Family Support Materials

## Wrapping Up Addition and Subtraction Within 1,000

In this unit, students use their understanding of place value to round whole numbers and to add and subtract within 1,000. They also solve two-step problems.

Section A: Add within 1,000

In this section, students revisit numbers within 1,000 and consider ways to decompose (break apart) the numbers based on place value (hundreds, tens, and ones). To add and subtract numbers within 1,000, they start by using diagrams and strategies learned in grade 2. Then, they make sense of algorithms (steps that work every time, no matter the numbers involved) that make adding more efficient.

For example, here are three ways to find the value of $362 + 354$:

<div>

using base-ten blocks or diagrams
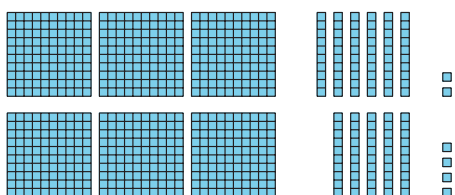
using expanded form

$$
\begin{array}{r}
300 + 60 + 2 \\
+\quad 300 + 50 + 4 \\
\hline
600 + 110 + 6
\end{array}
$$

recording partial sums vertically

$$
\begin{array}{r}
3\ 6\ 2 \\
+\quad 3\ 5\ 4 \\
\hline
6 \\
1\ 1\ 0 \\
+\quad 6\ 0\ 0 \\
\hline
7\ 1\ 6
\end{array}
$$

</div>

Using the standard algorithm for addition is not required until grade 4. Students who already know the standard algorithm still need to make sense the role of place value in the algorithm to support their work with decimals and fractions in future grades.

Section B: Subtract within 1,000

In this section, students analyze and use algorithms for subtraction, while continuing to use base-ten blocks and diagrams to think about subtraction. They notice that it is difficult to use drawings to show a hundred being decomposed or regrouped into tens (or a ten into ones), and that an algorithm is helpful.

Students make sense of a subtraction algorithm that uses expanded form to show how numbers are being regrouped. This non-conventional notation allows students to see the meaning behind the digits above the numbers in the standard algorithm.

subtracting using expanded form	standard subtraction algorithm

$$\begin{array}{r} \color{blue}400 \quad \color{blue}120 \\ 5\!\!\!\diagup 0\!\!\!\diagup + 2\!\!\!\diagup 0\!\!\!\diagup + 8 \\ - \quad 200 + 70 + 1 \\ \hline \end{array}$$

$$\begin{array}{r} \color{blue}4 \ \ \color{blue}12 \\ 5\!\!\!\diagup \ 2\!\!\!\diagup \ 8 \\ - \ 2 \ 7 \ 1 \\ \hline \end{array}$$

As with addition, the standard algorithm for subtraction is not expected until grade 4. The work here focuses on making sense of the regrouping sometimes required when we subtract.

Section C: Round within 1,000

In this section, students learn to round whole numbers to the nearest ten or hundred, using number line diagrams in their reasoning. For example, they can see that for 364, the nearest ten (or multiple of 10) is 360, and the nearest hundred (or multiple of 100) is 400.

364

300   400
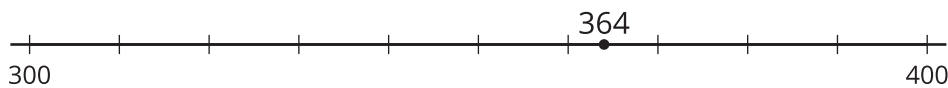
Section D: Solve Two-Step Problems

In this section, students apply their work with addition, subtraction, and multiplication to solve problems that require two steps, such as:

Mai had 104 beads. She bought two packs of beads and now she has 124 beads.
How many beads were in each pack?

Try it at home!

Near the end of the unit, ask your student to find answers to the following problems using an algorithm of their choice:

- $293 + 592$
- $728 - 384$

Questions that may be helpful as they work:

- Can you explain the steps in your algorithm?
- Does your answer make sense? How do you know?
- Can you round your answer to the nearest multiple of 10? 100?