Chapter 3: Addition and Subtraction

1. Calculate.
   a) \(23 + 45\)          e) \(78 - 9\)
   b) \(39 + 223\)         f) \(65 - 27\)
   c) \(367 + 33\)         g) \(741 - 36\)
   d) \(459 + 259\)        h) \(543 - 372\)

2. Ned has 16 pencil crayons. He needs 28 to fill his box. How many more pencil crayons does he need?

3. Complete each number sentence.
   a) \(8 + \underline{\phantom{0}} = 15\)          d) \(\underline{\phantom{0}} + 12 = 80\)
   b) \(29 + 16 = \underline{\phantom{0}}\)         e) \(99 + \underline{\phantom{0}} = 200\)
   c) \(17 + \underline{\phantom{0}} = 29\)         f) \(77 - \underline{\phantom{0}} = 54\)
4. The school long jump record is 485 cm. Eric jumped 369 cm. How much shorter was Eric's jump than the school record?

5. What is the missing number? Circle it.

\[
\begin{array}{c}
4 \square 8 \\
+ 179 \\
\hline
657
\end{array}
\]

   a) \(45 - 39 = \) 

   b) \(98 - 97 = \) 

   c) \(82 - 62 = \) 

   d) \(81 - 73 = \) 

7. Estimate, then calculate.
   a) \(38 + 92\) is about 
   c) \(24 + 69\) is about 

   b) \(92 - 38\) is about 
   d) \(69 - 24\) is about
Scaffolding for Getting Started

North School has only 25 students.

<table>
<thead>
<tr>
<th>Elementary School Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>North School</td>
</tr>
<tr>
<td>Lakeview School</td>
</tr>
<tr>
<td>South School</td>
</tr>
<tr>
<td>Number of students</td>
</tr>
</tbody>
</table>

? About how many students go to the 3 schools?

A. About how many students go to South School? about _____
   Explain how you estimated. __________________________________________

B. About how many students go to Lakeview School? about _____
   Explain how you estimated. __________________________________________

C. Estimate the total number of students at the 3 schools.
   Use your answers from Steps A and B.
   North School + South School + Lakeview School
   _________ + _________ + _________
   The total for the 3 schools is about _______ students.

D. Suppose North School had 50 students.
   How would your answers to Steps A to C change?
   North School has _________ students.
   South School has about _________ students.
   Lakeview School has about _________ students.
   _________ + _________ + _________
   The total for the 3 schools is about _______ students.
Scaffolding for Lesson 4, Questions 3 & 6  Page 1

3. Three schools recycled telephone books to raise money.
   a) How many telephone books did they recycle altogether? Estimate first. Explain your strategy.

Calculate.

\[
\begin{array}{ccc}
1 & 2 & 5 \\
2 & 6 & 8 \\
3 & 1 & 0 \\
\end{array}
\]

b) Is your answer reasonable? How do you know?
   Hint: Compare your answer to your estimate.
3.1 Solving Problems by Estimating

Student Book pages 68–69

**GOAL**
Estimate sums of 2-digit numbers to solve problems.

**Problem**
Lang wrote a story.
His story has 3 pages.
- Page 1 has 21 words.
- Page 2 has 43 words.
- Page 3 has 45 words.

**Did Lang write more than 100 words?**

Use base ten blocks to show the number of words on each page.

<table>
<thead>
<tr>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45</td>
</tr>
</tbody>
</table>

**Step 1:** Count the tens.
How many tens are there? ______
3.1 Solving Problems by Estimating Page 2

Step 2: Does Lang need to count the ones to know if he has more than 100 words? _______
How do you know?

Did Lang write more than 100 words? _______

Reflecting
Jodi’s story is 2 pages long.
Page 1 has 42 words.
Page 2 has 65 words.

How can Jodi find out if she wrote more than 100 words?
### 3.1 Solving Problems by Estimating

**Page 1**

**Student Book pages 68–69**

**GOAL**

Estimate sums of 3-digit numbers to solve problems.

**Checking**

1. Maya wrote a story.
   - The first page had 275 words.
   - The second page had 250 words.
   - Does her story have more than 500 words?

