

Chapter 9

Curriculum for Grade 4

The Grade 4 Curriculum has been organized into eight units for the year. The units are:

- Place Value
- Addition and Subtraction/Money
- Algebraic Thinking
- Multiplication and Division
- Fractions and Probability
- Geometry
- Data Analysis
- Measurement and Time

Fourth Grade Quarter at a Glance

Quarters	Objectives
1st	Place Value Addition & Subtraction Regrouping Money Estimation Decimals Algebraic Thinking Problem Solving Strategies
2nd	Multiplication Basic Facts (1-12) Division Large Numbers – Multiplication Problem Solving Strategies Estimation
3rd	Long Division Fractions Probability Geometry Problem Solving Strategies Estimation
4th	Data Analysis Measurement Time Problem Solving Strategies Estimation

Fourth Grade SUGGESTED Pacing Guide

Qtrs.	Objectives _____	Skills Taught _____
1st	<div style="text-align: center; margin-bottom: 10px;"><input type="checkbox"/></div> <p>IA1 (pg. 4-1) Identify the place value of a digit in a whole number to the millions place <input type="checkbox"/></p> <p>IB1 (pg. 4-1) Compare and order numbers and sets to 9999 <input type="checkbox"/></p> <p>IA1 (pg. 4-1) Demonstrate an understanding of place value <input type="checkbox"/></p> <ul style="list-style-type: none"> - link concrete materials to number symbols - identify a number when given a pictorial representation of groups of ones, tens, hundreds, and thousands - write a number in expanded notation - determine the value of a digit <p>IB3 (pg. 4-4) Identify a number that is 1000 more or 1000 less than a given number <input type="checkbox"/></p> <p>IB6 (pg. 4-2) Round whole numbers to the nearest ten, hundred, and thousand <input type="checkbox"/></p> <p>IB6 (pg. 4-2) Round money values to the nearest dollar and dime <input type="checkbox"/></p> <p>ID2 (pg. 4-2) Round decimals to the nearest whole number <input type="checkbox"/></p> <p>IC1 (pg. 4-4) Estimate sums, differences, products, and quotients of whole numbers <input type="checkbox"/></p> <ul style="list-style-type: none"> - use compatible numbers - use front-end estimation <p>IIA2&4, IIA1&3 (pg. 4-3) Demonstrate proficiency in addition and subtraction of three-digit numbers with and without regrouping <input type="checkbox"/></p> <p>IB2 (pg. 4-1) Identify number sentences that represent inverse operations <input type="checkbox"/></p> <p>ID2 (pg. 4-2) Read, write, model, and interpret decimals through the hundredths place <input type="checkbox"/></p> <p>ID2 (pg. 4-2) Identify place value of a digit in a decimal to the hundredths place <input type="checkbox"/></p> <p>IB8 (pg. 4-1) Write money amounts in words and dollar-and-cents notation <input type="checkbox"/></p> <p>IB4 (pg. 4-1) Identify and compare representations of decimals and money amounts <input type="checkbox"/></p> <p>IB7 (pg. 4-2) Compare and order decimals and money amounts <input type="checkbox"/></p> <p>IIB2&4 (pg. 4-3) Add and subtract decimals and money amounts in context <input type="checkbox"/></p> <p>IB8 (pg. 4-1) Demonstrate proficiency in counting and trading coins and bills <input type="checkbox"/></p> <p>IM2 (pg. 4-3) Solve problems that require making correct change <input type="checkbox"/></p> <p>IE1 (pg. 4-3) Determine patterns in number sequences <input type="checkbox"/></p> <p>IE2&3 (pg. 4-3) Generate patterns from a rule <input type="checkbox"/></p> <p style="text-align: center;">(*For objectives not listed, please check the final section entitled ongoing objectives)</p>	
2nd	<p>IA2 (pg. 4-3) Identify and apply properties of addition and multiplication <input type="checkbox"/></p> <ul style="list-style-type: none"> - associative - commutative - identity <p>IB2 (pg. 4-1) Identify number sentences that represent inverse operations <input type="checkbox"/></p> <p>IIA5&7 (pg. 4-4) Demonstrate oral and written proficiency in using multiplication facts through 12 x 12 <input type="checkbox"/></p> <p>IIA5&7 (pg. 4-4) Demonstrate oral and written proficiency in using basic division facts <input type="checkbox"/></p> <p>IIA6&8 (pg. 4-4) Demonstrate proficiency with one-digit multipliers and one-digit divisors <input type="checkbox"/></p> <p>IIA6&8/5&7 (pg. 4-4) Multiply with two-digit multipliers <input type="checkbox"/></p> <p>ID4 (pg. 4-4) Multiply and divide large numbers using a calculator and determine whether an answer is reasonable <input type="checkbox"/></p> <p>IF3/IC2/ID1/ID2 (pg. 4-3 & 4-4) Solve problems in context using multiple operations <input type="checkbox"/></p> <p style="text-align: center;">(*For objectives not listed, please check the final section entitled ongoing objectives)</p>	

