



2nd Grade LEUSD Learning Targets in Mathematics

The learning targets below are intended to provide a guide for teachers in determining whether students are exhibiting characteristics of being on pace to meet the standard at the end of the year, as well as for reporting to parents their child’s progress towards attainment of the standard. They are not intended to be fully inclusive of what a child is expected to be able to do, but rather serve as a guide for categorizing their progress towards achieving the standards at the end of the year. For a fuller description of each item, please reference the standards, the CA Math Framework and/or the Progressions Documents.

Major Cluster	1 st Trimester Learning Targets	2 nd Trimester Learning Targets	3 rd Trimester Learning Targets
Represent and solve problems involving addition and subtraction	Relate diagrams to situation equations Working towards representing and solving situational problems of all 3 types involving addition and subtraction within 100 Beginning to rewrite situation equations connecting addition and subtraction (___ - 38 = 49 is the same as 49 - 38 = ___)	Frequently can represent and solve situational problems of all 3 types involving addition and subtraction within 100 Beginning to master Level 3 methods for problems involving addition and subtraction within 20 Beginning to represent and solve 2-step situational problems of several sub-types, especially with single-digit addends Can write an equation for a situation with a symbol for the unknown Can make up any kind of 2-step problem and share them for solving	2.OA.1
Add and subtract within 20	Beginning to use mental strategies (counting on, making tens, decomposing, fact families, double, doubles plus one, relationship between addition/subtraction and/or equivalent but easier or known sums) to add and subtract within 20	Working towards fluency within 20 and falls back on earlier strategies when needed Regularly uses mental Level 2 and 3 strategies to solve addition and subtraction problems within 20	2.OA.2
<i>Understand place value</i>	Views 10 tens as forming a new unit called a “hundred”	Understands that 1 hundred is greater than any amount of tens and ones represented by a two-digit number	2.NBT.1, 2.NBT.2,

<p>Understand place value</p>	<p>Uses representations such as manipulative materials, math drawings and layered 3-digit place value cards to make connections between written 3-digit numbers and hundreds, tens and ones</p> <p>Views written numerals as the sum of their base-ten units (says 456 is “four hundreds five tens six ones”)</p> <p>Beginning to skip count by 5s, 10s and 100s</p> <p>Understands that 1 ten is greater than any amount of ones represented by a one-digit number</p>	<p>Understands that a hundred is a unit composed of 100 ones, but also that it is composed of 10 tens</p> <p>Communicates comparisons first in words before using only symbols (>, < and +) to indicate greater than, less than or equal to</p>	<p>2.NBT.3 and 2.NBT.4</p>
<p>Use place-value understanding and properties of operations to add and subtract</p>	<p>Uses representations such as manipulative materials and drawings to support reasoning and explanations about addition and subtraction within 100</p> <p>Beginning to implicitly use place value understanding to add ones to ones, tens to tens and hundreds to hundreds (building to the standards algorithms not required until grade 4)</p>	<p>Uses representations such as manipulative materials and drawings to support reasoning and explanations about addition and subtraction within three-digit numbers</p> <p>Reasons mentally by decomposing tens and ones when adding</p> <p>Beginning to use Level 3 strategies to solve addition and subtraction problems within 1,000</p> <p>Beginning to understand the connection between math drawings and manipulatives and a written method for addition and subtraction, both with and without decompositions</p>	<p>2.NBT.5, 2.NBT.6, 2.NBT.7, 2.NBT.8 AND 2.NBT.9</p>
<p>Measure and estimate lengths in standard units</p>	<p>Recognizes that the numerals on a ruler signify the amount of space that has already been covered, not the hash mark itself</p> <p>Understands units must be of equal size and that quantities with more units are larger</p>	<p>Iterates using 1 unit (marking off the endpoint and moving it to its next position)</p> <p>Views a ruler as a way to count the iteration of length units</p> <p>Beginning to understand it will take more length units to cover the same distance when the units are smaller (and vice-versa)</p>	<p>2.MD.1, 2.MD.2, 2.MD.3, AND 2.MD.4</p>
<p>Relate addition and subtraction to length</p>		<p>Beginning to combine and compare lengths using arithmetic operations</p> <p>Represents and solves missing measurement problems with length models such as tape diagrams and number bonds</p>	<p>2.MD.5 AND 2.MD.6</p>

		Understands that a number line is like a ruler in that consecutive whole numbers are 1 unit apart Beginning to use benchmark lengths to estimate lengths	
Reason with shapes and their attributes (not on the Report Card)	Identifies, describes and draws triangles, quadrilaterals, pentagons, hexagons and cubes in varying orientations	Recognizes all four-sided shapes as quadrilaterals Describes “corners” using the word “angles” Partitions rectangles into rows and columns of the same-size squares Beginning to partition circles and rectangles into equal parts in multiple ways and describe them as halves, thirds and/or fourths	

** The NBT progression gives examples of representations that can be used to connect numerals with quantities and to connect numerical representations with combination, composition, and decomposition of base-ten units as students work towards computational fluency.

