

## Math-U-See® Correlation with the Common Core State Standards for Mathematical Content for First Grade

The first grade standards are found mostly in Alpha, which presents single-digit addition and subtraction. The standards on inequalities and multiple-digit addition and subtraction are covered in Beta.

Math-U-See's "Build, Write, Say" method and the use of manipulatives emphasize conceptual understanding. By the end of Alpha, students truly understand the mathematical concepts while also mastering the addition and subtraction math facts. Place value is a foundational principle in the Math-U-See curriculum, and students in Alpha quickly surpass the first grade and even some of the second grade standards on place value. Math-U-See presents subtraction as addition with an unknown, and the use of a symbol to represent a variable is introduced. Alpha Application and Enrichment pages feature coloring, drawing, word problems, and other fun learning methods. Be sure to utilize all of the resources available, which include the Decimal Street/Block Clock poster, the online Worksheet Generator, and the online Math Drill.

<b>KEY</b>				
Domain Name	#	Standard	Location in Math-U-See Curriculum	Comments
	<b>K.C.C. – Counting and Cardinality</b>			
Cluster	Know number names and the count sequence. (MAJOR)			
Standard # and Text from Common Core State Standards	<b>1</b>	Count to 100 by ones and by tens.	Counting to 100: Primer 14 (or Alpha 6)	Note that Math-U-See's method of counting begins with zero, not one.
			↑ Where in the Math-U-See Curriculum this standard is met.	↑ Additional Insights

#	Standard	Location in Math-U-See Curriculum	Comments
<b>1.OA. – Operations and Algebraic Thinking</b>			
Represent and solve problems involving addition and subtraction. (MAJOR)			
<b>1</b>	Using addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Addition word problems begin in Alpha 4. Addition word problems with unknowns are found throughout the student worksheets starting in Alpha 9D. Subtraction word problems begin in Alpha 19. Subtraction with Unknowns: Alpha 29. Application and Enrichment: Alpha 4G, 7G, 8G, 17G, 18G, 21G, 27G, 30G; Beta 7G, 12G	To completely fulfill the standard, take care to include the subtraction word problems with unknowns. These are found in the worksheets for Alpha 29.
<b>2</b>	Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g. by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Solving for the Unknown with Three Addends: Alpha 17 Application and Enrichment: Beta 16G	

Understand and apply properties of operations and the relationship between addition and subtraction. (MAJOR)			
<b>3</b>	Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) Examples: If $8+3=11$ is known, then $3+8=11$ is also known. (Commutative property of addition.) To add $2+6+4$ , the second two numbers can be added to make a ten, so $2+6+4=2+10=12$ (associative property of addition).	Commutative Property: Alpha 4 and 5 Associative Property: Alpha 14	
<b>4</b>	Understand subtraction as an unknown-addend problem. For example, subtract $10-8$ by finding the number that makes 10 when added to 8.	Introduction to Subtraction: Alpha 18 Application and Enrichment: 24G, 25G	Math-U-See specifically teaches students to set up subtraction problems as addition problems with an unknown.
Add and subtract within 20. (MAJOR)			
<b>5</b>	Relate counting to addition and subtraction (e.g. by counting on 2 to add 2).	Addition: Alpha 4 Subtraction: Alpha 18 Skip Counting by 10: Alpha 6 Skip Counting by Two: Alpha 11 Application and Enrichment: 10G, 11G	Math-U-See emphasizes this connection in its use of skip-counting, which is explained in Alpha 11.
<b>6</b>	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8+6=8+2+4=10+4=14$ ); decomposing a number leading to a ten (e.g., $13-4=13-3=10-1=9$ ); using the relationship between addition and subtraction (e.g., knowing that $8+4=12$ , one knows $12-8=4$ ); and creating equivalent but easier or known sums (e.g., adding $6+7$ by creating the known equivalent $6+6+1=12+1=13$ ).	Addition Making 10: Alpha 15 (or Primer 24) Relationship between addition and subtraction: Alpha 18 Subtraction Making 10: Alpha 24 Equivalent sums: Alpha 9, 10 Decomposition: Teaching Tip Alpha 10, 15 Addition +10: Mental Math in Alpha Instruction Manual Lesson 27	By Alpha 30, students should have fluency within 20. Be aware that the +10 and -10 facts are not treated as single-digits facts to be memorized but as a case to apply place value strategies.  For additional practice of facts, Math-U-See has an online worksheet generator and a drill page.
Work with addition and subtraction equations. (MAJOR)			
<b>7</b>	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. <i>For example, which of the following equations are true and which are false?</i> $6 = 6$ , $7 = 8 - 1$ , $5 + 2 = 2 + 5$ , $4 + 1 = 5 + 2$ .	Equal Sign: Alpha 4 True/False: Teaching Tip in Alpha 7	We suggest practicing the true/false problems verbally.  For the more complex problems like $5+2=2+5$ , inequality problems from Beta 3 worksheets could be used with modified directions.
<b>8</b>	Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. <i>For example, determine the unknown number that makes the equation true in each of the equations</i> $8 + ? = 11$ , $5 = ? - 3$ , $6+6=?$	Solving for an Unknown: Alpha 8, 10 Application and Enrichment: 15G, 16G	These problems are found throughout the student worksheets for Alpha and following. Using the symbol X for the unknown begins in Alpha 10 worksheets.