   **Step 1:** Circle the kind of answer you need:  
   - exact
   - estimate
   
   How do you know?

   Did Maya write more than 500 words? ______
   
   How do you know?

**You will need**

- base ten blocks
- a place value chart

---

<table>
<thead>
<tr>
<th>Number</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>275</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Practising

4. Your school has $800 to spend on a computer and a printer.
The computer costs $575.
The printer costs $275.
Does your school have enough money?

Step 1: Circle the kind of answer you need: exact estimate

Step 2: Estimate 575 + 275.
Model the numbers using base ten blocks.
Draw your models.

<table>
<thead>
<tr>
<th>Number</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>575</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>275</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Does your school have enough money? ________
How do you know?

______________________________________________
<table>
<thead>
<tr>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>3</td>
<td>5</td>
<td>x_x_x x_x_x</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>0</td>
<td>9</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>
Solving Problems by Estimating

**GOAL**

Estimate sums of 3-digit numbers to solve problems.

1. Use mental math to calculate the first sum. Use that sum to estimate the next sum.
   a) \(300 + 100 = \boxed{400}\), so \(298 + 105 = \text{about} \boxed{400}\)
   b) \(200 + 300 = \boxed{\text{_____}}\), so \(202 + 298 = \text{about} \boxed{\text{_____}}\)
   c) \(100 + 50 = \boxed{\text{_____}}\), so \(96 + 53 = \text{about} \boxed{\text{_____}}\)
   d) \(150 + 300 = \boxed{\text{_____}}\), so \(161 + 288 = \text{about} \boxed{\text{_____}}\)

2. Estimate each sum. Show your work.
   a) \(\boxed{249} + \boxed{199} = \text{is about} \boxed{200 + 200 = 400}\)
   b) \(\boxed{96} + \boxed{402} = \text{is about} \boxed{100 + 400 = \text{_____}}\)
   c) \(353 + 47 = \text{is about} \boxed{\text{_____}}\)
   d) \(208 + 297 = \text{is about} \boxed{\text{_____}}\)

3. Cole’s father saved \(\boxed{\text{\$600}}\) for furniture. He wants to buy a rug for \(\$277\) and a lamp for \(\$303\). Does he have enough money? Show your work.
   \[300 + 300 = 600\]
   \[277 + 303 = \text{\$580}\]

4. Kate made 200 brownies. She needs 145 brownies for a bake sale, and she needs 48 brownies for her class at school. Did she make enough brownies?
3.2 Estimating Sums Page 2

Estimate using a number line

Step 1: Find 210 on the number line.
200 is the closer hundred.

Step 2: 310 is close to 300.
Start at 200 and jump 300 m.

Aneela will run about _________ m.

Reflecting

How would you estimate 280 + 190?

What other ways can you use to estimate sums?
3.2 Estimating Sums Page 1

Student Book pages 70–72

**GOAL**

Estimate sums in different ways.

**Problem**

Aneela plans to run the route shown at the right.

About how far will Aneela run?

Use two ways to estimate.

**Estimate by adding the hundreds**

Write the numbers in the place value chart.
The first one is done for you.

<table>
<thead>
<tr>
<th>Number</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>210</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>320</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Circle) the hundreds.

Add the circled hundreds.

_______ + _______ = _______

Aneela will run about _________ m.
### Practising

2. Estimate.
   a) $567 + 513$
   Add the closer hundreds using the number line.
   Record all your jumps.
   
   ![Number line diagram]

   $567 + 513$ is about ______.

4. The chart shows the number of people who went to a 3-day folk festival.
   Estimate the total attendance.

<table>
<thead>
<tr>
<th>Day</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thursday</td>
<td>899</td>
</tr>
<tr>
<td>Friday</td>
<td>1799</td>
</tr>
<tr>
<td>Saturday</td>
<td>2375</td>
</tr>
</tbody>
</table>

   Circle the closer hundreds.

   | 800  | 899  | 900  |
   | 1700 | 1799 | 1800 |
   | 2300 | 2375 | 2400 |

   Add the circled numbers.

