Grade 2 – Unit 5: Using Algorithms for 2-Digit Addition and Subtraction

In this unit your child will work to connect addition and subtraction strategies taught in the previous unit, to make sense of the traditional algorithm for 2-digit addition and subtraction. Students will use addition and subtraction within 100 to solve one and two-step word problems. This unit focuses on the break-apart algorithm and the traditional algorithm. It is vital for students to not be pushed to the traditional algorithm too soon. Doing this will lead to procedural understanding rather than conceptual understanding.

- **Understanding the Traditional Algorithm with Addition:**
  - Your child will begin by modeling with base ten blocks and connecting the model to how we record regrouping with traditional addition.

  - **For example:**

    Sybilla saved 37 dollars in June and 26 dollars in July. Does she have enough money to buy a bike that costs 60 dollars?

    - By connecting the concrete model of base ten blocks, to recording the standard algorithm for addition with regrouping, we support children in understanding the algorithm, not just memorizing. Parents are encouraged to use the language “regrouping” instead of “carrying.” The term regroup connects students thinking to the concrete model of regrouping 10 ones for 1 ten. Parents can ask these questions:

    1. **Do you need to regroup the ones? Why?** (Yes; there are 10 or more ones)

    2. **What do you do when you regroup?** (I regroup 13 ones into 1 ten 3 ones.)

    3. **How do you record this?** (I write 3 in the Ones column as part of the sum and 1 above the other tens to show that I added another ten.

    4. **What will you add in the Tens column?** (The digits 3 and 2 in the tens column plus the 1 ten I regrouped.)
• Understanding the Traditional Algorithm with Subtraction:
  o Your child will begin by modeling with base ten blocks and connecting the model to how we record regrouping with traditional subtraction.
  o For example:

    \[
    \begin{array}{c}
    \text{Step 1: Show 56. Are there enough ones to subtract 9?} \\
    \text{Step 2: If there are not enough ones, regroup 1 ten as 10 ones.} \\
    \text{Step 3: Subtract the ones.} \\
    \text{Step 4: Subtract the tens.}
    \end{array}
    \]

    Jesselle had 56 markers. She lost some on a trip. Now she has 19 markers. How many markers did she lose?

To learn more about connecting models to the traditional method, check out these videos by clicking on the QR code or the link.

- [http://goo.gl/UU0Km0](http://goo.gl/UU0Km0)
- [http://goo.gl/EIwQRD](http://goo.gl/EIwQRD)

Sample tasks your child should be able to work through by the end of the unit:

Mrs. Sullivan’s class collected water bottles for recycling. The first week they collected 15 bottles, second week 27 bottles and they collected 31 bottles on the third week. How many bottles did the class collect?

Show two ways you can solve this problem.

\[
\begin{array}{c}
\text{Mrs. Sullivan’s class collected water bottles for recycling.} \\
\text{The first week they collected 15 bottles, second week 27 bottles and} \\
\text{they collected 31 bottles on the third week. How many bottles did the class collect?}
\end{array}
\]

Purposeful Practice you and your child may work on at home together.

- Pose a simple story problem to your child. Ask them to use counters (cereal, beans, etc) to model the items and the actions taking place in the problem (Similar to the examples described at the top of the page).
- Encourage your child to think about the action in the problem to determine if they should add or subtract.