

Chapter 8. Curriculum for Grade 1

Part A. Correlation of Objectives with Recommended Textbooks

NUMBER STRAND – Grade 1

Alabama Course of Study	TEAM-Math	Investigations ¹	SAFW ²
<p>1. Demonstrate concepts of number sense by counting forward and backward by ones, twos, fives, and tens up to 100; counting forward and backward from an initial number other than 1; and using multiple representations for a given number.</p> <p>a. Identifying position using the ordinal numbers 1st through 10th</p> <p>b. Using vocabulary, including the terms <i>equal</i>, <i>all</i>, and <i>none</i>, to identify sets of objects</p> <p>c. Recognizing that the quantity remains the same when the spatial arrangement changes</p> <p>d. Determining the value of the digit in the ones place and the value of the digit in the tens place in a numeral</p> <p>e. Determining the value of a number given the number of tens and ones Example: one ten and four ones = 14</p> <p>f. Determining the value of a number that is 10 more or 10 less than a given number</p> <p>g. Determining the monetary value of individual coins and sets of like coins up to \$1.00</p>	N1. Develop an understanding of place value/base 10 to:		
	a. Compose and decompose whole numbers using multiple representations	BNS 1,2,3,4 MT 2,4,5 NGSP 1,2,3	1: 4-8 7
	b. Count by ones, twos, fives, and tens to 100 both forward and backward	BNS 1,2,3,4 MT 2,4,5 NGSP 2:2,9-12	1 7
	c. Know the value of 10 more or 10 less	BNS.3:1-2 NGSP2:6-8,10-12	8: 6 7: 2,4,8
	d. Connect number words and numerals to the quantities they represent	BNS 1:5-6; 2,3,4 MT 2,4,5 NGSP 1,2,3	1 7: 1,4,12 8: 1-5 12: 1,2,6,7
	e. Use models to develop and explain the value of a two-digit number	BNS 2,3 NGSP 2:6-8; 3:10-12	8: 1-6,8 7: 1,4 11: 14 12: 1-2, 6-7
	f. Determine the monetary value of individual coins and sets of coins up to \$1.00	NGSP 2:3-8	9: 1-10
<p>2. Demonstrate conceptual understanding of addition and subtraction by telling number stories; joining, separating, and comparing sets of objects; and applying signs (+ and -) to the actions of joining and separating sets.</p> <p>a. Solving simple word problems using a variety of strategies and distinguishing between relevant and irrelevant information Example: strategies—counting all, counting on, counting back</p> <p>b. Solving problems requiring the addition and subtraction of one- or two-digit numerals without regrouping</p> <p>c. Using three or more addends</p>	N2. Develop an understanding of the operations of addition and subtraction to:		
	a. Represent real life number stories to the actions of joining and separating sets using numbers	MT 2:4; 4,5 BNS 3:9;4	1 2 3
	b. Model and explain addition and subtraction with manipulatives, pictures, and symbols	BNS 4 MT 3:4; 4,5 NGSP 3	1: 4-11 2 3 4 11

¹ The following abbreviations are used for units from *Investigations in Number, Data and Space*: BTHS = “Bigger, Taller, Heavier, Smaller”; BNS = “Building Number Sense”; MT = “Mathematical Thinking at Grade 1”; NGSP = “Number Games and Story Problems.” The numbers refer to the investigations within the units.

² SFAW refers to the *Scott Foresman Addison Wesley* series. The chapter number is given first, followed by the lesson number(s).

Alabama Course of Study	TEAM-Math	Investigations ¹	SFAW ²
3. Demonstrate computational fluency of basic addition and subtraction facts by identifying sums to 10 and differences with minuends of 10 or less.	c. Model and explain fact families	MT. 2:4-6 ; 4:1-4 BNS 2:1,2,6-9; 4:1-5 NGSP 1:1-5,10 ; 3	4: 5-7 11: 8-10
	d. Demonstrate computational fluency with basic addition and subtraction facts through 10	MT 2:4-6 ; 4:1-4,6 BNS 2:1-9; 4-1-10 NGSP 1:1-10; 2:1-8,10-12; 3:1-13	2 Enrichment p. 149
	e. Solve story problems and determine relevant/irrelevant information	BNS 4 MT 3:4; 4 NGSP 1,2,3	1: 13 2: 2 3 4: 1-3,7,9 8: 5 9: 9 10: 13 11: 1-5, 11-14 12: 5,10
	f. Use three or more addends	NGSP 2:13	1: 8 7: 9 11: 6 Enrichment p.451
	g. Solve addition/subtraction problems using 1- or 2-digit numbers	BNS 4 MT 2;4 NGSP 1,2,3	2,3,4,11, and 12
4. Identify parts of a whole with two, three, or four equal parts. a. Dividing an object into equal parts	N3. Develop an understanding of fractions to:		
	a. Connect everyday situations to common fractions	BNS1:2 <u>BTHS</u> 2:2-4; 3:2	5: 10-15
	b. Compare and represent fractions in multiple ways using manipulatives, pictures, and words ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$)	<u>BTHS</u> 2:2-4	5: 10-12
	c. Solve real life fraction problems using figures, sets of objects, and linear models	<u>BTHS</u> 2:2-4	5: 13-15
	d. Identify parts of a whole with two, three, or four equal parts	<u>BTHS</u> 2:2-4; 3:2	5: 10-15
	e. Divide an object or set of objects into equal parts	<u>BTHS</u> 2:2-4; 4:2	5: 10-15