   ______ + ______ + ______ = ______

   About how many people attended the festival? ______
GOAL
Estimate sums in different ways.

Checking

1. Kate plans to run the route shown at the right.

Estimate how far she will run by adding the thousands.

Write the numbers in the place value chart.
The first one is done for you.

<table>
<thead>
<tr>
<th>Number</th>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1290</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>450</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Circle the thousands.
Add the circled thousands.

_______ + _______ = _______

Kate will run about _________ m.

Explain one other way you could estimate how far Kate will run.
Estimating Sums

**GOAL**

Estimate sums in different ways.

1. Estimate each sum. Show your work.
   a) \(210 + 499\) is about 709
   b) \(589 + 308\) is about 900
   c) \(1072 + 994\) is about 2066
   d) \(3987 + 2001\) is about 6000

2. Estimate each sum. Show your work.
   a) \(510 + 203 + 696\) is about 1409
   b) \(1080 + 5098 + 2900\) is about 9078
   c) \(929 + 1100 + 997\) is about 2926
   d) \(2033 + 1002 + 1977\) is about 5012
   e) \(3172 + 3030 + 2960\) is about 9162
   f) \(1072 + 2908 + 3978\) is about 7958

3. Jade wants to collect 8000 pennies, or $80. She has a jar with 1048 pennies, a jar with 2083 pennies, and a jar with 3992 pennies. Does Jade have enough pennies? How do you know?
3.3 Exploring Addition and Subtraction

Student Book page 73

GOAL
Use your own strategies to add and subtract numbers to solve a problem.

Problem
Jade made jingle dresses for a powwow with her mother and sister.
They folded 100 pieces of metal into cones.
They sewed the cones onto 3 dresses.

How many cones were sewn on the mother's jingle dress?

Use base ten blocks.

Step 1: Model 100 using 9 tens blocks and 10 ones blocks. Draw your model.

Step 2: Subtract the number of cones on the sister's jingle dress.
To subtract 16, take away 1 ten and 6 ones. Draw your model.

Step 3: Subtract the number of cones on Jade's jingle dress.
To subtract 32, take away 3 tens and 2 ones. Draw your model.

Step 4: Count the blocks that are left.
There are _______ cones on the mother's jingle dress.
3.3 Exploring Addition and Subtraction

GOAL

Use your own strategies to add and subtract numbers to solve a problem.

Jade made jingle dresses for a powwow with her mother and sister. They folded 1000 metal lids into cones. They sewed the cones onto 3 dresses.

How can you calculate the number of cones on the mother’s jingle dress?

Use a number line.

0  100  200  300  400  500  600  700  800  900  1000

Step 1: Start at 1000 because there are 1000 cones in total. Subtract the number of cones on the sister’s dress.
Rename 199 as 200 – 1.
Subtract 200 now and add the 1 later.

Step 2: Subtract the number of cones on Jade’s jingle dress.
Rename 299 as 300 – 1.
Subtract 300 now and add the 1 later.

Step 3: Add the 2 cones.
How many cones are on the mother’s jingle dress? ________

What other strategies could you use to solve the problem?
Addition: Regrouping

Addition means "putting together" or adding two or more numbers to find the sum. For example, $3 + 5 = 8$. To regroup is to use ten ones to form one ten, ten tens to form one 100, and so on.

Directions: Add using regrouping.

Example:

Add the ones. Add the tens with regrouping.

\[
\begin{array}{cc}
88 & 88 \\
+21 & +21 \\
\hline
9 & 109
\end{array}
\]

\[
\begin{array}{cccc}
37 & 56 & 51 & 37 \\
+72 & +67 & +88 & +55 \\
\hline
70 & 68 & & \\
\end{array}
\]

\[
\begin{array}{ccc}
93 & 47 & 81 \\
+54 & +82 & +77 \\
\hline
36 & & \\
\end{array}
\]

92 + 13 = ____ 73 + 83 = ____ 54 + 61 = ____

The Blues scored 63 points. The Reds scored 44 points. How many points were scored in all? ____
**GOAL**

Use your own strategies to add and subtract numbers to solve a problem.

