

Mobile County Public School  
Elementary Mathematics Grade 2  
Explanation and 2009 ALCOS Changes Preface Guide  
2009-2010

In April 2009, the Alabama State Department of Education adopted the new Course of Study for Mathematics. The new course of study (COS) is based upon the National Council of Teachers of Mathematics (NCTM) *Principles and Standards of School Mathematics (PSSM)*, *Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence and Foundations for Success: The Final Report of the National Mathematics Advisory Panel*. The MCPSS Elementary Mathematics Curriculum Manual was updated to reflect the changes in the new COS, therefore necessitating changes in the quarterly Pacing Guide. Below is information to help teachers maximize their use of the pacing guides.

#### INTERPRETING THE PACING GUIDES DOCUMENT:

- Column 1 – **Alabama Course of Study number:** If there is no number listed, the objective is required locally by MCPSS.
- Column 2 – **Manual & Quiztrax number:** The Manual was updated to make sure the Quiztrax numbers are reflective of the Manual numbers.
- Column 3 – **Standards & Objectives:** Numbered COS items are bolded since these are the guiding objectives and will be the overall tested standards on the ARMT. If a row is shaded, this denotes a modification of the core objective for the purpose of developmental progression towards overall mastery.
- Columns 4 & 5 – **ARMT/SAT10:** Signify that certain objectives are likely to be tested on the ARMT and SAT10.
- Columns 6 & 7 - **Taught & Tested:** Allow teachers to record information about when objectives have been taught and tested.
- Column 8 – **AMP Test:** Identifies the System provided, optional Assessment of Mathematical Progress (AMP) in which the objective is assessed. All items on a particular AMP are grouped together and boxed together.

#### USING THE PACING GUIDE:

The purpose of the Pacing Guide is to supply a scope and sequence of objectives that will be assessed each quarter. The Elementary Mathematics Curriculum Manual provides additional math content and professional knowledge along with clarifying examples of each objective. Pacing information, however, is all contained in the Pacing Guide. The Pacing Guide should be used to plan and prepare units and lessons for instruction each quarter.

**Important:** After reviewing the pacing for each quarter, each school and grade level should review the longitudinal testing data for the school to determine areas of weakness. Schools may want to add these areas for improvement earlier in the year, as well as, the quarter in which the System assigns to the objective.

## What is new for 2<sup>nd</sup> Grade:

### NUMBER AND OPERATIONS:

- 1.1 Compare and order whole numbers up to 1,000
- 1.2 Expand whole numbers to 1,000
- 1.4 Determine a number when given the value of ones, tens, and hundreds
- 1.8 Identify zero as a placeholder in two- and three-digit numbers
- 1.9 Compare numbers up to 1,000 using the symbols >, <, and =
- 2.5 Use estimation to determine if an answer is reasonable
- 4.1 Solve authentic multiplication and division problems
- 5.1 Illustrate fractions with multiple representations, including manipulatives, drawings, and verbal descriptions
- 5.2 Recognize that fractions such as  $\frac{1}{1}$ ,  $\frac{2}{2}$ ,  $\frac{3}{3}$ , and  $\frac{4}{4}$  are equivalent to one whole
- 5.3 Use the terms numerator and denominator to label parts of a fraction
- 5.4 Recognize that one-half of an object is not always the same as one-half of a different object

### ALGEBRA:

- 7.1 Describe a pattern in a number sequence

### MEASUREMENT:

- 13.1 Measure weight and volume of familiar objects with nonstandard units

### DATA ANALYSIS AND PROBABILITY:

- 15.1 Interpret data using graphs, including bar, line, circle graphs, and Venn diagrams

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**Second Grade Mathematics Pacing Guide at a Glance**  
**Quarter 1**

ACOS #	Manual/ QuizTrax #	Standards/Objectives	A check mark (✓) indicates the standard is assessed on:		Assessment		
			ARMT	SAT10	Taught	Tested	AMP Name
3	3.1	Demonstrate computational fluency, including quick recall, of addition facts with sums through 18 using horizontal and vertical form					BFT
1	1.1	Compare and order whole numbers up to 100	✓				# Sense: Place Value & Comparing Numbers
1	1.3	Determine the place value of a digit in a number through 100					
1	1.9	Compare numbers up to 100 using the symbols $>$ , $<$ and $=$					
1	1.4	Determine a number when given the value of the ones, tens and hundreds					Number Sense: Number Representation
1	1.5	Identify a number that is 20 more or 20 less than a given number					
1	1.6	Count forward in multiples from a given number					
1	1.8	Identify zero as a placeholder in two- and three-digit numbers					
	1.12	Differentiate between odd and even numbers					
	1.13	Identify position using ordinal numbers to 50 <sup>th</sup>					
	1.14	Identify and use multiple representations of numbers up to 100					
2	2.1	Solve two-digit addition and subtraction problems <i>without</i> regrouping using multiple strategies	✓				Computation: Addition & Subtraction (2 tests)
2	2.3	Solve multistep addition and subtraction problems using authentic situations					
2	2.4	Justify the strategy used to solve addition and subtraction problems					
2	2.5	Use estimation to determine if an answer is reasonable					
	2.6	Use a number line or hundreds chart to identify, add and subtract numbers					
	8.2	Demonstrate understanding of equivalence and the equal "=" sign by completing number sentences represented on both sides of the equal sign					
6	6.1	Determine the monetary value of like and unlike sets of coins and bills up to \$1.00	✓				Money
6	6.2	Identify sets of coins of equivalent value					
6	6.3	Select coins to make equivalent sets					
6	6.4	Apply monetary symbols, including dollar (\$), cent (¢) and decimal point (.)					