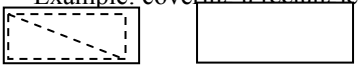
ALGEBRA STRAND - Grade 1

Alabama Course of Study	TEAM-Math	Investigations ³	SFAW ⁴
5. Create repeating patterns. a. Describing characteristics of patterns b. Extending patterns including number patterns c. Identifying patterns in the environment	A1. Understand patterns, relations, and functions to:		
	a. Sort, classify, and order by size, number, and other properties	MT 3,5 BNS 1,2 SQSR 3:2-3 QSBT 1:13 -15 NGSP 2:2, 6-9; 3	1: 2-3 7: 11
	b. Recognize, describe, and extend shape-patterns, numeric-patterns, and simple functions	MT 3 BNS 3:8 SQSR 3:2-3 QSBT 1:13 -15 NGSP 2:2, 6-9	1: 1.3 7: 7-9
	c. Use graphic organizers to solve problems involving number patterns and functions	SQSR 3:2-3 QSBT 1:13-15 NGSP 2:2, 6-9	7: 7-9
	d. Identify patterns in the environment	MT 3:3-4 SQSR 3:2-3 QSBT 1:13-15 NGSP 2:2	1 7: 7-9
	e. Create a pattern	MT 3:1 BNS 3:8 QSBT 1:13-15	1 and 2 7: 7-9
	f. Translate patterns from one representation to another	MT 3:2 BNS 3:1-2,5-9 SQSR 3:2-3 QSBT 1:13-15 NGSP 2:2, 6-9	1 and 2 7: 7-9
6. Solve problems using the identity and commutative properties of addition.	A2. Represent number sentences using algebraic symbols		
	a. Understand the use of symbols (+, -, =, <, >)	BNS 4 NGSP 1,2,3	1 4: 4-7
7. Demonstrate relationships between operations. Example: addition and subtraction fact families— $5 + 2 = 7$ $7 - 2 = 5$ $2 + 5 = 7$ $7 - 5 = 2$	b. Solve problems using identity (+0) and commutative property	BNS 2:1-2,6-9; 4:1, 3-10 MT 2:4-6 4:1-4 NGSP 1:1-5, 7-10, 3:1, 6-13	2: 4 3: 2,6
	A3. Describe qualitative change (students growing taller)		

³ The following abbreviations are used for units from *Investigations in Number, Data and Space*: BNS = “Building Number Sense”; MT = “Mathematical Thinking at Grade 1”; NGSP = “Number Games and Story Problems”; QSBT = “Quilt Stories and Block Towns”; SQSR = “Survey Questions and Secret Rules” The numbers refer to the investigations within the units.

⁴ SFAW refers to the *Scott Foresman Addison Wesley* series. The chapter number is given first, followed by the lesson number(s).

GEOMETRY STRAND – Grade 1

Alabama Course of Study	TEAM-Math	Investigations ⁵	SFAW ⁶
8. Differentiate among plane shapes, including circles, squares, rectangles, and triangles. a. Describing similarities and differences between plane and solid shapes Examples: round, flat, curved, straight b. Transferring shape combinations from one representation (dimension) to another Examples: making a particular grouping of blocks by using a drawing of the grouping, making a drawing of a specific arrangement of blocks c. Combining shapes to fill in the area of a given shape Example: covering a rectangle with two triangles 	G1. Describe characteristics and properties of two and three-dimensional geometric shapes to:		
	a. Explain similarities and differences between plane and solid shapes (sort by attribute)	QSBT 1; 2:1-10; 3:1-5	5: 1-12 8: 11
	b. Recognize and name shapes in the environment	QSBT 1; 2; 3:1-5	5: 1-12, 16
	c. Build 3D shapes using 2D picture	QSBT 1:8-10; 3:1	5: 3
	d. Investigate putting together and taking apart two and three-dimensional shapes	QSBT 1:2-10,13-15; 2:4-10; 3: 1-5 Appendix: <i>Shapes</i> Tutorial	5: 3,9
d. Changing the position of objects or shapes by sliding (translation) and turning (rotation)	G2. Develop an understanding of positions, directions, and distance to:		
	a. Describe and name relative positions in space using positional terms, including ordinals	QSBT 3:6-7 MT 2:2-3	5: 6
	b. Describe movement using directional terms	QSBT 3:6-7	8: 15-16
	c. Draw or build maps of familiar space	QSBT 3:6-7	
	d. Describe movement of objects from one place to another	QSBT 3:6-7	8: 15,16
e. Recognizing real-life examples of line symmetry Example: recognizing a line of symmetry in a piece of folded paper or an orange cut in half	G3. Use transformations and symmetry to:		
	a. Identify and create shape compositions	QSBT 1,2, 3:1-5	5: 7
	b. Demonstrate the concept that changing position does not change the properties of a shape or an object	QSBT 1:3-10, 13-15	5: 8,9
	c. Identify real-life examples of line symmetry		5: 7
9. Identify solid shapes in the environment, including cubes, rectangular prisms, cones, spheres, and cylinders.	G4. Use visualization and spatial reasoning to:		
	a. Create mental images of geometric shapes using spatial memory and visualization	QSBT 1:3-6; 2: 8-10; 3	5: 3,9
	b. Recognize and represent shapes from a different perspective (puzzles)	QSBT 1,2,3	5: 1,3,6,9
	c. Locate shapes and structures in the environment	QSBT 1:1 3:3-5, 6-7	5: 1

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MEASUREMENT STRAND – Grade 1

Alabama Course of Study	TEAM-Math	Investigations⁷	SFAW⁸
10. Compare objects according to length, weight and capacity a. Measuring the length of objects using a variety of nonstandard units Examples: using objects of unequal length —finding the number of pencils needed to measure length of desk using objects of equal length —comparing number of equally-sized paper clips needed to measure length of desk b. Ordering according to attributes	M1. Compare measurable attributes of objects to:		
	a. Demonstrate and use nonstandard and standard units of linear measurement a. Compare and order objects according to weight, area, length, and volume	BTHS 1:1-6; 3:1-5 QSBT 3:6-7 BTHS 1:1-6; 2:2-7; 3:1-5 QSBT 3:6-7	10: 1-14 10: 1-2, 9-13
11. Identify the hour using analog and digital clocks a. Identifying the half hour using analog and digital clocks	M2. Identify hour and half hour using analog and digital clocks		6: 2-5,8,11
12. Locate days, dates, and months on a calendar Examples: locating the third Thursday of the month on a calendar; recognizing that today is Tuesday, January 24 a. Using vocabulary associated with a calendar Example: using the words yesterday, today, tomorrow, day before, day after	M3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow	Classroom Routines MT 5:2	6: 9-11 7: 7

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⁸ SFAW refers to the *Scott Foresman Addison Wesley* series. The chapter number is given first, followed by the lesson number(s).

