Goals

Students will use base ten blocks and base ten representations to add three-digit numbers without regrouping.

PRIOR KNOWLEDGE REQUIRED

Can use base ten blocks to represent three-digit numbers
Can use base ten representations to add two-digit numbers

MATERIALS

- paper base ten blocks (optional)
- base ten blocks (9 hundreds, 9 tens, and 9 ones per student pair)
- 2 paper bags (per student pair)
- BLM Using Place Value to Add (1) (p. M-97)

Adding one-digit numbers to three-digit numbers by counting on. Write on the board:

\[29 + 5 = \]

SAY: Let’s do this addition by counting on. Count on as a class to get 34. Write “34.” Write “129 + 5 = “. SAY: Let’s do this by counting on too. Count on as a class to get 134.

Repeat with 47 + 6 and 247 + 6. (53, 253) ASK: What is the difference between the first addition and the second? (the 200) What is the difference between the first total and the second? (the 200)

Exercises: Add by counting on.

a) 53 + 4  
   b) 453 + 4  
   c) 92 + 7  

   d) 692 + 7  
   e) 5 + 3  
   f) 705 + 3  

Answers: a) 57, b) 457, c) 99, d) 699, e) 8, f) 708

Adding two-digit numbers to three-digit numbers using base ten blocks.  

SAY: In the exercise, you added one-digit numbers. Let’s add some two-digit numbers. Draw, affix, or project on the board:

\[
\begin{array}{c}
\text{___ hundreds and ___ tens and ___ ones} \\
\end{array}
\]

SAY: We will add by counting the blocks. ASK: How many hundreds are there? (2) Write “2” in the first blank. ASK: How many tens are there altogether? (6) Count the 6 tens blocks and write “6” in the second blank. ASK: How many ones? (8) Count the 8 ones blocks and write the ones in...
the third blank. ASK: What number is this? (268) Write the total. The final picture should look like this:

\[ \begin{array}{c}
\text{100} \\
\text{10} \\
\text{8}
\end{array} \quad + \quad \begin{array}{c}
\text{100} \\
\text{60} \\
\text{8}
\end{array} = \begin{array}{c}
\text{268}
\end{array} \]

Repeat with blocks for 337 + 42. (379) The final picture should look like this:

\[ \begin{array}{c}
\text{300} \\
\text{70} \\
\text{9}
\end{array} \quad + \quad \begin{array}{c}
\text{40} \\
\text{2}
\end{array} = \begin{array}{c}
\text{379}
\end{array} \]

**Exercises:** Write the number of hundreds, tens, and ones. Then add.

a)

\[ \begin{array}{c}
\text{100} \\
\text{80} \\
\text{6}
\end{array} \quad + \quad \begin{array}{c}
\text{10} \\
\text{7}
\end{array} = \begin{array}{c}
\text{186}
\end{array} \]

b)

\[ \begin{array}{c}
\text{400} \\
\text{50} \\
\text{6}
\end{array} \quad + \quad \begin{array}{c}
\text{4}
\end{array} = \begin{array}{c}
\text{456}
\end{array} \]

**Answers**

a) 1 hundred and 8 tens and 6 ones = 186

b) 4 hundreds and 5 tens and 6 ones = 456

Draw on the board:

\[ \begin{array}{c}
\begin{array}{c}
\text{300} \\
\text{20} \\
\text{1}
\end{array} \quad + \quad \begin{array}{c}
\text{40} \\
\text{6}
\end{array}
\end{array} = \begin{array}{c}
\text{367}
\end{array} \]

ASK: What number does the first set of blocks show? (321) (You may wish to underline the first set of blocks.) Write “321” under the first set of blocks.

ASK: What number does the second set of blocks show? (46) Write “46” under the second set of blocks. Write the two numbers vertically beside the picture to add them. ASK: What number do the blocks make altogether? (367) Write the total. The final picture should look like this:

\[ \begin{array}{c}
\begin{array}{c}
\text{300} \\
\text{20} \\
\text{1}
\end{array} \quad + \quad \begin{array}{c}
\text{40} \\
\text{6}
\end{array}
\end{array} = \begin{array}{c}
\text{321}
\end{array} \quad + \quad \begin{array}{c}
\text{46}
\end{array} = \begin{array}{c}
\text{367}
\end{array} \]
ACTIVITY 1

Three-Digit Addition. Divide students into pairs. Distribute two paper bags and BLM Using Place Value to Add (1) to each pair of students. One bag should contain five of each of hundreds, tens, and ones blocks. The second bag should contain four tens and four ones blocks. Player 1 removes any number of blocks from the first bag. Player 2 draws the blocks and then writes the number that the blocks show as the first addend in an addition grid on the BLM. Player 2 removes any number of blocks from the second bag. Player 1 draws and records the blocks as the second addend in the grid. Player 1 uses the blocks to help add. Players return the blocks to their original bags, switch roles, and play again.

Adding three-digit numbers using base ten blocks. SAY: We have added one- and two-digit numbers to three-digit numbers. Let’s add 2 three-digit numbers. Draw or affix on the board:

\[ \begin{array}{c}
\text{100 blocks} \\
\text{10 blocks} \\
\text{1 block}
\end{array} + \begin{array}{c}
\text{100 blocks} \\
\text{0 blocks}
\end{array} \]


\[ \begin{array}{c}
\text{100 blocks} \\
\text{10 blocks} \\
\text{1 block}
\end{array} + \begin{array}{c}
\text{100 blocks} \\
\text{0 blocks}
\end{array} = \begin{array}{c}
\text{100 blocks} \\
\text{10 blocks} \\
\text{1 block}
\end{array} \]

265
+ 314
\[ \text{579} \]

ACTIVITY 2

Students play Three-Digit Addition again. In advance, add four hundreds blocks and remove the ones blocks from the second bag (which did not contain hundreds).
Extensions

1. Explain why \( 2 + 3 = 5 \) means that \( 200 + 300 = 500 \).

   **Sample answers:** If you start with 2 blocks and add 3 blocks, you get 5 blocks. If the blocks are hundreds blocks, then 2 hundreds blocks + 3 hundreds blocks = 5 hundreds blocks, or \( 200 + 300 = 500 \).