3rd	Objectives	Skills Taught
	ID4 (pg.4-4) Multiply and divide large numbers using a calculator and determine whether an answer is reasonable	<input type="checkbox"/>
	ID2/IF3/IC2/ID1 (pg. 4-5) Solve problems in context using multiple operations	<input type="checkbox"/>
	ID3 (pg. 4-5) Model and interpret proper fractions, improper fractions, and mixed numbers	<input type="checkbox"/>
	ID3 (pg. 4-5) Restate fractions as a form of division	<input type="checkbox"/>
	IF2 (pg. 4-5) Model and interpret fractional equivalents as parts of a whole and parts of a group including ratios	<input type="checkbox"/>
	ID3 (pg. 4-5) Recognize a whole as 100%, $\frac{1}{2}$ as 50%, and $\frac{1}{4}$ as 25%	<input type="checkbox"/>
	IA4 (pg. 4-5) Use modes to interpret equivalent fractions including the simplification (lowest terms) of fractions	<input type="checkbox"/>
	ID3 (pg. 4-5) Convert between improper fractions and whole or mixed numbers	<input type="checkbox"/>
	IIC2&4 (pg. 4-5) Use models to compare and order fractions with common denominators	<input type="checkbox"/>
	IJ1 (pg. 4-6) Recognize, describe, compare, and discuss a variety of geometric figures given models, pictures, and drawings	<input type="checkbox"/>
	IJ1 (pg. 4-6) Identify components of geometric figures	<input type="checkbox"/>
	IJ2/IJ1 (pg. 4-6) Identify geometric representations	<input type="checkbox"/>
	- points	
	- lines	
	- perpendicular lines	
	- parallel lines	
	- right angles	
	- rays	
	IK2 (pg. 4-6) Classify and compare angles	<input type="checkbox"/>
	- less than a right angle	
	- greater than a right angle	
	IK3 (pg. 4-6) Determine lines of symmetry	<input type="checkbox"/>
	IF1 (pg. 4-6) Use rotations (turns) and reflections (flips) in problems-solving situations	<input type="checkbox"/>
	IJ1 (pg. 4-6) Determine and compare areas of polygons using models	<input type="checkbox"/>
	IM1 (pg. 4-6) Distinguish between perimeter and area	<input type="checkbox"/>
	IF1 (pg. 4-6) Construct patterns using numbers and/or geometric figures	<input type="checkbox"/>
	- repeat patterns (core repeats)	
	- grow patterns (core grows)	
	IH1/IH2 (pg. 4-7) Make predictions based on exploration of probability	<input type="checkbox"/>
	- most likely outcomes	
	- least likely outcomes	
	(*For objectives not listed, please check the final section entitled ongoing objectives)	
4th	IL1 (pg. 4-7) Demonstrate proficiency in selecting appropriate units of measure	<input type="checkbox"/>
	IK1 (pg. 4-7) Compare measurement of length	<input type="checkbox"/>
	IL2 (pg. 4-8) Determine length, weight, capacity, and temperature using metric and customary tools	<input type="checkbox"/>
	IK1 (pg. 4-7) Estimate length, weight, capacity, and temperature and determine whether the estimate is reasonable	<input type="checkbox"/>
	IK2 (pg. 4-6) Identify coordinate locations and plot points on a grid	<input type="checkbox"/>
	IK4 (pg. 4-8) Demonstrate proficiency in relating equivalent units of time	<input type="checkbox"/>
	IK4 (pg. 4-8) Solve problems involving elapsed time	<input type="checkbox"/>
	IG1/II2&3 (pg. 4-7) Display and interact data using tally charts, diagrams, tables, and graphs (bar, line, circle, and pictograph)	<input type="checkbox"/>
	IH1&2 (pg. 4-7) Use sampling techniques to collect information and make predictions	<input type="checkbox"/>
	(*For objectives not listed, please check the final section entitled ongoing objectives)	

ON- GOING	OBJECTIVES	Skills Taught
	ID2 (pg. 4-2) Determine whether results are reasonable	<input type="checkbox"/>
	IIA5&7 (pg. 4-4) Apply rules to determine divisibility by 2, 3, 5, and 10	<input type="checkbox"/>
	IC1/ID2/IC2/ID1/IF3/ID4/IM2 Use problem-solving strategies	<input type="checkbox"/>
	- identify what information is missing	
	- identify operations needed to solve problems	
	- apply a variety of strategies to solve non-routine problems	
	ID2/ID4 (pg. 4-3) Determine and use the most appropriate method of calculation	<input type="checkbox"/>
	- paper and pencil	
	- mental math	
	- calculator	
	IIC2&4, IIA2&4 (pg. 4-5) Add, subtract, multiply, and divide whole numbers in context	<input type="checkbox"/>
	IIA6&8 (pg. 4-4) Solve problems in context using multiple operations	<input type="checkbox"/>
	IF3 (pg. 4-4) Solve open number sentences involving addition, subtraction, multiplication, and division	<input type="checkbox"/>
	ID2 (pg. 4-5) Construct number sentences that represent problem situations	<input type="checkbox"/>
	* Develop vocabulary associated with operations <input type="checkbox"/>	

Suggested Instructional Sequence

The following pages show how resources from *Investigations in Number, Data, and Space* (“Investigations”) and Scott Foresman Addison Wesley (“SFAW”) align with the TEAM-Math and Alabama Course of Study objectives.

