, and Paper Clips (Addition, Subtraction, and the Number System 4)

## Mathematical Emphases

---

### 1 Whole-Number Operations Adding even and odd numbers

#### Math Focus Points

- Characterizing even and odd numbers as those that do or do not make groups of two (partners) and two equal groups (teams)
- Investigating what happens with partners and teams when two groups are combined
- Making and testing conjectures about adding even and odd numbers
- Finding combinations of odd and even numbers that make given numbers or determining that these combinations are not possible
- Making and justifying generalizations about adding even and odd numbers

### 2 Computational Fluency Knowing addition combinations to $10 + 10$

#### Math Focus Points

- Relating unknown combinations to known combinations
- Developing and achieving fluency with the plus 9 and remaining combinations

### 3 Whole-Number Operations Making sense of and developing strategies to solve addition and subtraction problems with totals to 100

#### Math Focus Points

- Subtracting amounts from 100
- Visualizing, retelling, and modeling the action of addition and subtraction situations
- Developing efficient methods for adding, subtracting, and notating strategies
- Solving subtraction problems by subtracting in parts
- Solving subtraction problems by adding up or subtracting back to find the difference
- Comparing problems in which the amount subtracted differs by 1
- Adding 2-digit numbers by keeping one number whole
- Adding 2-digit numbers by adding tens and ones
- Noticing what happens to place value when two 2-digit numbers with a sum over 100 are combined

### 4 Whole-Number Computation Using manipulatives, drawings, tools, and notation to show strategies and solutions

#### Math Focus Points

- Using cubes and the number line to show how addition combinations are related
- Representing the action of subtraction and addition situations using notation ( $-$ ,  $+$ ,  $=$ )

#### This Unit also focuses on

- Counting a set of objects by equal groups
- Thinking about what happens if you subtract 1 more or 1 less

#### Classroom Routines focus on

- Generating equivalent expressions for a number
- Developing fluency with addition and subtraction
- Using standard notation ( $+$ ,  $-$ ,  $=$ ) to record expressions and write equations
- Using clocks as tools for keeping track of and measuring time
- Naming, notating, and telling time to the hour, half hour, and quarter hour on digital and analog clocks
- Determining what time it will be when given start and elapsed times that are multiples of 15 minutes
- Developing and analyzing visual images for quantities
- Solving problems about an unknown change
- Adding or subtracting 10
- Noticing what happens to the tens place when a multiple of 10 is added or subtracted
- Making predictions about data
- Collecting, counting, representing, discussing, interpreting, and comparing data
- Counting by groups
- Counting a quantity in more than one way
- Developing strategies for solving addition problems with many addends

## Assessed Benchmarks

---

- Subtract 2-digit numbers
- Reason about partners, teams, and leftovers to make and justify generalizations about what happens when even and odd numbers are added
- Add two 2-digit numbers accurately and efficiently
- Demonstrate fluency with addition combinations: plus 9 and remaining combinations

# Measuring Length and Time (Measurement)

## Mathematical Emphases

### ① Linear Measurement Understanding length

#### Math Focus Points

- Comparing two lengths
- Using direct and indirect comparison to identify equal lengths
- Identifying length and width as different dimensions of an object

### ② Linear Measurement Using linear units

#### Math Focus Points

- Iterating units to measure length
- Estimating and calculating length using units that are related by a 2:1 ratio
- Identifying strategies for accurate measurement
- Considering sources of measurement error
- Understanding that different-sized units yield different counts (the smaller the unit, the higher the count)
- Establishing the need for and using a common unit in order to compare measurements
- Identifying and labeling partial units
- Recognizing that, given equal counts of two different units, the larger unit marks off a longer length

### ③ Linear Measurement Measuring with standard units

#### Math Focus Points

- Establishing the need for and using a standard unit of measure
- Creating and using a 12-inch measuring tool
- Iterating a 12-inch measuring tool
- Measuring lengths that are longer than 12 inches
- Using a ruler as a standard measuring tool
- Comparing a variety of measuring tools
- Becoming familiar with the terms inches, feet, yards, centimeters, and meters as standard units of measure
- Using inches, feet, yards, centimeters, and meters to describe lengths
- Comparing centimeters and inches

### ④ Time Representing time and calculating duration

#### Math Focus Points

- Representing time as a horizontal sequence
- Connecting a time, its digital notation, and its representation on an analog clock to a timeline
- Naming and using notation for times that are 30 and 15 minutes before or after the hour
- Associating times with daily events
- Using a timeline to determine duration
- Moving forward and backward along a timeline in multiples of hours, half hours, and quarter hours
- Using a timeline to show a 24-hour period
- Recording events on a timeline

#### This Unit also focuses on

- Solving comparison problems by finding the difference between two measurements

#### Classroom Routines focus on

- Developing and analyzing visual images for quantities
- Combining groups of 10s and 1s
- Using standard notation (+, -, =) to write equations
- Generating equivalent expressions for a number
- Developing fluency with addition and subtraction
- Using standard notation (+, -, =) to record expressions and write equations
- Making predictions about data
- Collecting, counting, representing, discussing, interpreting, and comparing data
- Counting by groups
- Developing strategies for solving addition problems with many addends
- Using known combinations (i.e., combinations that make 10) to combine numbers
- Using a place value model to represent a number as 10s and 1s
- Using clocks as tools for keeping track of and measuring time
- Naming, notating and telling time to the hour, half hour, and quarter hour on digital and analog clocks
- Associating times on the hour and half hour with daily events
- Determining what time it will be when given start and elapsed times that are multiples of 15 minutes
- Seeing a timeline as a representation of events over time
- Using a timeline to keep track of and compare time and events
- Determining the length of a given interval (e.g., 8:30 to 9:30) or activity (e.g., math class)
- Solving problems involving elapsed time

## Assessed Benchmarks

- Identify sources of measurement error
- Recognize that the same count of different-sized units yields different lengths
- Recognize that, when measuring the same length, larger units yield smaller counts
- Measure objects using inches and centimeters
- Use a ruler to measure lengths longer than one foot
- Solve problems involving the beginning time of an event, ending time of an event, and duration of the event; given two of these, find the third for events beginning and ending on the hour or half-hour
- Use a timeline to record and determine duration to the hour or half-hour