DATA ANALYSIS AND PROBABILITY STRAND – Grade 1

Alabama Course of Study	TEAM-Math	Investigations ⁹	SFAW ¹⁰
13. Organize objects or information into predetermined and labeled data displays, including pictographs, tally charts, bar graphs, or double-loop Venn diagrams. a. Generating simple questions for data collection Example: “Do you like chocolate ice cream?” b. Creating displays with appropriate labels	1. Collect, organize, and display data collected from one’s environment to:		
	a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double overlapping Venn diagrams, bar graphs, tallies, and other models)	MT 5: 3-6 SQSR 2:1-2,5-6; 3: 1-3; 4: 2-5 Classroom Routines (All Units)	8: 12-14,17 5: 9,15 10: 17 11: 7 12: 10
	b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	MT 5: 3-6 SQSR 2: 1-2,5-6; 3: 1-3; 4: 2-5 Classroom Routines (All Units)	8: 12-14 5: 9
	c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	MT 5: 3-6 SQSR 2:1-2,5-6; 3:1-3; 4: 2-5 Classroom Routines (All Units)	8: 12, 14 10: 17 11: 7 12: 10
	d. Generate questions and determine the data needed to arrive at answers	MT 5: 3,4 SQSR 2:1-2,5-6; 3:1-3; 4:2-5 Classroom Routines (All Units)	8: 12-13 10: 18
	2. Communicate events and outcomes of everyday events and simple investigations as possible/impossible; or as likely/unlikely	Classroom Routines (All Units)	10: 17

⁹ The following abbreviations are used for units from *Investigations in Number, Data and Space*: MT = “Mathematical Thinking at Grade 1”; SQSR = “Survey Questions and Secret Rules.” The numbers refer to the investigations within the units.

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Part B. Suggested Sequence of Instructions

We first provide charts that suggest the quarter in which attention to a particular objective should occur, organized by the objectives from TEAM-Math.

NUMBER STRAND – First Grade

TEAM-Math Objectives	Quarter			
	1	2	3	4
1. Develop and understanding of place value /base 10 to:				
a. Compose and decompose whole numbers using multiple representations	X	X	X	X
b. Count by ones, twos, fives, and tens to 100 both forward and backward	X		X	X
c. Know the value of 10 more or 10 less	X		X	X
d. Connect number words and numerals to the quantities they represent	X		X	X
e. Use models to develop and explain the value of a two-digit number			X	X
f. Determine the monetary value of individual coins and sets of coins up to \$1.00	X			X
2. Develop and understanding of the operations of addition and subtraction to:				
a. Represent real life number stories to the actions of joining and separating sets using numbers	X	X	X	X
b. Model and explain addition and subtraction with manipulatives, pictures, and symbols	X	X	X	X
c. Model and explain families		X	X	X
d. Demonstrate computational Fluency with basic addition and subtraction facts through 10		X	X	X
e. Solve story problems and determine relevant/irrelevant information	X	X		X
f. Use three or more addends				X
g. Solve addition/subtraction problems using 1- or 2-digit numbers	X	X		X
3. Develop an understanding of fractions to:				
a. Connect to everyday situations to common fractions			X	
b. Compare and represent fractions in multiple ways using manipulatives, pictures, and words (1/2, 1/3, 1/4)			X	
c. Solve real life fraction problems using figures, sets of objects, and linear models			X	
d. Identify parts of a whole with two, three, or four equal parts			X	
e. Divide an object or set of objects into equal parts			X	

ALGEBRA STRAND – First Grade

TEAM-Math Objectives	Quarter			
	1	2	3	4
1. Understand patterns, relations, and functions to:				
a. Sort, classify, and order by size, number, and other properties	X		X	
b. Recognize, describe, and extend shape-patterns, numeric-patterns, and simple functions	X		X	
c. Use graphic organizers to solve problems involving number patterns and functions			X	
d. Identify patterns in the environment	X		X	
e. Create a pattern	X		X	
f. Translate patterns from one representation to another	X		X	
2. Represent sentences using algebraic symbols				
a. Understand the use of symbols (+, -, =, <, >)		X	X	X
b. Solve problems using the identity (+0) and commutative property		X	X	X
3. Describe qualitative change (students growing taller)			X	X

GEOMETRY STRAND – First Grade

TEAM-Math Objectives	Quarter			
	1	2	3	4
1. Describe characteristics and properties of two and three-dimensional geometric shapes to:				
a. Explain similarities and differences between plane and solid shapes (sort by attribute)		X	X	
b. Recognize and name shapes in the environment		X	X	
c. Build 3D shapes using 2D picture		X	X	
d. Investigate putting together and taking apart two and three-dimensional shapes		X	X	
2. Develop an understanding of positions, directions, and distance to:				
a. Describe and name relative positions in space using positional terms, including ordinals	X		X	
b. Describe movement using directional terms			X	
c. Draw or build maps of familiar space			X	
d. Describe movement of objects from place to another			X	
3. Use transformations and symmetry to:				
a. Identify and create shape compositions			X	
b. Demonstrate the concept that changing position does not change the properties of a shape or an object			X	
c. Identify real-life examples of line symmetry			X	
4. Use visualization and spatial reasoning to:				
a. Create mental images of geometric shapes using spatial memory and visualization		X	X	
b. Recognize and represent shapes from a different perspective (puzzles)		X	X	
c. Locate shapes and structures in the environment		X	X	