Abbreviations for units in *Investigations in Number, Data, and Space* follow:

- LT = “Landmarks in the Thousands”
- MMLN = “Money, Miles, and Large Numbers”
- 34LS = “3 out of 4 Like Spaghetti”
- DSEP = “Different Shapes, Equal Pieces”
- AS = “Arrays and Shares
- PG = “Packages and Groups”
- SD = “Shape of the Data”
- COT = “Changes Over Time”
- SS = “Sunken Ships and Grid Patterns”
- S and S = “Seeing Solids and Silhouettes”

Each unit represents an overarching mathematical concept. The pacing of the units is to be determined by individual teachers, although some units build on concepts presented in other units. Some objectives are found in more than one unit. Additional resources, such as children’s literature, professional development, etc., may be documented for future reference.

Place Value – Grade 4

This unit focuses on understanding the place value of a digit in a whole number from hundredths through hundred thousands, including concepts such as estimation, pictorial representations, expanded notation, and money.

Course of Study	TEAM-Math	SAT 10 Cluster	SFAW	Recommended Investigations	Documentation/ Additional Resources
	N1. Order, compare...				
1. Demonstrate number sense by comparing and ordering decimals to hundredths and whole numbers to 999,999. 1b. Writing a number in expanded notation through the hundred-thousands	a. Compare, order, and expand whole numbers to millions	IA1. Identify the place value of a digit in a whole number. IA3. Match number names and notation IB1. Compare and order rational numbers	1:5; 3:15 11:3,15	LT:1: 1, 2, 3	
1a. Identifying a number when given a pictorial representation of tenths and hundredths or groups of ones, tens, hundreds, and thousands.	b. Understand and demonstrate place value from hundredths through hundred thousands using words, models, and pictorial representation, including money in dollars and cents	IB2. Identify a number sentence that represents the inverse operation of a given number sentence IB4. Identify alternative representations of rational numbers	1: 4,9,10, 12 11:1	LT: 1: 1, 2, 3; 2: 1; 3: 1, 2; 4: 1 MMLN: 1: 3, 4,	

		IB8. Translate between visual representation, sentences, and symbolic notation IB7. Solve problems using place value concepts		5	
1c. Determine the place value of a digit in a whole number through the hundred-thousands and in a decimal to the hundredths	c. Determine place value in a decimal through hundredths	ID2. Solve problems using numeric reasoning	1: 1 11:2		
5. Round whole numbers to the nearest ten, hundred, or thousand and decimals to the nearest tenth.	N3. Round whole numbers to nearest ten, hundred, and thousands (including money values)	IB6. Round whole numbers to a specified place value	1: 6 11: 4	LT: 3: 3, 4 MMLN: 1:1,2,3,4,5,6,7,8	

Addition and Subtraction/ Money – Grade 4

This unit focuses on problem solving and computation using appropriate strategies, non-routine strategies and using money.

Course of Study	TEAM-Math	SAT 10 Cluster	SFAW	Recommended Investigations	Documentation/ Additional Resources
	N2. Computation				
6. Solve problems, including word problems that involve addition and subtraction of four-digit numbers with and without regrouping. 6a. Estimating sums and differences of whole numbers by using appropriate strategies such as rounding, front-end estimation, and compatible numbers.	a. Demonstrate computational fluency in basic addition, subtraction, multiplication, and division	IA2. Identify and use field properties of addition and multiplication IB5. Identify missing information necessary to solve problems ID2. Solve problems using numerical reasoning IIA1&3. Addition and subtraction of whole numbers using symbolic notation IIA2&4. Addition and subtraction of whole numbers in context	2:1,2; 3:1,8	LT: 2: 2,3,4,5 MMLN: 1: 1, 2, 3, 4, 5, 6, 7,8 2: 1, 2 3: 1, 2, 3, 4 AS: 1: 3 2: 5, 6 3:1	
6b. Adding and subtracting decimals and money amounts.	b. Regroup in subtraction and addition problems with hundreds, through hundred thousands	IC2/ID1. Solve problems using appropriate strategies ID4. Solve problems using non-routine strategies IM2. Solve problems using money IIA1&3. Addition and subtraction of whole numbers using symbolic notation IIA2&4. Addition and subtraction of whole numbers in context IIB1&3. Addition and subtraction of decimals using symbolic notation IIB2&4. Addition and subtraction of decimals in context	2: 5; 6: 10 2: 6,7,8,14 4: 15; 5: 12	LT: 3: 3,4,5 4:2,3 MMLN: 1: 6,7,8 3: 2,3,4	

Algebraic Thinking – Grade 4

This unit focuses on algebraic principles in relationships between mathematical situations, algebraic symbolism, and patterns.