Start at the beginning of the maze. When you come to a sum, solve it. Follow the correct answer. Can you reach the end?
3.4 Adding from Left to Right Page 1
Student Book pages 74–76

GOAL
Solve addition problems by adding from left to right.

Problem
A forklift operator wants to lift 3 containers.
The forklift can safely lift up to 400 kg.

Can the forklift safely lift all 3 containers?

Use base ten blocks.

Step 1: Model each number with base ten blocks.
Draw your models.

<table>
<thead>
<tr>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>212</td>
</tr>
<tr>
<td></td>
<td>123</td>
<td></td>
</tr>
<tr>
<td></td>
<td>54</td>
<td></td>
</tr>
</tbody>
</table>
3.4 Adding from Left to Right Page 2

Step 2: Add the hundreds.

200 + ______ + ______ = ______

Step 3: Add the tens.

10 + ______ + ______ = ______

Step 4: Add the ones.

2 + ______ + ______ = ______

Step 5: Add the hundreds, tens, and ones.

_______ + _______ + _______ = _______

Can the forklift safely lift all 3 containers? ______
How do you know?

________________________________________

Reflecting

How could you have predicted whether the forklift could safely lift all 3 containers?

________________________________________

________________________________________

________________________________________

________________________________________

________________________________________
3.4 Adding from Left to Right Page 1

Student Book pages 74–76

GOAL
Solve addition problems by adding from left to right.

Checking

1. A forklift can lift 8000 kg safely.
   The operator needs to lift 3 containers.
   - Container 1 has a mass of 2455 kg.
   - Container 2 has a mass of 849 kg.
   - Container 3 has a mass of 4567 kg.
   Can the 3 containers be lifted safely?

Step 1: Write the masses in the place value chart.
This Step has been done for you.

<table>
<thead>
<tr>
<th>Mass</th>
<th>Thousands</th>
<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2455</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>849</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4567</td>
<td>4</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Step 2: Add from left to right. Write the totals in the table.
The thousands have been done for you.
3.4 Adding from Left to Right Page 2

a) Can the forklift lift all 3 containers? _____
How do you know?

b) Did you estimate to solve the problem or did you calculate an exact answer?

Explain.

Practising

6. Add from left to right.

a) \[
\begin{array}{cccc}
1 & 2 & 5 & 9 \\
+ & 6 & 1 & 8 \\
\end{array}
\]

b) \[
\begin{array}{cccc}
6 & 9 & 6 & 3 \\
+ & 2 & 3 & 6 & 4 \\
\end{array}
\]
3. Three schools recycled telephone books to raise money.
   
a) How many telephone books did they recycle altogether? Estimate first. Explain your strategy.

Calculate.

\[
\begin{array}{cccc}
1 & 2 & 5 & 9 \\
2 & 6 & 8 & 5 \\
+ & 3 & 1 & 0 \, \text{?} \\
\hline
\end{array}
\]

b) Is your answer reasonable? How do you know?
Hint: Compare your answer to your estimate.
6. Calculate. Show your work.
   Some of the steps are done for you.

a)
\[
\begin{array}{c}
1 & 2 & 5 & 9 \\
+ & 6 & 1 & 8 \\
\hline
1 & 0 & 0 & 0 \\
\hline
& & & \\
\hline
\end{array}
\]

b)
\[
\begin{array}{c}
6 & 9 & 6 & 3 \\
+ & 2 & 3 & 6 & 4 \\
\hline
8 & 0 & 0 & 0 \\
\hline
1 & 2 & 0 & 0 \\
\hline
\end{array}
\]

c)
\[
\begin{array}{c}
4 & 2 & 1 & 1 \\
+ & 3 & 4 & 5 \\
\hline
9 & 6 & 7 \\
\hline
4 & 0 & 0 & 0 \\
\hline
\end{array}
\]

d)
\[
\begin{array}{c}
1 & 5 & 6 & 7 \\
1 & 5 & 7 & 8 \\
+ & 2 & 5 & 6 & 7 \\
\hline
4 & 0 & 0 & 0 \\
\hline
\end{array}
\]
Adding from Left to Right

GOAL
Solve addition problems by adding from left to right.