MEASUREMENT STRAND – First Grade

TEAM-Math Objectives	Quarter			
	1	2	3	4
1. Compare measurable attributes of objects to:				
a. Demonstrate and use nonstandard and standard units of linear measurement				X
b. Compare and order objects according to weight, area, length, and volume				X
2. Identify hour and half hour using analog and digital clocks			X	X
3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow	X	X	X	X

DATA ANALYSIS AND PROBABILITY STRAND – First Grade

TEAM-Math Objectives	Quarter			
	1	2	3	4
1. Collect, organize, and display data collected from one's environment to:				
a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double overlapping Venn diagrams, bar graphs, tallies, and other models)	X	X	X	X
b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	X	X	X	X
c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	X	X	X	X
d. Generate questions and determine the data needed to arrive at answers	X	X	X	X
2. Communicate events and outcomes of everyday events and simple investigations as possible/impossible; or as likely/unlikely	X	X	X	X

The K-2 curriculum has been organized into eight units for each grade level. This will allow for two units during each nine week period. The units will take from three to six weeks to complete, based on content and student need. The pacing of the units is left up to individual schools and teachers, although some units build on content presented in other units.

Each unit represents a general mathematics concept to be emphasized. These content objectives are the focus of each unit.

Some objectives are found in more than one unit. When this occurs, it usually means that the objective needs to be expanded to cover higher numbers or more challenging content. However in all grades, the Data Analysis objectives and the calendar math objective appear in every unit. This signifies continual exposure to these objectives through daily classroom routines.

The resource list for each unit references the TEAM-Math adopted textbooks. They are *Investigations in Number, Data, and Space* and *Scott Foresman – Addison Wesley Mathematics*. Some schools or teachers may use the *Investigations* texts entirely, while others may use *Scott Foresman*. Most teachers will benefit from using a combination of the two. Scott Foresman publishes both and provides a Joint Usage Plan to guide teachers in integrating the two textbooks into the classroom plan. Teachers cannot use all the resources listed, so they must choose the best ones for them. All of the *Investigations* units are referenced, although most adoptions only include the three units recommended in the TEAM-Math Textbook Review.

An additional part of the curriculum will be the mastery of basic addition and subtraction facts. First Grade will focus on mastery of facts through 10. Second Grade will focus on mastery of facts through 18.

Detailed lists of objectives covered in each unit are provided in the following pages.

Suggested Pacing Guide

Number Sense
Foundations of Addition & Subtraction
Addition and Subtraction Fluency
Introduction of Geometry
Spatial Understanding of Geometry
Place Value
Measurement
Operational Extensions

The main thing to remember when planning the order of the units is that *Number Sense* needs to be first, followed by *Foundations of Addition and Subtraction*. The year should end with *Operational Extensions*. The *Introduction to Geometry* unit should be completed before the *Spatial Understanding of Geometry* unit. Otherwise, units can be done in any order, based on school and teacher preference.

Although many references are listed in the curriculum guide, teachers must also choose the ones that they will use. The following list is recommended as a place to start planning, although the Joint Usage Plan by Scott Foresman can also be a valuable planning guide.

<u>Unit</u>	<u>Suggested Resource</u>
Number Sense 4 weeks, suggested	Chapter 1, <i>Scott Foresman Mathematics</i> Investigations 1 and 2, <i>Building Number Sense</i>
Foundations of Addition and Subtraction 5 weeks, suggested	Investigation 4, <i>Building Number Sense</i> Chapter 2, Scott Foresman <i>Mathematics</i>
Addition and Subtraction Fluency 6 weeks, suggested	Investigations 1 and 3, <i>Number Games & Story Problems</i> Chapters 3 and 4, Scott Foresman <i>Mathematics</i>
Introduction to Geometry 4 weeks suggested	Investigations 1 and 2, <i>Quilt Squares & Block Towns</i>
Spatial Understanding of Geometry 4 weeks, suggested	Investigation 3, <i>Quilt Squares & Block Towns</i> Chapter 5 (Part C), Scott Foresman <i>Mathematics</i>
Place Value 6 weeks, suggested	Investigation 3, <i>Building Number Sense</i> Investigation 2, <i>Number Games and Story Problems</i> 7 and 8, Scott Foresman <i>Mathematics</i>
Measurement 4 Weeks , suggested	6 and 10, Scott Foresman <i>Mathematics</i>
Operational Extensions 6 weeks, suggested	Chapters 9,11,12 Scott Foresman <i>Mathematics</i>

Number Sense – Grade 1

This unit focuses on number composition, patterning, sequential number order, and multiple representation of number. Taking apart numbers and putting them back together is the foundation for understanding operations. Understanding relationships in patterns and between numbers, together with a sense of numerical order, leads to understanding the number system. Being able to show characteristics of number through words, pictures, and numerals lays the base for universal mathematical communication.