Course of Study	TEAM-Math	SAT-10 Cluster	SFAW	Recommended Investigations	Documentation/ Additional Resources
	A1. Understand and use the associative, distributive, and commutative properties to solve problems	IA2. Identify and use field properties of addition and multiplication		AS: 2: 1,2,3,4,5,6 PG: 2: 1,2,3 3: 3,4,5,6	
	A2. Complete and extend patterns with symbols, numbers, and units	IE1. Extend a numerical pattern IE3. Solve involving patterns IE2. Identify missing elements in a visual pattern	2:9; 7:1; 12:4	AS: 1: 1,2,3 Ten Minute Math 34LS: 1: 1	
9. Write number sentences for word problems that involve multiplication or division.	A3. Write a number sentence for a problem expressed in words	ID2. Solve problems using numerical reasoning	7:10	AS: 2: 7, 8 3: 2, 3, 4 LT: 2: 1, 5	
10. Complete addition and subtraction number sentences with a missing addend or subtrahend.	A4. Solve number sentences for a missing addend, subtrahend, or factor	ID2. Solve problems using numerical reasoning	2:13	DSEP: Ten Minute Math COT: 1: 5,6	

Multiplication and Division – Grade 4

This unit focuses on the ability to solve multiplication and division problems using multiple strategies.

Course of Study	TEAM-Math	SAT-10 Cluster	SFAW	Recommended Investigations	Documentation/ Additional Resources
	N2. Computation				
6c. Demonstrate computational fluency in multiplication and division fact families through 12	a. Demonstrate computational fluency in basic addition, subtraction, multiplication, and division	IIA5&7. Multiplication and division of numbers using symbolic notation IIA6&8. Multiplication and division of whole numbers in context IB3. Identify a number that is more or less than a given number by a multiple of ten	2:1,2; 3:1,8	LT:2:2,3,4,5 MMLN:1:1,2,3, 4, 5,6,7,8 2:1,2; 3:1,2,3,4 AS:1:3; 2:5,6 3:1	

Course of Study	TEAM-Math	SAT-10 Cluster	SFAW	Recommended Investigations	Documentation/ Additional Resources
<p>7. Solve problems, including word problems, involving the basic operations of multiplication and division on whole numbers through two-digit multipliers and one-digit divisors.</p>	<p>c. Divide using one digit divisors with and without remainders d. Multiply using two-digit multipliers</p>	<p>IC1. Solve problems using estimation strategies IF3. Solve simple algebraic equations IIA5&7. Multiplication and division of numbers using symbolic notation IIA6&8. Multiplication and division of whole numbers in context ID4. Solve problems using non-routine strategies</p>	<p>7: 3,4,7,8,9</p>	<p>AS:2:7,8 3:2,3,4 PG:3:1,2,3,4,5,6,10</p>	
<p>7. Solve problems, including word problems, involving the basic operations of multiplication and division on whole numbers through two-digit multipliers and one-digit divisors. 7a. Estimating products and quotients of whole numbers by using appropriate strategies such as rounding, front-end estimation, and compatible numbers. 7b. Identifying information needed to determine the appropriate operation to solve the problem. 7c. Estimating sums and differences of whole numbers by using appropriate strategies such as rounding, front-end estimation, and compatible numbers</p>	<p>N4. Solve real life problems using: a. Basic operations b. Estimating c. Reasoning</p>	<p>ID4. Solve problems using non-routine strategies</p>	<p>3: 11,15 5: 1,3,4,5, 5:6,8,12 6: 1,3,5,6, 10 7: 1,3,4,5 6,7,8 9: 14 12: 10</p>	<p>LT:2:2,3,4,5 3:3,4,5 MMLN:2:1,2,3 34LS:1:2 2:3,4,5,6,7 PG:3:1,2,3,4,5,6 SD:2:1,4</p>	
<p>9. Write number sentences for word problems that involve multiplication or division.</p>	<p>A3. Write a number sentence for a problem expressed in words</p>	<p>ID2. Solve problems using numerical reasoning</p>	<p>7:10</p>	<p>AS: 2: 7,8 3: 2,3,4 LT: 2: 1,5</p>	

Fractions and Probability – Grade 4

This unit focuses on problem solving using fraction concepts, ratio/proportions and addition/subtraction using symbolic notation.

Understanding of basic probability including possible outcomes and the probability of simple events.