The **Quiz Trax #** also refers to the Objective number in the *Mathematics Curriculum Manual*.

**Highlighted objectives** indicate a modification of the core objective for the purpose of developmental progression towards overall mastery.

For example, in the objective 1.1 states, "Compare and order whole numbers up to 1,000." In quarter 1, students are only expected to compare and order numbers up to 100.

Mobile County Public School System  
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**Second Grade Mathematics Pacing Guide at a Glance**  
**Quarter 2**

ACOS #	Manual/ QuizTrax #	Standards/Objectives	A check mark (✓) indicates the standard is assessed on:		Assessment		
			ARMT	SAT10	Taught	Tested	AMP Name
3	3.1	Demonstrate computational fluency, including quick recall, of subtraction facts with minuends through 18 using horizontal and vertical form					BFT
1	1.1	Compare and order whole numbers up to 500	✓				Number Sense
1	1.2	Expand whole numbers up to 500					
1	1.3	Determine the place value of a digit in a number through 500					
1	1.4	Determine a number when given the value of the ones, tens and hundreds					
1	1.6	Count forward in multiples from a given number					
	1.7	Count backwards in multiples from a given number					
1	1.8	Identify zero as a placeholder in two- and three-digit numbers					
1	1.9	Compare numbers up to 500 using the symbols >, < and =					
	1.14	Identify and use multiple representations of numbers up to 500					
2	2.5	Use estimation to determine if an answer is reasonable					Concepts of Computation
2	2.1	Solve two-digit addition and subtraction problems <i>without</i> regrouping using multiple strategies	✓				
2	2.4	Justify the strategy used to solve addition and subtraction problems					
	2.6	Use a number line or hundreds chart to identify, add and subtract numbers					
	2.7	Use number sense strategies for solving addition and subtraction basic facts; part-part total, doubling, halving counting up and back					
	8.2	Demonstrate understanding of equivalence and the equal "=" sign by completing number sentences represented on both sides of the equal sign					
6	6.1	Determine the monetary value of like and unlike sets of coins and bills up to \$1.00	✓				Money
6	6.2	Identify sets of coins of equivalent value					
6	6.3	Select coins to make equivalent sets					
6	6.4	Apply monetary symbols, including dollar (\$), cent (¢) and decimal point (.)					
	6.7	Skip count by varying amounts-ones, fives, tens and twenty-fives – to develop money counting skills					
7	7.1	Describe a pattern in a number sequence	✓				Concepts of Algebra
	7.2	Identify, describe and continue growing patterns by skip counting with equal groups					
9	9.1	Describe change over time in observable (qualitative) and measurable (quantitative) terms					Concepts of Time
14	14.1	Determine time to the minute using digital and analog clocks	✓				
14	14.2	Interpret time to the minute as part of an hour					
	14.4	Solve problems involving calendar concepts					
15	15.1	Interpret data using graphs, including bar, line, circle graphs and Venn Diagrams	✓				Concepts of Data
15	15.2	Use labels and a title to complete a graph					

Mobile County Public School System  
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**Second Grade Mathematics Pacing Guide at a Glance**  
**Quarter 3**