TEAM-Math	Investigations ¹¹	SFAW ¹²
N1. Develop an understanding of place value/base 10 to:		
a. Compose and decompose whole numbers using multiple representations	BNS: 1,2,3,4 MT 2,4,5	1: 4-8
b. Count by ones, twos, fives, and tens to 100 both forward and backward	BNS: 1,2,3,4 MT 2,4,5	1
d. Connect number words and numerals to the quantities they represent	BNS: 1:5-6; 2,3,4 MT 2,4,5	1
N2. Develop an understanding of the operations of addition and subtraction to:		
a. Represent real life number stories to the actions of joining and separating sets using numbers	MT 2:4, 4,5 BNS: 3:9, 4	1
A1. Understand patterns, relations, and functions to:		
a. Sort, classify, and order by size, number, and other properties	MT 3,5 BNS: 1,2	1
b. Recognize, describe, and extend shape-patterns, numeric-patterns, and simple functions	MT 3 BNS: 3:8	1
d. Identify patterns in the environment	MT 3:3-4 SQSR: 3:2-3	1
e. Create a pattern	MT 3:1 BNS: 3:8	1
f. Translate patterns from one representation to another	MT 3:2 BNS: 3:1-2,5-9	1
G2. Develop an understanding of positions, directions, and distance to:		
a. Describe and name relative positions in space using positional terms, including ordinals	MT 2:2-3	
M3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow	Classroom Routines (All Units) MT 5:2	6:9-11 7:7
D1. Collect, organize, and display data collected from one's environment to	Classroom Routines (All Units)	
a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double overlapping Venn diagrams, bar graphs, tallies, and other models)	MT 5: 3-6	8: 9-14
b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	MT 5: 3-6	8: 16
c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	MT 5: 3-6	
d. Generate questions and determine the data needed to arrive at answers	MT 5: 3	

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Foundations of Addition and Subtraction – Grade 1

This unit focuses on the concept of joining and separating sets. First graders are expected to communicate this conceptual understanding through words, pictures, and numbers. Mathematical symbols representing joining and separating sets are introduced in this unit.

TEAM-Math	Investigations ¹³	SFAW ¹⁴
N1. Develop an understanding of place value/base 10 to:		
a. Compose and decompose whole numbers using multiple representations	BNS 1,2,3,4; MT 2,4,5 NGSP 1,2,3	1:4-8 7
c. Know the value of 10 more or 10 less	BNS: 3:1-2 NGSP 2:6-8, 10-12	8:6 7:2,4,8
N2. Develop an understanding of the operations of addition and subtraction to:		
a. Represent real life number stories to the actions of joining and separating sets using numbers	MT 2:4, 4,5; BNS 3:9, 4	2; 3
b. Model and explain addition and subtraction with manipulatives, pictures, and symbols	BNS 4; MT 3:4, 4:5 NGSP 3	1:4-11; 2; 3; 4 11
e. Solve story problems and determine relevant/irrelevant information	BNS: 4 MT 3:4, 4 NGSP 1,2,3	1:13; 2:2; 3 4:1-3, 7,9; 8:5 9:9; 10:13 11:1-5, 11:11-14 12:5,10
g. Solve addition/subtraction problems using 1- or 2-digit numbers	BNS: 4; MT 2,4 NGSP 1,2,3	2,3,4, 11,12
A2. Represent number sentences using algebraic symbols		
a. Understand the use of symbols (+, -, =, <, >)	BNS 4 NGSP 2,3,4	1 4:4-7
b. Solve problems using identity (+0) and commutative property	BNS 2:1-2, 6-9, 4:1, 3-10 MT 2:4-6, 4:1-4 NGSP 1:1-5,7-10; 3:1, 6-13	2:4 3:2,6
M3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow	Classroom Routines (All Units) MT 5:2	6:9-11 7:7
D1. Collect, organize, and display data collected from one's environment to:	Classroom Routines (All Units)	
a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double over-lapping Venn diagrams, bar graphs, tallies, and other models)	MT 5: 3-6	8:9-14
b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	MT 5: 3-6	8:16
c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	MT 5: 3-6	
d. Generate questions and determine the data needed to arrive at answers	MT 5: 3	

¹³ The following abbreviations are used for units from *Investigations in Number, Data and Space*: BNS = “Building Number Sense;” MT = “Mathematical Thinking at Grade 1”; NGSP = “Number Games and Story Problems.” The numbers refer to the investigations within the units.

¹⁴ SFAW refers to the *Scott Foresman Addison Wesley* series. The chapter number is given first, followed by the lesson number(s).

Addition and Subtraction Fluency – Grade 1

This unit introduces computational mastery of basic facts. Foundational skills needed for this mastery include an understanding of fact families, the ability to use the identity property of addition and subtraction (0), an understanding of the commutative property of addition, and the ability to add and subtract both vertically and horizontally. Computational mastery begins here. Complete mastery of basic facts to 10 is not expected until the end of first grade.

TEAM-Math	Investigations ¹⁵	SFAW ¹⁶
N1. Develop an understanding of place value/base 10 to:		
a. Compose and decompose whole numbers using multiple representations	BNS 1,2,3,4; MT 2,4,5 NGSP 1,2,3	1:4-8 7
N2. Develop an understanding of the operations of addition and subtraction to:		
a. Represent real life number stories to the actions of joining and separating sets using numbers	MT 2:4, 4,5; BNS 3:9, 4	2; 3
b. Model and explain addition and subtraction with manipulatives, pictures, and symbols	BNS 4; MT 3:4, 4,5 NGSP 3	1:4-11; 2; 4 3; 4; 11
c. Model and explain fact families	MT 2:4-6; 4:1-4 BNS 2:1,2,6-9; 4:1-5 NGSP 1:1-5,10; 3	4:5-7 11:8-10
d. Demonstrate computational fluency with basic addition and subtraction facts through 10	MT 2:4-6; 4:1-4,6; BNS 2:1-9; 4:1-10 NGSP 1:1-10; 2:1-8, 10-12; 3:1-13	2 Enrichment p. 149
e. Solve story problems and determine relevant/irrelevant information	BNS 4 MT 3:4, 4 NGSP 1,2,3	1:13; 2:2; 3 4:1-3, 7,9 8:5; 9:9; 10:13 11:1-5, 11-14 12:5,10
g. Solve addition/subtraction problems using 1- or 2-digit numbers	BNS 4; MT 2,4; NGSP 1,2,3	2, 3, 4, 11,12
A2. Represent number sentences using algebraic symbols		
a. Understand the use of symbols (+, -, =, <, >)	BNS 4; NGSP 2,3,4	1; 4:4-7
b. Solve problems using identity (+0) and commutative property	BNS 2:1-2, 6-9; 4:1, 3-10 MT 2:4-6; 4:1-4 NGSP 1:1-5,7-10; 3:1, 6-13	2:4 3:2,6
M3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow	Classroom Routines (All Units); MT 5:2	6:9-11; 7:7
D1. Collect, organize, and display data collected from one's environment to:	Classroom Routines (All Units)	
a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double over-lapping Venn diagrams, bar graphs, tallies, and other models)	MT 5: 3-6	8:9-14
b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	MT 5: 3-6	8:16
c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	MT 5: 3-6	
d. Generate questions and determine the data needed to arrive at answers	MT 5:3	