Course of Study	TEAM-Math	SAT-10 Cluster	SFAW	Recommended Investigations	Documentation/ Additional Resources
	N1. Order, compare...				
8. Recognize equivalent forms of commonly used fractions and decimals.	d. Demonstrate an understanding and use of equivalency in fractions and decimals	IA4. Match pictorial models to fraction names and notations		34LS:2,2,3 DSEP:1:2,3,4,5 2:1,2,3,4 3:1,2	
3. Rename improper fractions as mixed numbers and mixed numbers as improper fractions.	e. Rename improper fractions as mixed numbers and mixed numbers as improper fractions	ID3. Solve problems using fraction concepts IF2. Solve problems using ratio and proportions IIC1&3. Addition and subtraction of fractions using symbolic notation	9: 9,10,11, 14	DSEP:2:3,4 3:1,2	
3a. Using a number line to simplify, compare, and order fractions and mixed numbers	f. Demonstrate and understand addition and subtraction of fractions with like and unlike denominators	IIC2&4. Addition and subtraction of fractions in context	10: 2,12, 13	34LS:3:3 DSEP:1:5	
	N5. Extend to notions of equivalence ($50/100 = \frac{1}{2} = 50\%$)	ID3. Solve problems using fraction concepts		MMLN:1:6,7,8 2:1,2 34LS:1:2,3 2:5,6,7	
7d. Writing equivalent forms of fractions	N6. Extend the understanding of ratios and develop the concept of proportions in problem solving: <ul style="list-style-type: none"> • Equivalent fractions • Unit rate • Factor of change 	IF2. Solve problems using ratio and proportions	1: 1 9: 6,7	DSEP:3:3,4,5	

Geometry – Grade 4

This unit focuses on patterns involving numbers, symbols, and geometric figures. Understanding plane and solid figures, coordinate geometry, and spatial reasoning.

Course of Study	TEAM-Math	SAT-10 Cluster	SFAW	Recommended Investigation	Documentation/ Additional Resources
11. Identify triangle, quadrilaterals, pentagons, hexagons, or octagons based on the number of sides, angles, and vertices. 11a. Drawing lines of symmetry in triangles, quadrilaterals, pentagons, hexagons, or octagons.	G1. Identify, compare, classify, and analyze geometric solid and plane figures including: a. Symmetry (rotational and mirror for plane figures) b. Congruency	IJ1. Identify geometric solid figures IJ2. Identify parallel and perpendicular lines IK3. Solve problems using spatial reasoning IM1. Solve problems involving perimeter and area	8:2 8:7	SS: 2: 2,3 S and S: 1:1; 2:1,2,3; 4: 1	
11b. Demonstrating slides (translations), flips (reflections), and turns (rotations) using triangles, quadrilaterals, pentagons, hexagons, or octagons	G2. Identify reflection (flip), rotation (turn), and translation (slide) and make predictions	IF1. Extend a numerical or geometric pattern	8:6	SS: 2: 5,6,7,8,9 S and S: 2: 1,2,3,4 3: 2,3	
12. Find locations on a map or grid using ordered pairs.	G3. Locate and name coordinates on a grid (ordered pairs): a. Parallel and perpendicular lines b. Edges c. Vertices d. Angles e. Surfaces	IK2. Identify points on a coordinate grid	4:9	SS: 1: 1,2,3,4 2: 1,2,3	
	G4. Identify and build a three-dimensional object from a two-dimensional object	IF1. Extend a numerical or geometric pattern	8:1	S and S: 2: 1,2,3	
	G5. Solve problems using: a. Predicting b. Estimating c. Spatial reasoning	IK3. Solve problems using spatial reasoning	8:1	SS: 1: 3,4,5,6 2: 4,5 S and S: 2: 1,2,3,4 3: 2,3	

Data Analysis – Grade 4

This unit focuses on interpretation of tables, graphs, and points on a coordinate grid.

Course of Study	TEAM-Math	SAT-10 Cluster	SFAW	Recommended Investigations	Documentation/ Additional Resources
<p>15. Represent categorical data using tables and graphs, including bar graphs, line graphs, and line plots.</p> <ul style="list-style-type: none"> • Collecting data using observations, surveys, or experiments • Creating tally charts to represent data collected from real-life situations <p>17. Represent numerical data using tables and graphs, including bar graphs and line graphs.</p>	D1. Collect, represent, interpret, and analyze data using a variety of tables, graphs, charts, and grids	IG1/II2. Read and interpret tables and graphs II1. Analyze tables and graphs II3. Solve problem involving tables and graphs	3:5 4:6,7,8,10, 11,13,15 9:12,14	34LS: 2: 1,2,3, 4,5, 6,7 PG: Ten Minute Math SD: 1: 1,2,3 2: 1,2,3,4 3: 1 COT: 1: 1,2,3,4 3: 1,2,6,7	
	D2. Develop an understanding of mean, median, and range	IH1. Identify possible outcomes IH2. Identify probabilities of simple events	4:12	SD: 2: 4,5,6,7	
16. Determine if outcomes of events are likely, unlikely, certain, equally likely, or impossible.	D3. Determine if an outcome of simple events are likely, certain, or impossible	IH1. Identify possible outcomes IH2. Identify probabilities of simple events	12:5	MMLN: 1: 3 2: 7,8 3: 1 Ten Minute Math	
	D4. Understand the concept of probability and use it to predict outcomes of a given situation	IH1. Identify possible outcomes IH2. Identify probabilities of simple events	12:5,6,7,8	34LS: 1: 1 Ten Minute Math	

Measurement and Time – Grade 4

This unit focuses on the meaning and use of various types of measurement systems, the tools of measurement, and the role of estimation in making logical inferences in measurement.