1. Add from left to right. Show your work.

   a)  
   \[
   \begin{array}{c}
   \phantom{1}3 \phantom{1}1 \phantom{1}1 \\
   + \phantom{1}6 \phantom{1}4 \phantom{1}5
   \end{array}
   \]

   b)  
   \[
   \begin{array}{c}
   2 \phantom{4}1 \phantom{5}5 \\
   + \phantom{3}2 \phantom{2}2 \phantom{1}1
   \end{array}
   \]

   c)  
   \[
   \begin{array}{c}
   6 \phantom{2}2 \phantom{2}4 \\
   + \phantom{1}1 \phantom{7}6 \phantom{8}
   \end{array}
   \]

   d)  
   \[
   \begin{array}{c}
   5 \phantom{0}6 \phantom{7} \\
   + \phantom{3}6 \phantom{2}1 \phantom{1}
   \end{array}
   \]

   e)  
   \[
   \begin{array}{c}
   4 \phantom{1}1 \phantom{1}1 \\
   + \phantom{1}7 \phantom{0}3 \phantom{1}
   \end{array}
   \]

   f)  
   \[
   \begin{array}{c}
   1 \phantom{4}3 \phantom{1} \\
   + \phantom{2}5 \phantom{1}1 \phantom{1}
   \end{array}
   \]

At-Home Help
Follow these steps to add from left to right.

Step 1 Add the thousands.
Step 2 Add the hundreds.
Step 3 Add the tens.
Step 4 Add the ones.
Step 5 Add them all together to calculate the sum.

For example:

\[
\begin{array}{c}
1 \phantom{2}4 \phantom{6} \\
+ \phantom{2}9 \phantom{3}4
\end{array}
\]

\[
\begin{array}{c}
3 \phantom{0}0 \phantom{0}0 \\
1 \phantom{1}0 \phantom{0}0 \\
7 \phantom{0}0 \\
+ \phantom{1}0 \phantom{1}0
\end{array}
\]

\[
4 \phantom{1}8 \phantom{0}
\]
3.5 Adding From Right to Left Page 2

Step 3: Regroup the ones. Add a ten.

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

Step 4: Add the tens.

__ + __ + __ = __

Step 5: Regroup the tens. Add a hundred.

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

Step 6: Add the blocks.

__ + __ + __ = __

Aneela's school needs ______ points.

Reflecting
How do you know when to regroup when you are adding from right to left?

___

___

___

___

___

___

___
3.5 Adding From Right to Left Page 1
Student Book pages 78–80

GOAL
Solve addition problems by adding from right to left.

Problem
Aneela's school collects food labels to get points. They can trade the points for school equipment.

How many points does Aneela's school need for the whistle and baseball?

Use base ten blocks.

Step 1: Model the numbers with base ten blocks.

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

Step 2: Add the ones.

_____ + _____ = _____
3.5 Adding from Right to Left Page 1

You will need
- base ten blocks
- a place value chart

GOAL
Solve addition problems by adding from right to left.

Checking

1. A school wants to use points to get 3 books.
   This table shows how many points the school needs to get each book.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of points needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports book</td>
<td>1825</td>
</tr>
<tr>
<td>Astronomy book</td>
<td>1175</td>
</tr>
<tr>
<td>Dinosaur book</td>
<td>825</td>
</tr>
</tbody>
</table>

   How many points does the school need?

   Step 1: Model the points needed for each book using base ten blocks.
   Draw your models in the place value chart.

   Step 2: Add the ones.
   Do you need to regroup? ______

   Step 3: Add the tens.
   Do you need to regroup? ______
3.5 Adding from Right to Left  Page 2

Step 4: Add the hundreds.
Do you need to regroup? ______

Step 5: Add the thousands.
Do you need to regroup? ______

How many points does the school need? ______

Practising

2. An online discussion group has a goal of 7500 postings.
   The table shows how many postings it had.

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of postings</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>1535</td>
</tr>
<tr>
<td>February</td>
<td>2865</td>
</tr>
<tr>
<td>March</td>
<td>3145</td>
</tr>
</tbody>
</table>

Did the group reach its goal? ______

Add the numbers of postings from right to left.