¹⁵ The following abbreviations are used for units from *Investigations in Number, Data and Space*: BNS = “Building Number Sense;” MT = “Mathematical Thinking at Grade 1”; NGSP = “Number Games and Story Problems.” The numbers refer to the investigations within the units.

¹⁶ SFAW refers to the *Scott Foresman Addison Wesley* series. The chapter number is given first, followed by the lesson number(s).

Introduction to Geometry – Grade 1

This unit introduces characteristics and relationships of 2- and 3- dimensional shapes. In addition to observing, naming and describing shapes, first graders are introduced to the composition and decomposition of shapes, the use of shapes in patterns, and the use of shapes in building 2- and 3-D designs.

TEAM-Math	Investigations¹⁷	SFAW¹⁸
G1. Describe characteristics and properties of two and three-dimensional geometric shapes to:		
a. Explain similarities and differences between plane and solid shapes (sort by attribute)	QSBT 1; 2:1-10; 3:1-5	5:1-12; 8:11
b. Recognize and name shapes in the environment	QSBT 1, 2; 3:1-5	5:1-12, 16
c. Build 3D shapes using 2D picture	QSBT 1:8-10; 3:1	5:3
d. Investigate putting together and taking apart two and three-dimensional shapes	QSBT 1:2-10,13-15; 2:4-10; 3: 1-5 Appendix: <i>Shapes</i> Tutorial	5:3,9
G4. Use visualization and spatial reasoning to:		
a. Create mental images of geometric shapes using spatial memory and visualization	QSBT 1:3-6; 2: 8-10; 3	5:3,9
b. Recognize and represent shapes from a different perspective (puzzles)	QSBT 1,2,3	5:1,3,6,9
c. Locate shapes and structures in the environment	QSBT 1:1; 3:3-5, 6-7	5:1
M3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow	Classroom Routines (All Units) MT 5:2	6:9-11 7:7
D1. Collect, organize, and display data collected from one's environment to:	Classroom Routines (All Units)	
a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double over-lapping Venn diagrams, bar graphs, tallies, and other models)	MT 5:3-6	8:9-14
b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	MT 5:3-6	
c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	MT 5: 3-6	
d. Generate questions and determine the data needed to arrive at answers	MT 5: 3	

¹⁷ The following abbreviations are used for units from *Investigations in Number, Data and Space*: MT = “Mathematical Thinking at Grade 1”; QSBT = “Quilt Squares and Block Towns.” The numbers refer to the investigations within the units.

¹⁸ SFAW refers to the *Scott Foresman Addison Wesley* series. The chapter number is given first, followed by the lesson number(s).

Spatial Understanding of Geometry – Grade 1

This unit extends the study of shape relationships. It focuses on the description, the composition, and the division of space using objects, shapes, and relative position. Fractions are introduced. Movement is explored using the concepts of position, direction, and distance.

TEAM-Math	Investigations ¹⁹	SFAW ²⁰
N3. Develop an understanding of fractions to:		
a. Connect everyday situations to common fractions	BNS 1:2	5:10-15
b. Compare and represent fractions in multiple ways using manipulatives, pictures, and words ($\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$)	BTHS 2:2-4	5:10-12
c. Solve real life fraction problems using figures, sets of objects, and linear models	BTHS 2:2-4	5:13-15
d. Identify parts of a whole with two, three, or four equal parts	BTHS 2:2-4; 3:2	5:10-15
e. Divide an object or set of objects into equal parts	BTHS 2:2-4; 4:2	5:10-15
A1. Understand patterns, relations, and functions to:		
a. Sort, classify, and order by size, number, and other properties	MT 3,5; BNS 1,2 SQSR 3:2-3; QSBT 1:13 -15 NGSP 2:2, 6-9; 3	1:2-3 7:11
b. Recognize, describe, and extend shape-patterns, numeric-patterns, and simple functions	MT 3; BNS 3:8; SQSR 3:2-3 QSBT 1:13 -15; NGSP 2:2, 6-9	1: 1.3 7:7-9
d. Identify patterns in the environment	MT 3:3-4; SQSR 3:2-3 QSBT 1:13-15; NGSP 2:2	1 7:7-9
e. Create a pattern	MT 3:1; BNS 3:8 QSBT 1:13-15	1; 2 7:7-9
f. Translate patterns from one representation to another	MT 3:2; BNS 3:1-2,5-9 SQSR 3:2-3; QSBT 1:13-15 NGSP 2:2, 6-9	1 and 2 7:7-9
A3. Describe qualitative change (students growing taller)		
G1. Describe characteristics and properties of two and three-dimensional geometric shapes to:		
a. Explain similarities and differences between plane and solid shapes (sort by attribute)		5:1-12; 8:11
b. Recognize and name shapes in the environment		5:1-12, 16
c. Build 3D shapes using 2D picture		5:3
d. Investigate putting together and taking apart two and three-dimensional shapes	QSBT 1:2-10,13-15; 2:4-10; 3: 1-5 Appendix: <i>Shapes</i> Tutorial	5:3,9
G2. Develop an understanding of positions, directions, and distance to:		
a. Describe and name relative positions in space using positional terms, including ordinals	QSBT 3:6-7; MT 2:2-3	5:6
b. Describe movement using directional terms	QSBT 3:6-7	8:15-16
c. Draw or build maps of familiar space	QSBT 3:6-7	
d. Describe movement of objects from one place to another	QSBT 3:6-7	8:15,16
G3. Use transformations and symmetry to:		
d. Identify and create shape compositions	QSBT 1,2; 3:1-5	5:7

¹⁹ The following abbreviations are used for units from *Investigations in Number, Data and Space*: BSN= “Building Number Sense”; BTHS = “Bigger, Taller; Heavier; Smaller”; MT = “Mathematical Thinking at Grade 1”; QSBT = “Quilt Squares and Block Towns.” The numbers refer to the investigations within the units.