Course of Study	TEAM-Math	SAT-10 Cluster	SFAW	Recommended Investigations	Documentation/ Additional Resources
14. Measure length, width, and capacity, using metric and customary units, and temperature in degrees 14a. Fahrenheit and degrees Celsius	M1. Identify appropriate units and tools of measurement in customary and metric units	IK1. Estimate or measure length using customary or metric units	10: 7,8,9, 10 11: 9,10, 11,14	MMLN: 2: 4 3: 2,3,4	
	M2. Convert units of measurement within the same system	IL1. Identify appropriate units of measurement IL2. Estimate or measure temperature using customary or metric units	10:11		
14b. Estimating perimeter and area of irregular shapes using unit squares and grid paper 14c. Estimating area using unit squares	M3. Determine and use estimated and exact measurement of perimeter and area in real life situations	IK1. Estimate or measure length using customary or metric units	8:10,11,12	SS: Ten Minute Math DSEP:1:1,2,3,4; 2:1,2,3,4	
13. Calculate elapsed time in hours and minutes.	M4. Calculate elapsed time, minutes, hours, days, and so forth to solve problems	IK4. Solve problems involving the concept of time	3:15 4: 3,15		

Appendix. Correlation of Objectives with Recommended Textbooks

NUMBER STRAND – Grade 4

Alabama Course of Study	TEAM-Math	SAT-10	SFAW	Recommended Investigations	Documentation/ Additional Resources
1. Demonstrate number sense by comparing and ordering decimals to hundredths and whole numbers to 999,999. a. Identifying a number when given a pictorial representation of tenths and hundredths or groups of ones, tens, hundreds, and thousands b. Writing a number in expanded notation through the hundred-thousands c. Determining the place value of a digit in a whole number through the hundred-thousands and in a decimal to the hundredths 2. Write money amounts in words and dollar-and-cent notation.	N1. Order, compare...				
	d. Compare, order, and expand whole numbers to millions	IA1. Identify the place value of a digit in a whole number. IA3. Match number names and notation IB1. Compare and order rational numbers	1:5; 3:15 11:3,15	LT:1:1,2,3	
	e. Understand and demonstrate place value from hundredths through hundred thousands using words, models, and pictorial representation, including money in dollars and cents	IB2. Identify a number sentence that represents the inverse operation of a given number sentence IB4. Identify alternative representations of rational numbers IB8. Translate between visual representation, sentences, and symbolic notation IB7. Solve problems using place value concepts	1: 4,9,10, 12 11:1	LT:1:1,2,3; 2:1; 3:1,2; 4:1 MMLN:1:3,4,5	
	f. Determine place value in a decimal through hundredths	ID2. Solve problems using numerical reasoning	1: 1 11: 2		
	g. Demonstrate an understanding and use of equivalency in fractions and decimals	IA4. Match pictorial models to fraction names and notations		34LS:2:2,3 DSEP:1:2,3,4,5 2:1,2,3,4 3:1,2	
	h. Rename improper fractions as mixed numbers and mixed numbers as improper fractions	ID3. Solve problems using fraction concepts IF2. Solve problems using ratio and proportions IIC1&3. Addition and subtraction of fractions using symbolic notation	9: 9,10, 11,14	DSEP:2:3,4 3:1,2	

Alabama Course of Study	TEAM-Math	SAT-10	SFAW	Recommended Investigations	Documentation/ Additional Resources
<p>a. Identifying equivalent units of money</p> <p>3. Rename improper fractions as mixed numbers and mixed numbers as improper fractions.</p> <p>a. Using a number line to simplify, compare, and order fractions and mixed numbers</p> <p>8. Recognize equivalent forms of commonly used fractions and decimals.</p>	<p>i. Demonstrate and understand addition and subtraction of fractions with like and unlike denominators</p>	<p>IIC2&4. Addition and subtraction of fractions in context</p>	<p>10:2,12, 13</p>	<p>34LS:3:3 DSEP:1:5</p>	
<p>6. Solve problems, including word problems, that involve addition and subtraction of four-digit numbers with and without regrouping.</p> <p>a. Estimating sums and differences of whole numbers by using appropriate strategies such as rounding, front-end estimation, and compatible numbers</p> <p>b. Adding and subtracting decimals and money amounts</p> <p>c. Demonstrating computational fluency in multiplication and division fact families through 12</p>	<p>N2. Computation</p> <p>b. Demonstrate computational fluency in basic addition, subtraction, multiplication, and division</p> <p>c. Regroup in subtraction and addition problems with hundreds, through hundred thousands</p>	<p>IIA5&7. Multiplication and division of numbers using symbolic notation</p> <p>IIA6&8. Multiplication and division of whole numbers in context</p> <p>IB3. Identify a number that is more or less than a given number by a multiple of ten</p> <p>IC2/ID1. Solve problems using appropriate strategies</p> <p>ID4. Solve problems using non-routine strategies</p> <p>IM2. Solve problems using money</p> <p>IIA1&3. Addition and subtraction of whole numbers using symbolic notation</p> <p>IIA2&4. Addition and subtraction of whole numbers in context</p> <p>IIB1&3. Addition and subtraction of decimals using symbolic notation</p> <p>IIB2&4. Addition and subtraction of decimals in context</p>	<p>2:1,2; 3:1,8</p> <p>2: 5; 6: 10 2: 6,7,8, 14 4: 15; 5: 12</p>	<p>LT:2:2,3,4,5 MMLN: 1:1,2,3,4, 5,6,7,8 2:1,2; 3:1,2,3,4 AS: 1:3; 2:5,6 3:1</p> <p>LT:3:3,4,5 4:2,3 MMLN:1:6,7,8 3:2,3,4</p>	