Do you need to regroup? ______

Did the group reach its goal? ______
Scaffolding for Lesson 5, Question 3

3. Estimate each sum.
   a) 2987 + 145 is about ____________
   b) 3254 + 2162 is about ____________
   c) 2311 + 2499 is about ____________
   d) 2300 + 2253 + 1701 is about ____________

If your estimate is between 4000 and 6000, calculate the exact answer. Use the grid to help you line up the digits.
Adding from Right to Left

GOAL

Solve addition problems by adding from right to left.

1. Add from right to left. Show your work.
   
   a) \[ \begin{array}{c} 1 \ 2 \ 2 \ 5 \\ + \quad 4 \ 3 \ 1 \end{array} \]
   b) \[ \begin{array}{c} 1 \ 7 \ 6 \ 0 \\ + \quad 1 \ 2 \ 4 \ 8 \end{array} \]
   c) \[ \begin{array}{c} 4 \ 0 \ 7 \ 2 \\ + \quad 3 \ 7 \ 2 \ 4 \end{array} \]
   d) \[ \begin{array}{c} 8 \ 6 \ 4 \ 3 \\ + \quad 6 \ 4 \ 8 \end{array} \]

2. Jade’s mother saved $3966 this year. Next year, she plans to save $2992. Will she have enough money to buy a car that costs $7000?

3. In September, Joshua’s website had 227 visits. In October, it had 2143 visits. In November, it had 2324 visits. Has the number of visitors reached 5000?

At-Home Help

You can **regroup** by trading 10 smaller units for 1 larger unit, or 1 larger unit for 10 smaller units. Follow these steps to add from right to left.

**Step 1** Add the ones. If the answer is 10 or more, regroup.

**Step 2** Add the tens. If the answer is 100 or more, regroup.

**Step 3** Add the hundreds. If the answer is 1000 or more, regroup.

**Step 4** Add the thousands. For example:

\[
\begin{array}{c}
1 \ 1 \\
3 \ 7 \ 6 \ 2 \\
+ \ 1 \ 9 \ 4 \ 2 \\
\hline
5 \ 7 \ 0 \ 4 \\
\end{array}
\]
Multiples of 10, 100, and 1000

Count by 10. Write the multiples of 10 between 20 and 130.

30, 40, 50, 60, 70, 80, 90, 100, 110, 120

Complete.
1. Count by 100. Write the multiples of 100 between 600 and 1500.

700, 800, 900, 1000, 1100, 1200, 1300.

2. Count by 1000. Write the multiples of 1000 between 53 000 and 59 000.

54 000, 55 000, 56 000.

Use the number lines to complete the sentences.

3. 

\[ \begin{array}{c}
80 & 81 & 82 & 83 & 84 & 85 & 86 & 87 & 88 & 89 & 90 \\
\end{array} \]

The multiples of 10 on the number line are _____ and _____.
The multiple of 10 closer to 89 is _____.

4. 

\[ \begin{array}{c}
400 & 410 & 420 & 430 & 440 & 450 & 460 & 470 & 480 & 490 & 500 \\
\end{array} \]

The multiples of 100 on the number line are _____ and _____.
The multiple of 100 closer to 423 is _____.

5. 

\[ \begin{array}{c}
3000 & 3100 & 3200 & 3300 & 3400 & 3500 & 3600 & 3700 & 3800 & 3900 & 4000 \\
\end{array} \]

The multiples of 1000 on the number line are _____ and _____.
The multiple of 1000 closer to 3878 is _____.
Estimating Sums

Estimate the sum by rounding to the nearest 100.

943 + 588 = □
Round each number to the nearest 100.

943 rounds to □ 00

588 rounds to □ 00

Add the rounded numbers.

900
+ 600
□ 500

Estimate by rounding to the nearest 100.