2. Draw a picture to find the missing addend.
   
   a) \[ \begin{array}{c}
   257 \\
   + 342 \\
   \hline
   599 
   \end{array} \]
   
   b) \[ \begin{array}{c}
   381 \\
   + 406 \\
   \hline
   787 
   \end{array} \]

   **Answers**
   
   a) \[ \begin{array}{c}
   257 \\
   + 342 \\
   \hline
   599 
   \end{array} \]
   
   b) \[ \begin{array}{c}
   381 \\
   + 406 \\
   \hline
   787 
   \end{array} \]

3. Find the greatest number less than 1,000 that you can add without regrouping.

   a) 325  
   b) 174  
   c) 860  
   **Bonus:** 999

   **Answers:** a) 674, b) 825, c) 139, Bonus: 0

4. Add the numbers in Extension 3. What is the answer? Why is the answer always the same?

   **Answers:** The answer is always 999. If the answer were smaller than 999, I could add more before regrouping. If the answer were bigger than 999, I would need to regroup at least the hundreds.
Goals

Students will add three-digit numbers without regrouping by first writing the addends in expanded form, adding the ones, tens, and hundreds, and then writing the total from the expanded form.

Prior Knowledge Required

Can read and write three-digit numbers in expanded form
Can add two-digit numbers using expanded form

Materials

- Paper base ten blocks
- 1 cm grid paper or BLM 1 cm Grid Paper (p. U-1)
- Dominoes with 9 or fewer dots (about 10 per student pair)
- Paper bag (1 per student pair)
- BLM Place Value with Thousands (pp. M-99–101, see Extension 4)

Adding three-digit numbers using base ten names. Write on the board:

\[
\begin{align*}
361 & \quad 3 \text{ hundreds} + 6 \text{ tens} + 1 \text{ one} \\
+ & \quad 425 \\
786 & \quad 7 \text{ hundreds} + 8 \text{ tens} + 6 \text{ ones}
\end{align*}
\]

Have a volunteer draw or affix blocks for 361 beside the number. ASK: How many hundreds are there in 361? (3) Write “3 hundreds” beside the picture. ASK: How many tens in 361? (6) Write “+ 6 tens.” ASK: How many ones? (1) Write “+ 1 one,” as shown below:

\[
\begin{align*}
361 & \quad 3 \text{ hundreds} + 6 \text{ tens} + 1 \text{ one} \\
+ & \quad 425 \\
786 & \quad 7 \text{ hundreds} + 8 \text{ tens} + 6 \text{ ones}
\end{align*}
\]

Repeat with 425. The picture should look like this:

\[
\begin{align*}
361 & \quad 3 \text{ hundreds} + 6 \text{ tens} + 1 \text{ one} \\
+ & \quad 425 \\
786 & \quad 7 \text{ hundreds} + 8 \text{ tens} + 6 \text{ ones}
\end{align*}
\]

SAY: When we add using blocks, we count each kind of block. Point to the addition and ASK: How many hundreds are there altogether? (7) Point to the hundreds in the base ten names and ASK: How do we get 7 over here? (add 3 and 4) Write “7” in both places. Repeat with the tens and ones. The final picture should look like this:

\[
\begin{align*}
361 & \quad 3 \text{ hundreds} + 6 \text{ tens} + 1 \text{ one} \\
+ & \quad 425 \\
786 & \quad 7 \text{ hundreds} + 8 \text{ tens} + 6 \text{ ones}
\end{align*}
\]

Write on the board:

\[
\begin{align*}
523 & \quad 5 \text{ hundreds} + 2 \text{ tens} + 3 \text{ ones} \\
+ & \quad 146 \\
669 & \quad 6 \text{ hundreds} + 6 \text{ tens} + 9 \text{ ones}
\end{align*}
\]
SAY: This time let’s go straight to the base ten names. Write “____ hundreds + ____ tens + ____ ones” beside both numbers. Have volunteers fill in the digits. The picture should look like this:

\[
\begin{align*}
523 & \quad +146 \\
& \quad 5 \text{ hundreds} + 2 \text{ tens} + 3 \text{ ones} \\
& \quad 1 \text{ hundred} + 4 \text{ tens} + 6 \text{ ones} \\
& \quad 6 \text{ hundreds} + 6 \text{ tens} + 9 \text{ ones}
\end{align*}
\]

ASK: What number does this show? (669) Write “669” below the addition.

If students need reinforcement, repeat with 452 + 532. (see answer below)

\[
\begin{align*}
452 & \quad +532 \\
& \quad 4 \text{ hundreds} + 5 \text{ tens} + 2 \text{ ones} \\
& \quad 5 \text{ hundreds} + 3 \text{ tens} + 2 \text{ ones} \\
& \quad 984 \\
& \quad 9 \text{ hundreds} + 8 \text{ tens} + 4 \text{ ones}
\end{align*}
\]

Give students 1 cm grid paper or BLM 1 cm Grid Paper for the following exercise, to help them line the digits up correctly.

**Exercises:** Write the numbers using base ten names. Use the base ten names to add.

\[
\begin{align*}
a) \quad & 237 + 631 \\
& 868 \\
& 5 \text{ hundreds} + 3 \text{ tens} + 2 \text{ ones} \\
& 6 \text{ hundreds} + 6 \text{ tens} + 8 \text{ ones} \\
b) \quad & 443 + 532 \\
& 975 \\
& 4 \text{ hundreds} + 4 \text{ tens} + 3 \text{ ones} \\
& 5 \text{ hundreds} + 3 \text{ tens} + 2 \text{ ones} \\
c) \quad & 621 + 378 \\
& 999 \\
& 6 \text{ hundreds} + 2 \text{ tens} + 1 \text{ one} \\
& 3 \text{ hundreds} + 7 \text{ tens} + 8 \text{ ones} \\
& 9 \text{ hundreds} + 9 \text{ tens} + 9 \text{ ones}
\end{align*}
\]

**Adding three-digit numbers using expanded form.** SAY: Let’s add using expanded form with no names. Write on the board:

\[
\begin{align*}
356 + 413 \\
300 + 50 + 6 \\
400 + 10 + 3
\end{align*}
\]
Indicate the first addition for the expanded form and ASK: What is \(300 + 400\)?