Alabama Course of Study	TEAM-Math	SAT-10	SFAW	Recommended Investigations	Documentation/ Additional Resources
	d. Divide using one digit divisors with and without remainders	IC1. Solve problems using estimation strategies IF3. Solve simple algebraic equations ID4. Solve problems using non-routine strategies	7: 3,4,7, 8,9	AS:2:7,8 3:2,3,4 PG:3:1,2,3,4,5, 6,10	
	e. Multiply using two digit multipliers	IF3. Solve simple algebraic equations ID4. Solve problems using non-routine strategies	6: 1,5,6,8	PG:2:2,3 3:4,5	
5. Round whole numbers to the nearest ten, hundred, or thousand and decimals to the nearest tenth.	N3. Round whole numbers to nearest ten, hundred, and thousands	IB6. Round whole numbers to a specified place value	1: 6 11: 4	LT:3:3,4 MMLN: 1:1,2,3,4,5,6,7,8	
7. Solve problems, including word problems, involving the basic operations of multiplication and division on whole numbers through two-digit multipliers and one-digit divisors. <ul style="list-style-type: none"> a. Estimating products and quotients of whole numbers by using appropriate strategies such as rounding, front-end estimation, and compatible numbers b. Identifying information needed to determine the appropriate operation to solve a problem c. Estimating sums and differences of whole numbers by using appropriate strategies such as rounding, front-end estimation, 	N4. Solve real life problems using: <ul style="list-style-type: none"> g. Basic operations h. Estimating i. Reasoning 	ID4. Solve problems using non-routine strategies	3: 11,15 5: 1,3,4,5, 6,8,12 6: 1,3,5,6, 10 7: 1,3,4,5, 6,7,8 9: 14 12: 10	LT:2:2,3,4,5 3:3, 4,5 MMLN:2:1,2,3 34LS:1:2 2: 3,4,5,6,7 PG:3:1,2,3,4,5,6 SD:2:1,4	

Alabama Course of Study	TEAM-Math	SAT-10	SFAW	Recommended Investigations	Documentation/ Additional Resources
and compatible numbers					
	N5. Extend to notions of equivalence ($50/100 = \frac{1}{2} = 50\%$)	ID3. Solve problems using fraction concepts		MMLN:1:6,7,8 2:1,2 34LS:1:2,3 2:5,6,7	
d. Writing equivalent forms of fractions	N6. Extend the understanding of ratios and develop the concept of proportions in problem solving: <ul style="list-style-type: none"> • Equivalent fractions • Unit rate • Factor of change 	IF2. Solve problems using ratio and proportions	1: 1 9: 6,7	DSEP:3:3,4,5	

ALGEBRA – Grade 4

Alabama Course of Study	TEAM-Math	SAT-10	SFAW	Recommended Investigations	Documentation/ Additional Resources
	A1. Understand and use the associative, distributive, and commutative properties to solve problems	IA2. Identify and use field properties of addition and multiplication		AS: 2: 1,2,3,4,5,6 PG: 2: 1,2,3 3: 3,4,5,6	
	A2. Complete and extend patterns with symbols, numbers, and units	IE1. Extend a numerical pattern IE3. Solve involving patterns IE2. Identify missing elements in a visual pattern	2:9; 7:1; 12:4	AS: 1: 1,2,3 Ten Minute Math 34LS: 1: 1	
9. Write number sentences for word problems that involve multiplication or division.	A3. Write a number sentence for a problem expressed in words	ID2. Solve problems using numerical reasoning	7:10	AS: 2: 7,8 3: 2,3,4 LT: 2: 1,5	
10. Complete addition and subtraction number sentences with a missing addend or subtrahend.	A4. Solve number sentences for a missing addend, subtrahend, or factor	ID2. Solve problems using numerical reasoning	2:13	DSEP: Ten Minute Math COT: 1: 5,6	