1. 564
   +328
   □ 900

2. 600
   +489
   □ 00

3. 614
   +207
   □ □

4. 426
   +295
   □ □

5. 783
   +424
   □ □

6. 372
   +658
   □ □

7. 949
   +508
   □ □

8. 872
   +29
   □ □

9. 649
   +887
   □ □

10. 703
    +89
    □ □

11. 289
    +397
    □ □

12. 506
    +450
    □ □

13. 918
    +626
    □ □

14. 774
    +29
    □ □

15. 468
    +982
    □ □
Mid-Chapter Review—Frequently Asked Questions

Q: How can you decide whether to estimate or calculate to solve a problem?

A:

Q: How can you add 3-digit and 4-digit numbers?

A:
Addition and Subtraction

Do the addition. Follow the path of the sums greater than 7600 to help Janice find her toy.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3756 + 4283</td>
<td>2</td>
<td>6315 + 3497</td>
</tr>
<tr>
<td>3</td>
<td>1246 + 2391</td>
<td>4</td>
<td>3201 + 1468</td>
</tr>
<tr>
<td>5</td>
<td>4628 + 1919</td>
<td>6</td>
<td>5142 + 384</td>
</tr>
<tr>
<td>7</td>
<td>1985 + 4573</td>
<td>8</td>
<td>2086 + 3917</td>
</tr>
</tbody>
</table>

9503 + 827 = _____  10 2510 + 4695 = _____
11 4028 + 3145 = _____  12 1793 + 2118 = _____
13 6537 + 924 = _____  14 6872 + 2950 = _____
15 4315 + 387 = _____  16 7963 + 1048 = _____
17 3196 + 4422 = _____  18 8524 + 3191 = _____
19 3217 + 5278 = _____  20 6412 + 2412 = _____
21 7216 + 913 = _____  22 1361 + 2573 = _____
23 2086 + 3967 = _____  24 1496 + 5163 = _____

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8039</td>
<td>8761</td>
<td>8824</td>
<td>8129</td>
</tr>
<tr>
<td>9812</td>
<td>7905</td>
<td>8495</td>
<td>7620</td>
</tr>
<tr>
<td>10330</td>
<td>9822</td>
<td>11715</td>
<td>9133</td>
</tr>
<tr>
<td>8213</td>
<td>9011</td>
<td>7618</td>
<td>8765</td>
</tr>
</tbody>
</table>
3.6 Estimating Differences

Student Book page 83

GOAL
Use your own strategies to estimate differences.

Mount Everest is the world's highest mountain.
It is 8850 m tall.
Tien made a chart to show the highest mountains in Western and Northern Canada.

<table>
<thead>
<tr>
<th>Province/Territory</th>
<th>Name</th>
<th>Height (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yukon</td>
<td>Mount Logan</td>
<td>5959</td>
</tr>
<tr>
<td>British Columbia</td>
<td>Fairweather Mountain</td>
<td>4663</td>
</tr>
<tr>
<td>Alberta</td>
<td>Mount Columbia</td>
<td>3747</td>
</tr>
</tbody>
</table>

About how much taller is Mount Everest than each mountain on Tien's chart?

Step 1: Use a number line to estimate for Mount Logan.
Show your work.

0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000

About how much higher is Mount Everest than Mount Logan? _______

Step 2: Choose your own strategies to estimate for Fairweather Mountain and Mount Columbia.

Mount Everest is about _________ m higher than Fairweather Mountain.
Mount Everest is about _________ m higher than Mount Columbia.
3.6 Estimating Differences
Student Book page 83

**GOAL**
Estimate differences using a number line.

**Problem**

Jack is 130 cm tall.
His mother is 170 cm tall.

**How can you estimate the difference between Jack’s height and his mother’s height?**

Use a number line.
Show all your steps.

Jack’s mother is ______ cm taller than Jack.

What other strategies could you have used to solve the problem?
Estimating Differences

GOAL

Use your own strategies to estimate differences.

1. Joshua and his friends are raising money for a school trip. Each class needs $3000. The chart shows how much each class has raised.