** First graders are not expected to compute differences of two-digit numbers other than multiples of ten. Deferring such work until Grade 2 allows two-digit subtraction with and without decomposing to occur in close succession, highlighting the similarity between these two cases.

** The word *fluent* is used in the Standards to mean “fast and accurate. Fluency in each grade involves a mixture of just knowing some answers, knowing some answers from patterns (e.g., “adding 0 yields the same number”), and knowing some answers from the use of strategies. It is important to push sensitively and encouragingly toward fluency of the designated numbers at each grade level, recognizing that fluency will be a mixture of these kinds of thinking which may differ across students

** By the end of the K–2 grade span, students have sufficient experience with addition and subtraction to know single-digit sums from memory; as should be clear from the foregoing, this is not a matter of instilling facts divorced from their meanings, but rather as an outcome of a multi-year process that heavily involves the interplay of practice and reasoning.

Grade 2



In grade 2, instructional time should focus on four critical areas: (1) extending understanding of base-ten notation; (2) building fluency with addition and subtraction; (3) using standard units of measure; and (4) describing and analyzing shapes.

- (1) Students extend their understanding of the base-ten system. This includes ideas of counting in fives, tens, and multiples of hundreds, tens, and ones, as well as number relationships involving these units, including comparing. Students understand multi-digit numbers (up to 1000) written in base-ten notation, recognizing that the digits in each place represent amounts of thousands, hundreds, tens, or ones (e.g., 853 is 8 hundreds + 5 tens + 3 ones).
- (2) Students use their understanding of addition to develop fluency with addition and subtraction within 100. They solve problems within 1000 by applying their understanding of models for addition and subtraction, and they develop, discuss, and use efficient, accurate, and generalizable methods to compute sums and differences of whole numbers in base-ten notation, using their understanding of place value and the properties of operations. They select and accurately apply methods that are appropriate for the context and the numbers involved to mentally calculate sums and differences for numbers with only tens or only hundreds.
- (3) Students recognize the need for standard units of measure (centimeter and inch) and they use rulers and other measurement tools with the understanding that linear measure involves an iteration of units. They recognize that the smaller the unit, the more iterations they need to cover a given length.
- (4) Students describe and analyze shapes by examining their sides and angles. Students investigate, describe, and reason about decomposing and combining shapes to make other shapes. Through building, drawing, and analyzing two- and three-dimensional shapes, students develop a foundation for understanding area, volume, congruence, similarity, and symmetry in later grades.

Grade 2 Overview

Operations and Algebraic Thinking

- Represent and solve problems involving addition and subtraction.
- Add and subtract within 20.
- Work with equal groups of objects to gain foundations for multiplication.

Number and Operations in Base Ten

- Understand place value.
- Use place value understanding and properties of operations to add and subtract.

Measurement and Data

- Measure and estimate lengths in standard units.
- Relate addition and subtraction to length.
- Work with time and money.
- Represent and interpret data.

Geometry

- Reason with shapes and their attributes.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Operations and Algebraic Thinking

2.OA

Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.¹

Add and subtract within 20.

2. Fluently add and subtract within 20 using mental strategies.² By end of Grade 2, know from memory all sums of two one-digit numbers.

Work with equal groups of objects to gain foundations for multiplication.

3. Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends.
4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Number and Operations in Base Ten

2.NBT

Understand place value.

1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
 - a. 100 can be thought of as a bundle of ten tens—called a “hundred.”
 - b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
2. Count within 1000; skip-count by 2s, 5s, 10s, and 100s. CA
3. Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Use place value understanding and properties of operations to add and subtract.

5. Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
6. Add up to four two-digit numbers using strategies based on place value and properties of operations.
7. Add and subtract within 1000, 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. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

1. See Glossary, Table 1.

2. See standard 1.OA.6 for a list of mental strategies.

7.1 Use estimation strategies to make reasonable estimates in problem solving. CA

8. Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.
9. Explain why addition and subtraction strategies work, using place value and the properties of operations.³

Measurement and Data**2.MD****Measure and estimate lengths in standard units.**

1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
3. Estimate lengths using units of inches, feet, centimeters, and meters.
4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Relate addition and subtraction to length.

5. Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, . . . , and represent whole-number sums and differences within 100 on a number line diagram.

Work with time and money.

7. Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. **Know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year). CA**
8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.
Example: If you have 2 dimes and 3 pennies, how many cents do you have?

Represent and interpret data.

9. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.
10. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems⁴ using information presented in a bar graph.

3. Explanations may be supported by drawings or objects.

4. See Glossary, Table 1.

Reason with shapes and their attributes.

1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.⁵ Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words *halves*, *thirds*, *half of*, *a third of*, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

5. Sizes are compared directly or visually, not compared by measuring.