GEOMETRY – Grade 4

Alabama Course of Study	TEAM-Math	SAT-10	SFAW	Recommended Investigations	Documentation/ Additional Resources
11. Identify triangles, quadrilaterals, pentagons, hexagons, or octagons based on the number of sides, angles, and vertices. <ul style="list-style-type: none"> a. Drawing lines of symmetry in triangles, quadrilaterals, pentagons, hexagons, or octagons 	G1. Identify, compare, classify, and analyze geometric solid and plane figures including: <ul style="list-style-type: none"> c. Symmetry (rotational and mirror for plane figures) d. Congruency 	IJ1. Identify geometric solid figures IJ2. Identify parallel and perpendicular lines IK3. Solve problems using spatial reasoning IM1. Solve problems involving perimeter and area	8:2 8:7	SS: 2: 2,3 S and S: 1:1; 2:1,2,3; 4: 1	
<ul style="list-style-type: none"> b. Demonstrating slides (translations), flips (reflections), and turns (rotations) using triangles, quadrilaterals, pentagons, hexagons, or octagons 	G2. Identify reflection (flip), rotation (turn), and translation (slide) and make predictions	IF1. Extend a numerical or geometric pattern	8:6	SS: 2: 5,6,7,8,9 S and S: 2: 1,2,3,4 3: 2,3	
12. Find locations on a map or grid using ordered pairs.	G3. Locate and name coordinates on a grid (ordered pairs): <ul style="list-style-type: none"> f. Parallel and perpendicular lines g. Edges h. Vertices i. Angles j. Surfaces 	IK2. Identify points on a coordinate grid	4:9	SS: 1: 1,2,3,4 2: 1,2,3	
	G4. Identify and build a three-dimensional object from a two-dimensional object	IF1. Extend a numerical	8:1	S and S: 2: 1,2,3	
	G5. Solve problems using: <ul style="list-style-type: none"> d. Predicting e. Estimating f. Spatial reasoning 	IK3. Solve problems using spatial reasoning	8:1	SS: 1: 3,4,5,6 2: 4,5 S and S: 2: 1,2,3,4 3: 2,3	

MEASUREMENT – Grade 4

Alabama Course of Study	TEAM-Math	SAT-10	SFAW	Recommended Investigations	Documentation/ Additional Resources
14. Measure length, width, weight, and capacity, using metric and customary units, and temperature in degrees <ul style="list-style-type: none"> a. Fahrenheit and degrees Celsius. b. Estimating perimeter and area of irregular shapes using unit squares and grid paper c. Estimating area using unit squares 	M1. Identify appropriate units and tools of measurement in customary and metric units	IK1. Estimate or measure length using customary or metric units	10: 7,8,9, 10 11: 9,10, 11,14	MMLN: 2: 4 3: 2,3,4	
	M2. Convert units of measurement within the same system	IL1. Identify appropriate units of measurement	10:11		
<ul style="list-style-type: none"> d. Estimating perimeter and area of irregular shapes using unit squares and grid paper e. Estimating area using unit squares 	M3. Determine and use estimated and exact measurement of perimeter and area in real life situations	IK1. Estimate or measure length using customary or metric units	8:10,11, 12	SS: Ten Minute Math DSEP: 1:1,2,3,4; 2:1,2,3,4	
13. Calculate elapsed time in hours and minutes.	M4. Calculate elapsed time, minutes, hours, days, and so forth to solve problems	IK4. Solve problems involving the concept of time	3:15 4: 3,15		

DATA ANALYSIS AND PROBABILITY – Grade 4

Alabama Course of Study	TEAM-Math	SAT-10	SFAW	Recommended Investigations	Documentation/ Additional Resources
15. Represent categorical data using tables and graphs, including bar graphs, line graphs, and line plots. <ul style="list-style-type: none"> • Collecting data using observations, surveys, or experiments • Creating tally charts to represent data collected from real-life situations 17. Represent numerical data using tables and graphs, including bar graphs and line graphs.	D1. Collect, represent, interpret, and analyze data using a variety of tables, graphs, charts, and grids	IG1/II2. Read and interpret tables and graphs II1. Analyze tables and graphs II3. Solve problem involving tables and graphs	3: 5 4: 6,7,8, 10, 11, 13,15 9: 12,14	34LS: 2: 1,2,3,4,5,6,7 PG: Ten Minute Math SD: 1: 1,2,3 2: 1,2,3,4 3: 1 COT: 1: 1,2,3,4 3: 1,2,6,7	
	D2. Develop an understanding of mean, median, and range	IH1. Identify possible outcomes IH2. Identify probabilities of simple events	4:12	SD: 2: 4,5,6,7	
16. Determine if outcomes of simple events are likely, unlikely, certain, equally likely, or impossible.	D3. Determine if an outcome of simple events are likely, certain, or impossible	IH1. Identify possible outcomes IH2. Identify probabilities of simple events	12:5	MMLN: 1: 3 2: 7,8 3: 1 Ten Minute Math	
	D4. Understand the concept of probability and use it to predict outcomes of a given situation	IH1. Identify possible outcomes IH2. Identify probabilities of simple events	12:5,6,7,8	34LS: 1: 1 Ten Minute Math	