## 1.NBT. – Number and Operations in Base Ten

Extend the counting sequence. (MAJOR)			
<b>1</b>	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	Place Value: Alpha 1 Counting to 20: Alpha 2 Counting to 100 and Beyond: Alpha 6	Starting in Alpha 1 students are working on Decimal Street® with numbers larger than 100. Alpha 2 ensures student can count the teens correctly.
Understand place value. (MAJOR)			
<b>2</b>	Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:		Place value is one of the strongest principles in the Math-U-See curriculum. Decimal Street® is an effective tool for students to master place value.
<b>2a</b>	10 can be thought of as a bundle of ten ones - called a "ten."	Place Value: Alpha 1	
<b>2b</b>	The numbers 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	Place Value: Alpha 1	
<b>2c</b>	The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	Place Value: Alpha 1	
<b>3</b>	Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$ , $=$ , and $<$ .	Inequalities: Beta 3	Inequalities without using the $<$ and $>$ symbols are found in the Lesson Worksheets for Primer 6 and 9.  Beta 3 exceeds the standard's requirement of comparing two-digit numbers to comparing inequalities such as $3+9 \square 5+5$ .
Use place value understanding and properties of operations to add and subtract. (MAJOR)			
<b>4</b>	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	Multiple-Digit Addition: Beta 5 Addition with Regrouping: Beta 7	Addition of two-digit numbers is covered in Beta.  Math-U-See emphasizes that every value has its own place (ones with ones etc), and for many students the blocks are critical for understanding this concept.
<b>5</b>	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	Adding and Subtracting 10: Mental Math in Alpha 27	We suggest practicing this skill verbally.

6	Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.	This type of problem begins with the Alpha 20 student worksheets.	Math-U-See's strategy of "Build, Write, Say," with the blocks helps students understand the reasoning involved.
<b>1.MD. – Measurement and Data</b>			
<b>Measure lengths indirectly and by iterating length units. (MAJOR)</b>			
1	Order three objects by length; compare the lengths of two objects indirectly by using a third object.	Ordering by Length: Alpha 4 The Application and Enrichment for Alpha 3 gives students the opportunity to practice this skill.	We suggest encouraging this skill further through activity centers or guided play.
2	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.	Measurement Using Objects: Alpha 3 The Application and Enrichment for Alpha 3 gives students the opportunity to practice this skill.	We suggest encouraging this skill further through learning centers or guided play.
<b>Tell and write time. (Additional)</b>			
3	Tell and write time in hours and half-hours using analog and digital clocks.	Telling Time: Alpha Instruction Manual and Student Workbook Appendix Lessons A and B	Math-U-See surpasses this standard by introducing students to hours and minutes as early as Primer.  Note that Math-U-See focuses practice on the analog clock, assuming that students will encounter the digital clock in daily life.  Students are ready to work on telling time once they have mastered skip counting by 5 (Alpha 13).
<b>Represent and interpret data. (Supporting)</b>			
4	Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	Application and Enrichment: Alpha 28G	

**1.G. – Geometry****Reason with shapes and their attributes. (Additional)**

<b>1</b>	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.	Circles and Triangles: Alpha 11 Rectangles and Squares: Alpha 13	
<b>2</b>	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Students do not need to learn formal names such as "right rectangular prism.")	Teaching Tip in Alpha 13	Attribute blocks, geometric solids blocks, and/or tangrams are excellent tools for fulfilling this standard.
<b>3</b>	Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i> , <i>fourths</i> , and <i>quarters</i> , and use the phrases <i>half of</i> , <i>fourth of</i> , and <i>quarter of</i> . Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.	Sharing Parts: Teaching Tip in Alpha 14 Application and Enrichment: Alpha 14G	We suggest practicing this skill further verbally.  Additional examples can be found in the Beta Instruction Manual and Student Workbook Appendix A.