²⁰ SFAW refers to the *Scott Foresman Addison Wesley* series. The chapter number is given first, followed by the lesson number(s).

TEAM-Math	Investigations¹⁹	SFAW²⁰
b. Demonstrate the concept that changing position does not change the properties of a shape or an object	QSBT 1:3-10, 13-15	5:8,9
c. Identify real-life examples of line symmetry		5:7
G4. Use visualization and spatial reasoning to:		
a. Create mental images of geometric shapes using spatial memory and visualization	QSBT 1:3-6; 2: 8-10; 3	5:3,9
b. Recognize and represent shapes from a different perspective (puzzles)	QSBT 1,2,3	5:1,3,6,9
c. Locate shapes and structures in the environment	QSBT 1:1; 3:3-5, 6-7	5:1
M3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow	Classroom Routines (All Units) MT 5:2	6:9-11 7:7
D1. Collect, organize, and display data collected from one's environment to:	Classroom Routines (All Units)	
a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double over-lapping Venn diagrams, bar graphs, tallies, and other models)	MT 5: 3-6	8:9-14
b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	MT 5: 3-6	8:16
c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	MT 5: 3-6	
d. Generate questions and determine the data needed to arrive at answers	MT 5: 3	

Place Value – Grade 1

This unit focuses on understanding two digit numbers and their operations. Number order, composition of number, and representation of numbers to 100 are included in this unit. Addition and subtraction of two digit numbers is introduced.

TEAM-Math	Investigations²¹	SFAW²²
N1. Develop an understanding of place value/base 10 to:	BNS 1,2,3,4; MT 2,4,5 NGSP 1,2,3	1:4-8 7
a. Compose and decompose whole numbers using multiple representations	BNS 1,2,3,4 MT 2,4,5 NGSP 2: 2, 9-12	1 7
b. Count by ones, twos, fives, and tens to 100 both forward and backward	BNS 3:1-2 NGSP 2:6-8,10-12	
c. Know the value of 10 more or 10 less	BNS 1:5-6, 2,3,4 MT 2,4,5; NGSP 1,2,3	
d. Connect number words and numerals to the quantities they represent		1; 7:1,4,12 8:1-5; 12:1,2,6,7
e. Use models to develop and explain the value of a two-digit number	BNS 2,3 NGSP 2: 6-8, 3:10-12	8:1-6,8; 7:1,4 11:14; 12:1-2, 6-7
N2. Develop an understanding of the operations of addition and subtraction to:		
a. Represent real life number stories to the actions of joining and separating sets using numbers	MT 2:4, 4,5 BNS: 3:9, 4	2 3

²¹ The following abbreviations are used for units from *Investigations in Number, Data and Space*: BNS = “Beginning Number Sense”; MT = “Mathematical Thinking at Grade 1”; NGSP = “Number Games and Story Problems.” The numbers refer to the investigations within the units.

²² SFAW refers to the *Scott Foresman Addison Wesley* series. The chapter number is given first, followed by the lesson number(s).

TEAM-Math	Investigations²¹	SFAW²²
b. Model and explain addition and subtraction with manipulatives, pictures, and symbols	BNS 4; MT 3:4, 4,5 NGSP 3	1:4-11; 2; 3 4; 11
c. Solve story problems and determine relevant/irrelevant information	BNS 4 MT 3:4, 4 NGSP 1,2,3	1:13; 2:2; 3 4:1-3, 7,9; 8:5 9:9; 10:13 11:1-5, 11-14 12:5,10
d. Solve addition/subtraction problems using 1- or 2-digit numbers	BNS 4; MT 2,4; NGSP 1,2,3	2,3,4,11,12
A1. Understand patterns, relations, and functions to:		
a. Sort, classify, and order by size, number, and other properties	MT 3,5; BNS 1,2 SQSR 3:2-3; QSBT 1:13 -15 NGSP 2:2, 6-9; 3	1:2-3 7:11
b. Recognize, describe, and extend shape-patterns, numeric-patterns, and simple functions	MT 3; BNS 3:8 SQSR 3:2-3; QSBT 1:13 -15 NGSP 2:2, 6-9	1: 1.3 7:7-9
c. Use graphic organizers to solve problems involving number patterns and functions	SQSR 3:2-3; QSBT 1:13-15 NGSP 2:2, 6-9	7:7-9
d. Translate patterns from one representation to another	MT 3:2; BNS 3:1-2,5-9 SQSR 3:2-3; QSBT 1:13-15 NGSP 2:2, 6-9	1 2 7:7-9
A2. Represent number sentences using algebraic symbols		
a. Understand the use of symbols (+, -, =, <, >)	BNS 4; NGSP 2,3,4	1; 4:4-7
b. Solve problems using identity (+0) and commutative property	BNS 2:1-2, 6-9; 4:1, 3-10 MT 2:4-6; 4:1-4 NGSP 1:1-5,7-10; 3:1, 6-13	2:4 3:2,6
M2. Analyze and use analog and digital clocks to identify hour and half hour		
M3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow		
Classroom Routines (All Units) MT 5:2		6:9-11 7:7
D1. Collect, organize, and display data collected from one's environment to:		
Classroom Routines (All Units)		
a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double over-lapping Venn diagrams, bar graphs, tallies, and other models)	MT 5: 3-6	8:9-14
b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	MT 5:3-6	8:16
c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	MT 5: 3-6	
d. Generate questions and determine the data needed to arrive at answers	MT 5: 3	

Measurement – Grade 1

This unit focuses on the process of measuring length, weight, area, volume, and time. Standard tools for linear measurement and time measurement are introduced.

