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|  MATH NEWS  |
|  Second Grade Newsletter Winter/Spring  |
|  Math Tips for Families Unit 5: Addition and Subtraction within 1000 |

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| **Unit 5: Addition and Subtraction within 1000.** In this unit students will continue to use and apply different strategies to solve addition and subtraction problems. They will use multiple strategies: * Open Number Lines
* Base Ten Blocks or representations
* Expanded Form
* Decomposing values in different ways

By using these strategies, as well as those that students create, they will reinforce their own number sense. Students will conceptualize both addition and subtraction and learn about their reciprocal nature.  We will not be teaching the standard algorithm with regrouping this year, since the focus at this stage of their learning is to reinforce place value patterns and how values relate to each other. It is important that students practice and share strategies for how to make sense of values and solving a problem. | **Before now…**Earlier in first and second grade, students focused on addition and subtraction with numbers to 20, then addition and subtraction within 100.We will continue to practice and work with these equations to build our fluency (see mental strategies on the next page) , and also expand our understanding of place value patterns to hundreds up through the thousands.  |
| **Relating Units: Ones, Tens, Hundreds**Students build on their previous work with groups of tens to make bundles of hundreds, with or without leftovers, using multiple representations like a quick-hundred version that is a drawn square in which students visualize or imagine 10 tens | **Using Questions*** How many ones, tens, and hundreds are in this number\_\_\_\_\_\_?
* Is this amount \_\_\_\_\_ more than, less than, or equal to this amount \_\_\_\_\_? How do you know?
* How much is one ten more than \_\_\_?
* How much is ten less than \_\_\_\_\_\_\_?
* How much is 100 more?
 | **How You Can Help** * Look for two and three digit numbers in your world. Share them with your child and explore them together.
* Compare values
* Continue to review simple addition and subtraction
* Play card games and domino games where players need to add and subtract ones and tens.
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| **Addition Methods 456 + 167=** |
| **Partial Sums & Place Value Block pictures**In this written addition method, all partial sums are recorded underneath the addition bar. *Addition is performed from left to right in this example, but students can also work from right to left.* In the drawing, it is clear that hundreds are added to hundreds, tens to tens, and ones to ones, which are eventually grouped into larger units where possible to represent the total, 623. | **Composing Units**In this method, digits representing newly composed units ( tens or hundreds) are ***placed below the addends*** from which they were derived, to the right to indicate that they are represented as a larger, newly composed unit. The addition proceeds right to left. The advantage to placing the composed units as shown is that it is clearer where they came from—e.g., the 1 and 3 that came from the sum of the ones-place digits (6 + 7) are close to each other. This eliminates confusion that can arise from traditional methods involving “carrying,” which tends to separate the two digits that came from 13 and obscure the meaning of the numbers. |
| **The ability to decompose values is key!** *Decompose means to break apart.*  |
| **Using an Open Number Line - by Decomposing the addend 167**Students can break 167 into **chunks** that are simpler to work with. 167 is equal to 1 hundred, 6 tens, 7 ones **+ 100 +10 +10 +10 +10 +10 +10** + 4 +3**456 556** 566 576 586 596 606 616 620 **623****Or it could be jumped” in different increments or sequence- it is what makes sense to the child.**  **+ 100** + 4 **+10 +10 +10 +10 +10 +10** +3**456 556** 560 570 580 590 600 610 620 **623****\*Notice in this one, how the jumps were made to get to a “friendly” number** *(a ten).**556 + 4= 560 Now it is simpler to count by tens.*  |

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| **Subtraction Methods Combining Place Value Representations and Notation 425 - 278=** |
| **Decompose First Method***Decomposing can start from the left or the right with this method.* Students may be less likely to mistakenly subtract the top number from the bottom in this method. | **Decompose As You Go Method**Students first **ungroup** a ten *(change it to ten ones)* so they can subtract 8 from 15. They may mistakenly try to subtract the tens as well, getting 7 – 1 = 6. Led to see their error, students find they need to **ungroup** hundreds first to subtract the tens, then the hundreds.  |
| **Finding Differences Using an Open Number Line 425 - 278=** Start from the whole and subtract chunks at a time by jumping backward. Decomposing first makes it easier: **278** is the same as **2 hundreds**, seven tens, 8 ones.  -3 -50 -10 -10 -5 -100 - 100 **147 150 200 220 225 325 425**Think Addition, reframe the equation as a missing addend question, jump forward to get to **425** **278 + = 425****147** **+ 100 +2 +10 +10 +10 +10** + 5 **278 378 380 400 420 425** |
| Key California Content Standards for this Unit[**2.NBT.7**](http://www.corestandards.org/Math/Content/2/NBT/B/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. **2.NBT.7.1** **Use estimation strategies** to make reasonable estimates in problem solving.  **2.OA.A.1** Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of addition 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.  |
| **When possible, use units that are larger than one ~ 10 and 100**Students should understand how to find one, ten, or a hundred more or less than any given number up to 1,000. For example: If starting with the number 365, what is…* 10 less 355
* 1 more 366
* 1 less 364.
* 100 more 465
* 100 less 265
* 10 more 375

**Compose** (*build*) **Numbers Values By Skip Counting Up** Cory collects bottle caps. His goal is to collect 952 by the end of the year. Cory has 752 already. How many more does he need to reach his goal? 752, if I skip-count by hundreds it would be 752, 852, 952. Cory has 200 more bottle caps to collect to get to his goal. Imagine what it would look like on a number line.The starting number is 223, skip count up by 10s 7 times. What is the last number counted? **Decompose** *(Take apart)* **Numbers By Skip Counting Down** The starting number is 223, skip count down by 10s 7 time. What is the last number counted? **Skip-Count by 100s from 857 to 257** : 857, 757, 657, 557, 457, 357, 257 |
| **Making Sense of Word Problems**Tammy and her mom sold 70 cupcakes at the bake sale. If they baked 100 cupcakes, how many cupcakes do they have left? One way to solve this problem is by drawing circles that represent 10. Mark off the 70 cupcakes that were sold. How many cupcakes are left? Another way is to draw a tape diagram. Start by drawing a box to represent 100 cupcakes. Next draw the box to represent 70. Mark the unknown amount with a question mark. How many more cupcakes are needed to get from 70 to 100? |
| **Mental Strategies to Continue Practicing** [This Photo](http://ontariomathresources.ca/math-strands/number-sense-and-numeration/) by Unknown Author is licensed under [CC BY](https://creativecommons.org/licenses/by/3.0/)Mental strategies, like those to the right, help students develop fluency in adding and subtracting within 20 as they make sense of number relationships |
| C:\Users\dcoker\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\F1A37095.tmp**TUSD** ~  *Supporting community & family understanding*  | Sources Used in this Newsletter:* California Mathematics Content Standards
* California Mathematics Framework
* Eureka Math Tips for Parents
* Lafayette Parish School System: “All Hands on Deck with Math” Topic Newsletters <https://www.lpssonline.com/site5579.php>
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