(700) What is \(50 + 10\)? (60) What is \(6 + 3\)? (9) Write each total on the board as you derive it. ASK: What number has this expanded form? (769) Write “769” below the addition. The final picture should look like this:

\[
\begin{array}{ccc}
356 & 300 + 50 + 6 \\
+ & 413 & 400 + 10 + 3 \\
769 & 700 + 60 + 9 \\
\end{array}
\]

Repeat with \(825 + 163\). The final picture should look like this:

\[
\begin{array}{ccc}
825 & 800 + 20 + 5 \\
+ & 163 & 100 + 60 + 3 \\
988 & 900 + 80 + 8 \\
\end{array}
\]

**Exercises:** Write the numbers in expanded form. Then add.

a) \(453\)  
   + \(226\)  
   \[\boxed{679}\]

b) \(617\)  
   + \(181\)  
   \[\boxed{798}\]

c) \(362\)  
   + \(514\)  
   \[\boxed{876}\]

**Answers**

a) \(453\)  
   + \(226\)  
   \[\boxed{679}\]

b) \(617\)  
   + \(181\)  
   \[\boxed{798}\]

c) \(362\)  
   + \(514\)  
   \[\boxed{876}\]

**Adding three-digit numbers with zero digits using expanded form.**

SAY: So far, none of the numbers we added had a zero digit. Let’s do one with a zero. Write on the board:

\[
\begin{align*}
705 \\
+ & 241 \\
\end{align*}
\]

SAY: We will add these numbers using base ten names. Write “hundreds + tens + ones” beside both numbers, leaving space to fill in the numbers.

ASK: How many hundreds in 705? (7) Write “7.” ASK: How many tens in 705? (zero) SAY: In the base ten name, we write that there are zero tens. Write “0.” ASK: How many ones in 705? (5) Write “5.” Have volunteers write the digits for 241, as shown below:

\[
\begin{align*}
705 & \quad 7 \text{ hundreds} + 0 \text{ tens} + 5 \text{ ones} \\
+ & 241 \quad 2 \text{ hundreds} + 4 \text{ tens} + 1 \text{ one} \\
\end{align*}
\]

Indicate the hundreds in the base ten name and ASK: What is 7 hundreds plus 2 hundreds? (9 hundreds) Write “900.” Repeat for the tens and the ones. ASK: What is 9 hundreds and 4 tens and 6 ones? (946)
Write the total below the addition. The final picture should look like this:

\[
\begin{array}{c}
705 & \text{7 hundreds} & + & 0 \text{ tens} & + & 5 \text{ ones} \\
+ & 241 & \text{2 hundreds} & + & 4 \text{ tens} & + & 1 \text{ one} \\
946 & \text{9 hundreds} & + & 4 \text{ tens} & + & 6 \text{ ones} \\
\end{array}
\]

**Exercises:** Write the numbers using base ten names. Then add.

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<tbody>
<tr>
<td>a)</td>
<td>320</td>
<td>b)</td>
<td>402</td>
</tr>
<tr>
<td>+</td>
<td>317</td>
<td>+</td>
<td>256</td>
</tr>
</tbody>
</table>

**Answers**

a) 
\[
\begin{array}{c}
320 & \text{3 hundreds} & + & 2 \text{ tens} & + & 0 \text{ ones} \\
+ & 317 & \text{3 hundreds} & + & 1 \text{ ten} & + & 7 \text{ ones} \\
637 & \text{6 hundreds} & + & 3 \text{ tens} & + & 7 \text{ ones} \\
\end{array}
\]

b) 
\[
\begin{array}{c}
402 & \text{4 hundreds} & + & 0 \text{ tens} & + & 2 \text{ ones} \\
+ & 256 & \text{2 hundreds} & + & 5 \text{ tens} & + & 6 \text{ ones} \\
658 & \text{6 hundreds} & + & 5 \text{ tens} & + & 8 \text{ ones} \\
\end{array}
\]

c) 
\[
\begin{array}{c}
567 & \text{5 hundreds} & + & 6 \text{ tens} & + & 7 \text{ ones} \\
+ & 210 & \text{2 hundreds} & + & 1 \text{ ten} & + & 0 \text{ ones} \\
777 & \text{7 hundreds} & + & 7 \text{ tens} & + & 7 \text{ ones} \\
\end{array}
\]

**Bonus:**

\[
\begin{array}{c}
410 & \text{4 hundreds} & + & 1 \text{ ten} & + & 0 \text{ ones} \\
+ & 450 & \text{4 hundreds} & + & 5 \text{ tens} & + & 0 \text{ ones} \\
860 & \text{8 hundreds} & + & 6 \text{ tens} & + & 0 \text{ ones} \\
\end{array}
\]

**SAY:** When we write numbers in expanded form, we do not write any zero digits. Write on the board:

\[
\begin{array}{c}
420 \\
+ 125 \\
\end{array}
\]

**SAY:** Let’s write these in expanded form. Prompt for the hundreds and tens. **ASK:** How many ones in 420? (zero) **SAY:** We do not write the zero. Then prompt for the expansion of 125. After you write the 5 ones, **SAY:** There are no ones in 420, but we still line up the hundreds and tens. The picture should look like this:

\[
\begin{array}{c}
420 & 400 + 20 \\
+ 125 & 100 + 20 + 5 \\
\end{array}
\]

**ASK:** What is 400 plus 100? (500) Write “500.” What is 20 plus 20? (40) Write “+ 40.” **ASK:** What is nothing plus 5? (5) Write “+ 5.” **SAY:** Adding nothing is like adding zero—there is no change. **ASK:** What is 420 + 125? (545) The final picture should look like this:

\[
\begin{array}{c}
420 & 400 + 20 \\
+ 125 & 100 + 20 + 5 \\
545 & 500 + 40 + 5 \\
\end{array}
\]
SAY: When the tens digit is zero, we have to be more careful about lining up numbers. Write on the board:

\[
\begin{array}{c}
643 \\
+ 201
\end{array}
\]

Have a volunteer write the expanded form for 643. SAY: The expanded form for 201 is \(200 + 1\). We write the 200 below the 600. We write the 1 below the ones digit of 643, which is 3. We also need a plus sign. The picture should look like this:

\[
\begin{array}{c}
643 \\
+ 201
\end{array} \\
\begin{array}{c}
600 + 40 + 3 \\
200 + 1
\end{array}
\]