TEAM-Math	Investigations ²³	SFAW ²⁴
M 1. Compare measurable attributes of objects to:		
a. Demonstrate and use nonstandard and standard units of linear measurement	BTHS 1:1-6, 3:1-5; QSBT 3:6-7	10:1-14
b. Compare and order objects according to weight, area, length, and volume	BTHS 1:1-6; 2:2-7; 3:1-5 QSBT 3:6-7	10: 1-2, 9-13
M 2. Analyze and use analog and digital clocks to identify hour and half hour	(grade 2)	6:2-5,8,11
M 3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow	Classroom Routines (All Units) MT 5:2	6:9-11 7:7
D 1. Collect, organize, and display data collected from one’s environment to:	Classroom Routines (All Units)	
a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double over-lapping Venn diagrams, bar graphs, tallies, and other models)	MT 5, Sessions 3-6	8:9-14
b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	MT 5, Sessions 3-6	8:16
c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	MT 5, Sessions 3-6	
d. Generate questions and determine the data needed to arrive at answers	MT 5: 3,	

Operational Extensions – Grade 1

This unit focuses on extending the understanding of addition and subtraction to include monetary value of a set of coins, solving story problems with relevant and irrelevant information, and solving problems with multiple addends. Mastery of basic facts to 10 should be concluded in this unit.

TEAM-Math	Investigations	SFAW
N 1. Develop an understanding of place value/base 10 to:		
a. Compose and decompose whole numbers using multiple representations	BNS 1,2,3,4; MT 2,4,5 NGSP 1,2,3	1:4-8 7
b. Count by ones, twos, fives, and tens to 100 both forward and backward	BNS 1,2,3,4; MT 2,4,5 NGSP 2: 2, 9-12	1 7
c. Know the value of 10 more or 10 less	BNS 3:1-2; NGSP 2:6-8,10-12	8:6; 7:2,4,8
d. Connect number words and numerals to the quantities they represent	BNS 1:5-6; 2,3,4 MT 2,4,5; NGSP 1,2,3	1; 7:1,4,12 8:1-5; 12:1,2,6,7
e. Use models to develop and explain the value of a two-digit number	BNS 2,3 NGSP 2: 6-8; 3:10-12	8:1-6,8; 7:1,4 11:14; 12:1-2, 6-7
f. Determine the monetary value of individual coins and sets of coins up to \$1.00	NGSP 2: 3-8	9:1-10
N 2. Develop an understanding of the operations of addition and subtraction to:		
a. Represent real life number stories to the actions of joining and separating sets using numbers	MT 2:4, 4,5	2

²³ The following abbreviations are used for units from *Investigations in Number, Data and Space*: MT = “Mathematical Thinking at Grade 1”; SQSR = “Survey Questions and Secret Rules.” The numbers refer to the investigations within the units.

²⁴ SFAW refers to the *Scott Foresman Addison Wesley* series. The chapter number is given first, followed by the lesson number(s).

	BNS 3: 4	3
b. Model and explain addition and subtraction with manipulatives, pictures, and symbols	BNS 4; MT 3:4, 4,5 NGSP 3	1:4-11; 2; 3 4; 11;
c. Model and explain fact families	MT 2:4-6, 4:1-4 BNS 2:1,2,6-9, 4:1-5 NGSP: 1:1-5,10, 3	4:5-7 11:8-10
d. Demonstrate computational fluency with basic addition and subtraction facts through 10	MT 2:4-6; 4:1-4,6 BNS 2:1-9; 4:1-10 NGSP 1:1-10; 2:1-8,10-12; 3:1-13	2 Enrichment p. 149
e. Solve story problems and determine relevant/irrelevant information	BNS 4 MT 3:4; 4 NGSP 1,2,3	1:13; 2:2; 3 4:1-3, 7,9 8:5; 9:9; 10:13 11:1-5, 11-14 12:5,10
f. Use three or more addends	NGSP 2:13	1:8; 7:9; 11:6 Enrichment p.451
g. Solve addition/subtraction problems using 1- or 2-digit numbers	BNS 4; MT 2,4; NGSP 1,2,3	2,3,4,11,12
A 2. Represent number sentences using algebraic symbols		
a. Understand the use of symbols (+, -, =, <, >)	BNS 4; NGSP 2,3,4	1; 4:4-7
b. Solve problems using identity (+0) and commutative property	BNS 2:1-2, 6-9; 4:1, 3-10 MT 2:4-6; 4:1-4 NGSP 1:1-5,7-10; 3:1, 6-13	2:4 3:2,6
A 3. Describe qualitative change (students growing taller)		
M 2. Analyze and use analog and digital clocks to identify hour and half hour		
M 3. Use calendar math to identify day, date, month, day before, day after, yesterday, today, tomorrow	Classroom Routines (All Units) MT 5:2	6:9-11 7:7
D 1. Collect, organize, and display data collected from one's environment to:	Classroom Routines (All Units)	
a. Collect data for given questions using multiple display models (yes/no charts; single, double, and double over-lapping Venn diagrams, bar graphs, tallies, and other models)	MT 5: 3-6	8:9-14
b. Organize and display data with many materials including real objects, representative concrete objects, pictures/drawings, symbols, and numbers	MT 5:3-6	8:16
c. Make observations, identify patterns, pose additional questions, and make predictions from data collected	MT 5:3-6	
d. Generate questions and determine the data needed to arrive at answers	MT 5:3	