ACOS #	Manual/ QuizTrax #	Standards/Objectives	A check mark (√) indicates the standard is assessed on:		Assessment		
			ARMT	SAT10	Taught	Tested	AMP Name
3	3.1	Demonstrate computational fluency, including quick recall, of addition facts with sums through 20 using horizontal and vertical form					BFT
1	1.1	Compare and order whole numbers up to 1,000					Number Sense
1	1.2	Expand whole numbers up to 1,000					
1	1.3	Determine the place value of a digit in a number through 999					
1	1.4	Determine a number when given the value of the ones, tens and hundreds					
1	1.8	Identify zero as a placeholder in two- and three-digit numbers					
1	1.9	Compare numbers up to 1000 using the symbols >, < and =					
	1.14	Identify and use multiple representations of numbers up to 1,000					
2	2.2	Solve two-digit addition and subtraction problems, with <i>numbers that may require the regrouping algorithm</i> , using multiple strategies					Addition with Regroupable Numbers
2	2.3	Solve multistep addition and subtraction problems using authentic situations					
2	2.5	Use estimation to determine if an answer is reasonable					
5	5.1	Illustrate and <i>identify</i> fractions with multiple representations, including manipulatives, drawings and verbal descriptions					Fractions
5	5.2	Recognize that fractions such as 1/1, 2/2, 3/3 and 4/4 are equivalent to one whole					
5	5.3	Use the terms numerator and denominator to label parts of a fraction					
5	5.4	Recognize that one-half of an object is not always the same as one-half of a different object					
10	10.1	Describe attributes of <i>two dimensional</i> (plane) and three dimensional (solid) figures including triangles, quadrilaterals, rhombi, trapezoids, pentagons, hexagons, heptagons and octagons, according to sides and angles					Geometry
10	10.2	Identify lines of symmetry in triangles, quadrilaterals, pentagons, hexagons, heptagons and octagons					
10	10.3	Recognize the results of changing the position (transformation) of objects or shapes by sliding (translating), turning (rotating) or flipping (reflecting)					
11	11.1	Describe the route from one location to another by applying concepts of direction and distance					
11	11.2	Follow multi-step directions to locate objects					
11	11.3	Use grids for determining movement between points					
	11.4	Locate and name points of ordered pairs on coordinate grids					
14	14.1	Determine time to the minute using digital and analog clocks					Time and Data
15	14.2	Interpret time to the minute as part of an hour					
15	15.1	Interpret data using graphs, including bar, line, circle graphs and Venn Diagrams					
15	15.2	Use labels and a title to complete a graph					

Mobile County Public School System  
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 Quarter 4

ACOS #	Manual/ QuizTrax #	Standards/Objectives	A check mark (✓) indicates the standard is assessed on:		Assessment		
			ARMT	SAT10	Taught	Tested	AMP Name
3	3.1	Demonstrate computational fluency, including quick recall, of subtraction facts with minuends through 20 using horizontal and vertical form					BFT
1	1.1	Compare and order whole numbers up to 1,000					Number Sense and Algebraic Properties
1	1.2	Expand whole numbers up to 1,000					
1	1.3	Determine the place value of a digit in a number through 999					
1	1.4	Determine a number when given the value of the ones, tens and hundreds					
1	1.5	Identify a number that is 100 more or 100 less than a given number					
2	2.3	Solve multistep addition and subtraction problems using authentic situations					
2	2.4	Justify the strategy used to solve addition and subtraction problems					
1	1.8	Identify zero as a placeholder in two- and three-digit numbers					
1	1.9	Compare numbers up to 1000 using the symbols $>$ , $<$ and $=$					
1	1.11	Use estimation to compare sets of objects when the quantity of one set is known					
	1.14	Identify and use multiple representations of numbers up to 1,000					
8	8.1	Recognize the associative property of addition					
	8.2	Demonstrate understanding of equivalence and the equal "=" sign by completing number sentences represented on both sides of the equal sign					
2	2.1	Solve 2-digit addition and subtraction problems <i>without</i> regrouping using multiple strategies					Subtraction with Regroupable Numbers
2	2.2	Solve two-digit addition and subtraction problems, with <i>numbers that may require the regrouping algorithm</i> , using multiple strategies					
4	4.1	Solve authentic multiplication and division problems					Mult. & Division
1	1.6	Count forward in multiples from a given number					Money, Time, and Probability
6	6.1	Determine the monetary value of like and unlike sets of coins and bills up to \$2.00					
6	6.2	Identify sets of coins of equivalent value					
6	6.4	Apply monetary symbols, including dollar (\$), cent (¢) and decimal point (.)					
6	6.5	Recognize the decimal numbers .10, .25, .50 and .75 as related to money					
	6.6	Use coins and bills to make change up to \$2.00					
	14.3	Solve problems related to elapsed time involving hours on the hour within a 12-hour period					
16	16.1	Determine if one event related to everyday life is more likely or less likely to occur than another event					
12	12.1	Measure length in standard units, including inches, feet and yards					Measurement
12	12.2	Measure length using metric units, including centimeter and meter					
12	12.3	Measure temperature in degrees Fahrenheit and <i>degrees Celsius</i>					
12	12.4	Use measurement tools, including rulers, yardsticks, meter sticks, tape measures or thermometers					
12	12.5	Estimate length to the nearest unit					
13	13.1	Measure weight and volume of familiar objects with nonstandard units					
13	13.2	Estimate weight and volume using nonstandard units					