SAY: Now we add the columns. ASK: What is \(600 + 200\)? (800) What is 40 plus nothing? (40) What is 3 plus 1? (4) After each part, record the answer. ASK: What number is this? (844) Write the total in the vertical addition. The final picture should look like this:

\[
\begin{array}{c}
643 \\
+ 201
\end{array} \\
\begin{array}{c}
600 + 40 + 3 \\
200 + 1
\end{array} \\
\begin{array}{c}
844 \\
800 + 40 + 4
\end{array}
\]

SAY: When the tens digit of the first number is zero, we need to leave room. Write on the board:

\[
\begin{array}{c}
504 \\
+ 123
\end{array}
\]

Have volunteers write the expanded form for the numbers. Make sure that there is enough room between 500 and 4, as shown below:

\[
\begin{array}{c}
504 \\
+ 123
\end{array} \\
\begin{array}{c}
500 + 4 \\
100 + 20 + 3
\end{array}
\]

Have volunteers do the addition and record their answers on the board. The final picture should look like this:

\[
\begin{array}{c}
504 \\
+ 123
\end{array} \\
\begin{array}{c}
500 + 4 \\
100 + 20 + 3
\end{array} \\
\begin{array}{c}
627 \\
600 + 20 + 7
\end{array}
\]

**Exercises:** Use expanded form to add.

a) \(703 + 281\)  

b) \(640 + 325\)  

c) \(579 + 220\)  

**Bonus:** \(408 + 320\)

\[\begin{array}{l}
a) 703 + 281 = 984 \\
b) 640 + 325 = 965 \\
c) 579 + 220 = 799 \quad \text{Bonus: } 408 + 320 = 728
\end{array}\]

**Answers**

\[\begin{array}{l}
a) 703 + 281 = 984 \\
\quad 700 \quad + \quad 3 \\
\quad 200 + 80 + 1 \\
\quad 900 + 80 + 4 \\
\quad 984 \\
\quad 965
\end{array}\]

\[\begin{array}{l}
c) 579 + 220 = 799 \quad \text{Bonus: } 408 + 320 = 728 \\
\quad 500 + 70 + 9 \\
\quad 200 + 20 \\
\quad 700 + 90 + 9 \\
\quad 700 + 20 + 8
\end{array}\]
ACTIVITY

Give each student pair a paper bag containing dominoes with dots that add to no more than nine. Player 1 chooses three dominoes at random from the bag and places them vertically beside each other. Together, the partners create an addition in expanded form for the dominoes. Player 2 adds. Players switch roles for each round. An example is shown below:

\[
\begin{array}{c}
500 + 40 + 6 \\
200 + 10 + 3 \\
700 + 50 + 9
\end{array}
\]

Extensions

NOTE: Extensions 1–3 must be done in order.

1. Trade 10 ones for 1 ten and 10 tens for 1 hundred. Write the answer in base ten names.
   a) 3 hundreds + 5 tens + 16 ones
   b) 8 hundreds + 11 tens + 5 ones
   c) 2 hundreds + 12 tens + 14 ones

   **Answers:** a) 3 hundreds + 6 tens + 6 ones, b) 9 hundreds + 1 ten + 5 ones, c) 3 hundreds + 3 tens + 4 ones

2. Add using base ten names. Write the answer. Then trade 10 ones for 1 ten and 10 tens for 1 hundred.
   a) 2 hundreds + 5 tens + 7 ones
      + 1 hundred + 3 tens + 5 ones
   b) 4 hundreds + 8 tens + 4 ones
      + 2 hundreds + 6 tens + 1 one
   c) 6 hundreds + 7 tens + 4 ones
      + 2 hundreds + 6 tens + 9 ones

   **Answers**
   a) 3 hundreds + 8 tens + 12 ones
      = 3 hundreds + 9 tens + 2 ones
   b) 6 hundreds + 14 tens + 5 ones
      = 7 hundreds + 4 tens + 5 ones
   c) 8 hundreds + 13 tens + 13 ones
      = 9 hundreds + 4 tens + 3 ones
3. Use base ten names to add.
   a) $579 + 315$
   b) $463 + 452$
   c) $258 + 379$

   **Answers**
   a) $579 + 315 = 894$
      
      5 hundreds + 7 tens + 9 ones
      + 3 hundreds + 1 tens + 5 ones
      8 hundreds + 9 tens + 4 ones
   b) $463 + 452 = 915$
      
      4 hundreds + 6 tens + 3 ones
      + 4 hundreds + 5 tens + 2 ones
      9 hundreds + 1 ten + 5 ones
   c) $258 + 379 = 637$
      
      2 hundreds + 5 tens + 8 ones
      + 3 hundreds + 7 tens + 9 ones
      6 hundreds + 3 tens + 7 ones

4. Have students complete BLM Place Value with Thousands. The third page of the BLM contains two copies of the same table. Cut the page and give each student only one copy of the table.

   **Answers**
   2. 2000, 3. 5000, 4. 8000, 6. 1000, 7. 4000, 8. 6000, 9. 9000,
   11–12.

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<th>Ones</th>
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   13.

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   (MP.6) Explain to a partner what the symbols $<$, $=$, and $>$ mean. Use examples with 3-digit numbers in your explanation.

   b) Use the symbols $<$, $=$, and $>$ to compare the pair of numbers.
      
      i) 2 tens + 3 hundreds + 9 ones  239
      ii) 7 ones + 4 tens + 8 hundreds  847
      iii) 9 hundreds + 7 ones + 2 tens  nine hundred thirty-one
      iv) five hundred sixty-seven  576
**Answers:** a) the symbol "<" means less than: for example, 132 is less than 423 so we can write $132 < 423$, the symbol "=" means equals: for example, 279 is the same number as two hundred seventy-nine so we can write $279 = \text{two hundred seventy-nine}$, and the symbol ">" means greater than: for example, 516 is more than 342, so we can write $516 > 342$; b) i) $>$, ii) $=$, iii) $<$, iv) $<$
Goals
Students will use the standard algorithm to add three-digit numbers without regrouping.

PRIOR KNOWLEDGE REQUIRED
Can use base ten blocks to represent three-digit numbers
Can use base ten representations to add three-digit numbers without regrouping
Can use the standard algorithm to add two-digit numbers without regrouping

MATERIALS
base ten blocks (9 hundreds, 9 tens, and 9 ones per student pair)
3 paper bags (per student pair)
BLM Using Place Value to Add (pp. M-97–98)
BLM Addition Grids (p. M-102)
1 cm grid paper or BLM 1 cm Grid Paper (p. U-1)

ACTIVITY
Students play Three-Digit Addition again. (see Activity 1 in Lesson NBT2-31) This time, give each pair of students three paper bags each containing a different type of block (nine blocks per bag), and BLM Using Place Value to Add (1). Player 1 removes a selection of blocks from each bag and draws them in order from hundreds to ones, and then writes the number in the top row of an addition grid on the BLM. Player 2 repeats the process to make the second addend. Player 1 finds the total and records it. Players return all the blocks to the correct bags, switch roles, and play again.

Adding three-digit numbers using the standard algorithm without regrouping. Have a volunteer pair draw or affix an example from the activity above on the board (see example below). ASK: How did you find the hundreds digit? (by counting the hundreds blocks) What addition did you do when you counted the hundreds blocks? (3 + 5) Pointing to the vertical addition, ASK: Where do you see that addition? (in the hundreds column) Repeat with tens and ones. SAY: Like two-digit numbers, we can add three-digit numbers by adding the digits—ones and ones, tens and tens, hundreds and hundreds. Do the addition and record as shown on the next page.
Write on the board:

\[
\begin{align*}
324 & \quad + \quad 532 \\
\hline
856 & \\
\end{align*}
\]

Pointing to a pair of digits at a time, ask: What is \(2 + 6\)? (8) What is \(4 + 3\)? (7) What is \(5 + 2\)? (7) Write each answer as shown below:

\[
\begin{align*}
542 & \quad + \quad 236 \\
\hline
778 & \\
\end{align*}
\]

Repeat with \(264 + 315\). Record the answer as shown below:

\[
\begin{align*}
264 & \quad + \quad 315 \\
\hline
579 & \\
\end{align*}
\]

Cut \textbf{BLM Using Place Value to Add (2)} into four strips and distribute one strip to each student to complete independently. (1. \(674\), 2. \(868\), 3. \(789\), 4. \(964\))

**Setting up and adding three-digit numbers using the standard algorithm.** Write on the board:

\[
\begin{align*}
275 & \quad + \quad 103 \\
\end{align*}
\]

Say: This addition is harder to add in this way. It is important to know how to set up an addition. Draw an addition grid on the board as shown below:

\[
\begin{align*}
\begin{array}{ccc}
275 & + & 103 \\
\end{array}
\end{align*}
\]

Say: This is an addition grid. When we write numbers into the grid, the ones digits are always on the right. Write “O” above the ones column. Say: Then come the tens, then the hundreds. Write “T” and “H” as shown below:

\[
\begin{align*}
\begin{array}{ccc}
275 & + & 103 \\
\end{array}
\end{align*}
\]

Say: We write the first addend in the top row, one digit in each box. Make sure to put each digit in the correct column. Write the first addend in the grid. Say: We write the second addend in the next row, one digit in each box. Ask: What do we do with the zero in \(103\)? (write it in the middle box)
SAY: We do not skip zeros. We need them to make sure that the digits are all in the correct place. Write the second addend. Starting with the ones, lead students through the addition. The final picture should look like this:

\[
\begin{array}{c}
\text{H} \\
275 \\
\text{T} \\
+ \\
103 \\
\text{O} \\
\hline \\
378 \\
\end{array}
\]

Provide students with BLM Addition Grids for the following exercise. (Students will need only four grids each, so you can cut each page in half.)

**Exercises:** Use a grid to write the addition. Then add.

a) \(428 + 361\) \quad b) \(506 + 342\) \quad c) \(790 + 103\) \quad **Bonus:** \(653 + 32\)

**Answers:** a) 789, b) 848, c) 893, Bonus: 685

SAY: You can use grid paper instead of an addition grid. Distribute 1 cm grid paper or BLM 1 cm Grid Paper. Write on the board:

\[
\begin{array}{c}
229 \\
+ \\
350 \\
\hline \\
579 \\
\end{array}
\]

SAY: Write the first addend near the top of the grid. Write one number per square. Have the class work along with you as shown below:

\[
\begin{array}{c}
229 \\
+ \\
350 \\
\hline \\
579 \\
\end{array}
\]

SAY: We write the second addend in the next row. Always make sure that the ones line up. We can write the ones first. Write “350” in the grid. SAY: We draw a dark line under the second addend. And we write the plus sign beside the addition. The grid should look like this:

\[
\begin{array}{c}
229 \\
+ \\
350 \\
\hline \\
579 \\
\end{array}
\]

Leave the previous addition on the board, and repeat with 546 + 32. Label the columns as shown below to emphasize that the ones need to line up:

\[
\begin{array}{c}
\text{H} \\
546 \\
\text{T} \\
+ \\
32 \\
\text{O} \\
\hline \\
578 \\
\end{array}
\]
Provide students with 1 cm grid paper or BLM 1 cm Grid Paper for the following exercises.

**Exercises:** Write the addition on grid paper.

a) 625 + 154  
b) 703 + 221  
c) 851 + 36  
d) 47 + 342

**Answers**

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>6</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>b)</td>
<td>7</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>c)</td>
<td>8</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>d)</td>
<td>4</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

SAY: Let’s answer the first one on the board, 229 + 350. We can write the answer below the dark line or skip a row if we need to. Keep the digits lined up in columns (indicate vertically). Have students do the addition on their grid. Have a volunteer write the answer on the board. (579) Repeat for 546 + 32. (578)

Have volunteers write the answers to the exercises on the board.

**Exercises:** Finish the addition that you wrote on grid paper.

a) 625 + 154  
b) 703 + 221  
c) 851 + 36  
d) 47 + 342

**Answers:** a) 779, b) 924, c) 887, d) 389

**Extensions**

1. Write the addition on grid paper. Add.

   a) 257 + 321 + 410  
b) 305 + 263 + 11  
c) 408 + 51 + 230

   **Answers:** a) 988, b) 579, c) 689

2. You can add four-digit numbers on grid paper. To find 1352 + 2437, use four columns to write the numbers and then add. Example:

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>+</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

   Write the addition on grid paper. Add.

   a) 1256 + 5323  
b) 4567 + 4321  
c) 2436 + 5001

   **Answers:** a) 6579, b) 8888, c) 7437
3. Find the missing numbers.

a) \[
\begin{array}{c}
3 \underline{} 6 \\
+ \underline{} 4 \underline{}
\end{array}
\]
\[
7 \underline{} 6 \underline{} 9
\]

b) \[
\begin{array}{c}
\underline{} 5 \underline{} \\
+ 3 \underline{} 2 \underline{} 4
\end{array}
\]
\[
4 \underline{} 7 \underline{} 8
\]

c) \[
\begin{array}{c}
\underline{} \underline{} \underline{} \\
+ 4 \underline{} 5 \underline{} 6
\end{array}
\]
\[
7 \underline{} 7 \underline{} 7
\]

d) \[
\begin{array}{c}
\underline{} \underline{} \underline{} \\
+ \underline{} 4 \underline{}
\end{array}
\]
\[
6 \underline{} 6 \underline{} 9
\]

Answers
a) 326, b) 154, c) 321, d) 123
\[
\begin{array}{c}
443 \underline{} \\
+ 324 \underline{}
\end{array}
\]
\[
\underline{} 769 \underline{} 478
\]
\[
\begin{array}{c}
456 \underline{} \\
+ 546 \underline{}
\end{array}
\]
\[
\underline{} 777 \underline{} 669
\]

4. a) Line up hundreds, tens, and ones blocks in two rows to show that \(112 < 114\).

b) Change those rows of blocks just enough to show that \(122 < 124\).

c) Change those rows of blocks just enough to show that \(132 < 134\).

d) Change those rows of blocks just enough to show that \(142 < 144\).

e) In pairs, discuss: What are you doing the same each time? What else stays the same?

f) Randi says that \(163 < 165\) because \(3 < 5\). Do you agree with Randi?

g) In pairs, explain your answers to part f). Do you agree with each other? Discuss why or why not.

Selected sample answers: e) we added one tens block to each row and the longer row stayed longer; f) yes, because you can add 160 to each number and the row that was longer at the beginning will still be longer
Goals

Students will use base ten representations to add three-digit numbers (within 1000) with regrouping. Regrouping may be required for ones or tens but not hundreds.

PRIOR KNOWLEDGE REQUIRED

Can add two-digit numbers with regrouping
Can use base ten representations to add three-digit numbers without regrouping

MATERIALS

paper base ten blocks (optional)
1 cm grid paper or BLM 1 cm Grid Paper (p. U-1)
BLM Adding Large Numbers (pp. M-103–105, see Extensions)

Using blocks to add three-digit numbers with regrouping of tens only.

SAY: Today we will add three-digit numbers with regrouping. Write on the board:

\[
\begin{array}{c}
362 \\
+ 274 \\
\end{array}
\]

Have volunteers draw or affix blocks beside each number. Make sure that the representations are spaced apart (you might draw vertical lines to divide block types), as shown below:

\[
\begin{array}{c}
362 \\
+ 274 \\
\end{array}
\]

Start with the ones. ASK: How many ones do we have in total? (6) Write “6” in the total. ASK: How many tens in total? (13) SAY: We have 13 tens. ASK: What do we need to do? (regroup/carry a ten/carry a one) Circle 10 tens. SAY: 10 tens make 1 hundred. We write “1” above the hundreds column. This shows that we regrouped 10 tens to make 1 hundred. Draw an arrow from the group of tens to the hundreds column and write “1.” ASK: How many tens do we have now? (3) Write “3” in the total as shown on the next page.
1362
+ 274
636

Have students complete Questions 1–3 on AP Book 2.2 p. 40.

Using blocks to add three-digit numbers with regrouping of tens and ones. SAY: Sometimes we need to regroup tens and ones. Write 167 + 134 in vertical format on the board and draw or affix blocks. ASK: How many ones altogether? (11) SAY: We write “1” and regroup a ten. Now when we add the tens, we have to remember the extra ten. ASK: How many tens do we have? (10) SAY: We write “0” and carry the 1. ASK: How many hundreds are there? (3) The final picture should look like this:

Have students do Question 4 on AP Book 2.2 p. 40.
SAY: Let’s do another example without using the big arrows. Write 246 + 392 in vertical format on the board and have volunteers draw or affix blocks. Have a volunteer add the ones and write “8” in the total. Have a second volunteer count the tens and circle ten of them. ASK: How many tens are there? (13) SAY: Instead of drawing the big arrow, we will write “1” in the hundreds column to remind us that we regrouped. Have the volunteer write “1” in the addition and “3” in the total. Ask a different volunteer to count the hundreds and write the answer. (6) SAY: When we count hundreds using the blocks, we have to remember to count the group that we circled. If we use the addition, we have to add three numbers: 1 plus 2 plus 3 is 6. The final picture should look like this:

```
  1
246
+ 392
  638
```

For the following exercise, encourage students to use 1 cm grid paper or BLM 1 cm Grid Paper to record the addition.

**Exercises:** Draw blocks to show the addition. Show the regrouping. Then add.

a) 352 + 173
   525

b) 268 + 334
   602

**Answers**

a) 352
   + 173
   525

b) 268
   + 334
   602

For the following exercise, encourage students to use 1 cm grid paper or BLM 1 cm Grid Paper to record the addition.
Extensions

1. Complete BLM Adding Large Numbers.

**Answers**

2. 1100, 3. 1300, 4. 1400
6. 1249
7. 1176

8. Bonus: 1073

10. 5878
11. 4557
12. Bonus: 5517

(MP4, MP5)  

2. At a fair, Tina is deciding whether to go to the roller coaster or the bumper cars. She wants to join the line with the fewest people. She counts 17 adults and 28 children in the line for the roller coaster. She counts 14 adults and 36 children in the line for the bumper cars. Which line should she choose? Use any tool you think will help.

**Sample solution:** I used paper and pencil:

<table>
<thead>
<tr>
<th>Roller coaster</th>
<th>Bumper cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 tens and 5 ones is 45</td>
<td>5 tens and 0 ones is 50</td>
</tr>
</tbody>
</table>

45 < 50, so Tina should line up for the roller coaster.
Goals
When adding a one-digit or two-digit number to a three-digit number requires regrouping hundreds, students will add to the nearest hundred and then add the rest (for example, evaluate 397 + 8 as 400 + 5 = 405).

PRIOR KNOWLEDGE REQUIRED
Knows sums to 10
Can decompose numbers within 10

Review pairs that add to 10. Call out one-digit numbers and have students signal the number that adds to 10. For example, if you say 6, students should signal 4. Next, call out two-digit numbers and ask students to signal the number that adds to the nearest multiple of 10. For example, if you say 56, they should signal 4.

Review adding one-digit numbers to two-digit numbers by making tens. Write on the board:

\[86 + 7\]

ASK: What is the next multiple of 10 after 86? (90) What do we add to 86 to get 90? (4) How much do we have left to add? (3) So what is 86 + 7? (93).

The final picture should look like this:

\[
\begin{align*}
86 &+ 7 \\
&= 86 + 4 + 3 \\
&= 90 + 3 \\
&= 93
\end{align*}
\]

SAY: To make this addition easier, we broke the 7 into 4 + 3. We chose 4 + 3 because we know that 86 + 4 is 90, or 6 + 4 is 10.

Exercises: Add to make a multiple of 10. Then add the rest.

a) 57 + 8  
   b) 24 + 9  
   c) 85 + 6

Answers: a) 57 + 3 + 5 = 60 + 5 = 65, b) 24 + 6 + 3 = 30 + 3 = 33, c) 85 + 5 + 1 = 90 + 1 = 91

Adding to the nearest hundred. Write on the board:

\[
\begin{align*}
96 &+ \_ = 100 \\
92 &+ \_ = 100 \\
97 &+ \_ = 100 \\
95 &+ \_ = 100
\end{align*}
\]

SAY: Let’s fill in the blanks. We can count on from 96 to get 100. Count on as a class to get 4. Write the answer in the first blank. SAY: We know that 6 + 4 is 10. So 96 + 4 is 100. ASK: 2 plus what is 10? (8) So 92 plus what is 100? (8) Check by counting on. Repeat for the remaining questions.
Record the answers as shown below:

96 + 4 = 100  92 + 8 = 100  97 + 3 = 100  95 + 4 = 100

Write on the board:

196 + __ = 200  392 + __ = 400  591 + __ = 600  799 + __ = 800

SAY: 96 + 4 is 100. ASK: What do you think I can add to 196 to get 200? (4)
Check by counting on as a class. Write “4” in the first blank. Repeat for all
questions. Record the answers as shown below:

196 + __ = 200  392 + __ = 400  591 + __ = 600  799 + __ = 800

Exercises: Write the missing addend.

a) 794 + __ = 800  b) 298 + __ = 300  c) 495 + __ = 500

Answers: a) 6, b) 2, c) 5

Decomposing addends to add to the nearest hundred. SAY: This gives
us an easy way to add one-digit numbers to a number that is almost a
multiple of 100. A multiple of 100 is any number that we can make using
only hundreds blocks. Write on the board:

497 + 8

ASK: What is the next multiple of 100 after 497? (500) What do we add
to 497 to get 500? (3) SAY: We can take apart the 8. Fill in the picture as
shown below:

497 + 8

= 497 + 3 + __

ASK: 8 is 3 plus what? (5) Write “5.” ASK: What is 497 + 3? (500) Write
“= 500” on the next line and SAY: We still need to add the extra 5. Write
“+ 5” as shown below:

497 + 8

= 497 + 3 + 5

= 500 + 5

Repeat with 699 + 5. The final picture is shown in the margin.

Exercises: Take apart the addend to make the next multiple of 100. Write
the new addition.

a) 696 + 6  b) 398 + 4  c) 595 + 9

Answers: a) 696 + 4 + 1 = 700 + 1, b) 398 + 2 + 2 = 400 + 2,
c) 595 + 5 + 4 = 600 + 4
Showing why simpler addition works. Write on the board:

\[
\begin{align*}
398 + 5 \\
400 + 4 & \quad 400 + 3 & \quad 300 + 3
\end{align*}
\]

Pointing to the second row, ASK: Which addition gives the same answer as \(398 + 5\)? \((400 + 3)\) Why is it the same? \((398 + 2)\) is 400 so we have 3 left to add) Ask a volunteer to write the steps in the addition to show they are the same, as shown below:

\[
\begin{align*}
398 + 5 \\
= 398 + 2 + 3 \\
= 400 + 3 \\
= 403
\end{align*}
\]

**Exercises:** Write the addition that gives the same answer.

a) Is 596 + 8 equal to 500 + 4, 600 + 8, or 600 + 4?

b) Is 793 + 8 equal to 800 + 1, 900 + 7, or 800 + 7?

c) Is 295 + 9 equal to 300 + 5, 300 + 6, or 300 + 4?

**Answers:** a) 600 + 4, b) 800 + 1, c) 300 + 4

Writing simpler addition. Pointing to any example on the board, ASK: Which is easier to add, 897 + 9 or 900 + 6? (accept any answers) SAY: Most people find 900 + 6 easier. Let’s practice doing it this way. Write on the board:

\[
695 + 7
\]

ASK: What’s the first step? (take apart 7) What addition do we write for 7? \((5 + 2)\) Write “= 695 + 5 + 2” on the next line. ASK: What do we do next? (add 695 + 5) What is 695 + 5? \((700)\) Write “= 700” on the next line. SAY: We still need to write plus 2. Write “+ 2.” ASK: What is the total? \((702)\) Write the total as shown below:

\[
\begin{align*}
695 + 7 \\
&= 695 + 5 + 2 \\
&= 700 + 2 \\
&= 702
\end{align*}
\]

Repeat with 498 + 8 using less prompting. The final picture should look like this:

\[
\begin{align*}
498 + 8 \\
&= 498 + 2 + 6 \\
&= 500 + 6 \\
&= 506
\end{align*}
\]
Exercises: Add to make the next multiple of 100. Then add.

a) 796 + 9  
b) 593 + 9  
c) 297 + 6

Answers

a) 796 + 4 + 5 = 800 + 5 = 805  
b) 593 + 7 + 2 = 600 + 2 = 602  
c) 297 + 3 + 3 = 300 + 3 = 303

Adding two-digit numbers to near-multiples of 100. SAY: This method works for adding two-digit numbers, too. Write on the board:

498 + 57

ASK: What do we add to 498 to get 500? (2) Write “= 498 + 2” on the next line. ASK: What is 57 – 2? (55) Write “+ 55” as shown below:

\[
\begin{align*}
498 &+ 57 \\
\quad &\downarrow \\
\quad &= 498 + 2 + 55 \\
\end{align*}
\]

ASK: What is 498 + 2? (500) What is 500 + 55? (555) The final picture should look like this:

\[
\begin{align*}
498 &+ 57 \\
\quad &\downarrow \\
\quad &= 498 + 2 + 55 \\
\quad &= 500 + 55 \\
\quad &= 555 \\
\end{align*}
\]

Repeat with 397 + 64, skipping the first step. The final picture should look like this:

\[
\begin{align*}
397 &+ 64 \\
\quad &= 400 + 61 \\
\quad &= 461 \\
\end{align*}
\]

Exercises: Add to make the next multiple of 100. Then add.

a) 693 + 78  
b) 594 + 29  
c) 299 + 81  
Bonus: 792 + 43

Answers

a) 700 + 71 = 771  
b) 600 + 23 = 623  
c) 300 + 80 = 380  
Bonus: 800 + 35 = 835
Extensions

NOTE: Extensions 1–6 must be done in order.

1. Add.
   
a) $2 + 2$  
b) $3 + 3$  
c) $4 + 4$  
d) $5 + 5$  
e) $6 + 6$

   **Answers:** a) 4, b) 6, c) 8, d) 10, e) 12

2. Add.
   
a) $23 + 23$  
b) $42 + 42$  
c) $53 + 53$  
d) $64 + 64$  

   **Bonus:** $35 + 35$

   **Answers:** a) 46, b) 84, c) 106, d) 128, Bonus: 70

3. Use your answers to Extension 2 to add.
   
a) $23 + 24$  
b) $42 + 43$  
c) $54 + 53$  
d) $64 + 65$  

   **Bonus:** $36 + 35$

   **Answers:** a) $23 + 24 = 23 + 23 + 1 = 46 + 1 = 47$, b) 85, c) 107, d) 129, Bonus: 71

4. Adding the same number twice is called doubling. Use doubling to add.
   
a) $24 + 25$  
b) $44 + 45$  
c) $53 + 52$  
d) $60 + 61$  

   **Bonus:** $65 + 66$

   **Answers:** a) 49, b) 89, c) 105, c) 121, Bonus: 131

5. Add.
   
a) $123 + 124$  
b) $241 + 242$  
c) $312 + 313$

   **Answers:** a) 247, b) 483, c) 625

(MP6) 6. Explain to a partner how you can use doubling to add $43 + 44$.

   **Answer:** $44 = 43 + 1$, so I know that $43 + 44 = 43 + 43 + 1$. To add $43 + 43$, I double each digit: $43 + 43 = 86$. So $43 + 44 = 86 + 1 = 87$. 
Using Place Value to Add (I)

+ 
  
+ 
  
+ 
  
+ 
  

Blackline Master — Number and Operations in Base Ten — Teacher Resource for Grade 2
Using Place Value to Add (2)

1. 4 2 3
   + 2 5 1
   \[\text{ }\]

2. 7 3 5
   + 1 3 3
   \[\text{ }\]

3. 2 6 8
   + 5 2 1
   \[\text{ }\]

4. 1 4 4
   + 8 2 0
   \[\text{ }\]
Place Value with Thousands (I)

☐ Fill in the missing digit.

1. 

☐ Write the number that the blocks show.

5. 

3000

6. 

7. 

8. 

9. 

NAME ___________________________ DATE ___________________________
Place Value with Thousands (2)

☐ Fill in the base ten chart.

10. 

![Base ten chart with blocks](image)

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>

II. 

![Base ten chart with blocks](image)

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. 

![Base ten chart with blocks](image)

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Place Value with Thousands (3)

☐ Fill in the missing numbers.

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>1534</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td>9342</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>5632</td>
</tr>
</tbody>
</table>

☐ Fill in the missing numbers.

<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>1534</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>6</td>
<td>8</td>
<td>9342</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>4</td>
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<td>5632</td>
</tr>
</tbody>
</table>
Addition Grids

[Grids showing addition problems]

M-102  Blackline Master — Number and Operations in Base Ten — Teacher Resource for Grade 2
Adding Large Numbers (I)

☐ Circle 10 hundreds blocks.
☐ Use the picture to add.

1.  
   500
   + 700
   \[1200\]

2.  
   600
   + 500
   \[1100\]

3.  
   700
   + 600
   \[1300\]

4.  
   700
   + 700
   \[1400\]
Adding Large Numbers (2)

☐ Show regrouping the hundreds.
☐ Use the picture to add.

5.

\[
\begin{array}{c}
\text{I} \\
5 4 3 \\
+ \\
7 2 5 \\
\hline
1 2 6 8
\end{array}
\]

6.

\[
\begin{array}{c}
\text{I} \\
6 3 4 \\
+ \\
6 1 5 \\
\hline
\text{(blocks shown)}
\end{array}
\]

☐ Draw blocks to show the addition. Use the picture to add.

7.

\[
\begin{array}{c}
8 1 2 \\
+ \\
3 6 4 \\
\hline
\text{(blocks shown)}
\end{array}
\]

8. BONUS

\[
\begin{array}{c}
5 2 7 \\
+ \\
5 4 6 \\
\hline
\text{(blocks shown)}
\end{array}
\]
Adding Large Numbers (3)

1. Use the picture to add.

\[
\begin{array}{c}
\phantom{1}2 \phantom{5}4 \phantom{9}3 \phantom{7}5 \\
\phantom{1}3 \phantom{2}1 \phantom{5}
\end{array}
\]

\[
\begin{array}{c}
1 \phantom{2}5
\end{array}
\]

\[
\begin{array}{c}
1 \phantom{2}5
\end{array}
\]

9.

\[
\begin{array}{c}
3 \phantom{4}2 \phantom{6}3 \phantom{1}4 \phantom{5}
\end{array}
\]

\[
\begin{array}{c}
2 \phantom{4}5 \phantom{2}
\end{array}
\]

10.

\[
\begin{array}{c}
1 \phantom{3}4 \phantom{3}1 \phantom{4}
\end{array}
\]

\[
\begin{array}{c}
3 \phantom{2}
\end{array}
\]

11.

\[
\begin{array}{c}
2 \phantom{1}7 \phantom{5}
\end{array}
\]

\[
\begin{array}{c}
3 \phantom{2}4 \phantom{2}
\end{array}
\]

12. BONUS

\[
\begin{array}{c}
2 \phantom{1}1 \phantom{7}5
\end{array}
\]

\[
\begin{array}{c}
3 \phantom{3}4 \phantom{2}
\end{array}
\]
1 cm Grid Paper