<table>
<thead>
<tr>
<th>Class</th>
<th>Money raised</th>
<th>Money still needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joshua's class</td>
<td>$1047</td>
<td>3000 - 1000 = 2000</td>
</tr>
<tr>
<td>Chu Lee's class</td>
<td>$2516</td>
<td>3000 -</td>
</tr>
<tr>
<td>Nicola's class</td>
<td>$517</td>
<td>3000 -</td>
</tr>
<tr>
<td>Desmond's class</td>
<td>$1998</td>
<td>3000 -</td>
</tr>
<tr>
<td>Heiko's class</td>
<td>$2905</td>
<td>3000 -</td>
</tr>
<tr>
<td>Sandra's class</td>
<td>$989</td>
<td>3000 -</td>
</tr>
</tbody>
</table>

a) Estimate the amount of money each class still needs. Record your answers in the chart.

b) How did you estimate the differences?

2. 290 cm is cut from a 510 cm ribbon. About how many centimetres long is the ribbon now?

3. There are 7100 people in Petrock Town. 3900 are adults. About how many are children?
Rounding

Directions: Round these numbers to the nearest ten.

18     20     33     82     56
24     20     49     91     67

Directions: Round these numbers to the nearest hundred.

243     689     263     162
389     720     351     490
463     846     928     733

Directions: Round these numbers to the nearest thousand.

2,638     3,940     8,653
6,238     1,429     5,061
7,289     2,742     9,460
3,109     4,697     8,302

Directions: Round these numbers to the nearest ten thousand.

11,368     38,421
75,302     67,932
14,569     49,926
93,694     81,648
26,784     87,065
57,843     29,399
3.7 Subtracting Numbers Close to Tens or Hundreds Page 1

Student Book pages 84–86

GOAL
Use mental math to subtract.

Problem
Kate and Max are reading books.
Kate has read 210 pages of her book.
Max has read 159 pages of his book.

How many more pages has Kate read than Max?

Use a number line.

Step 1: Mark 159 and 210 on the number line.

\[ \begin{array}{c}
\text{Step 2: Jump from 159 to the closest ten.} \\
\text{This step has been done for you.} \\
\text{Step 3: Jump by tens from 160 to 210.} \\
\text{Show your jumps on the number line.}
\end{array} \]
Reflecting

Why did it help to jump from 159 to the closest 10?

__________________________

__________________________

__________________________
3.7 Subtracting Numbers Close to Hundreds or Thousands Page 1

Student Book pages 84–86

GOAL

Use mental math to subtract.

Checking

1. In 1792, Captain George Vancouver explored Burrard Inlet, where Vancouver is now.
   In 2010, the Winter Olympics will be held in Vancouver.
   How many years are between the 2 dates?
   Use the number line to find out.

   ![Number Line]

   Step 1: 1792 has been marked on the number line for you.
   Jump to the closer thousand. This jump has been done for you.

   Step 2: Jump to the next thousand.
   Label the jump.

   Step 3: Jump to 2010.
   Label the jump.

   Step 4: Add your jumps.
4. An empty helicopter has a mass of 2998 kg.
   A helicopter with people in it has a mass of 4536 kg.
   What is the difference between the 2 masses?
   Use a number line to subtract.

   Step 1: Mark 2998 on the number line.
   Jump to the closer thousand.

   Step 2: Jump to 4500.

   Step 3: Jump to 4536.

   Step 4: Add your jumps.
   
   \[ \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad} \]

3. Calculate using a number line.

b) 1000 − 298

2007 − 999 = \[\underline{\quad}\]
4. The mass of an empty helicopter is 2998 kg. When it is loaded, the helicopter can have a maximum mass of 4536 kg.

What is the difference between its empty mass and its maximum mass?

Use either Joshua’s Method or Kate’s Method.

**Joshua’s Method**

Show 2998 and 4536 on a number line.

Add on to 2998 to get to 3000, then 4000, then 4536.

\[ 2998 + 2 + 1000 + 536 = 4536 \]

\[ 2998 + 1538 = 4536 \]

**Kate’s Method**

Show the two masses on a number line. Add 2 to each number.

4536 – 2998 has the same difference as \[ \frac{4538}{3000} \].

The difference is \[ \frac{1538}{kg} \].
1. Use mental math to calculate. Show your work. The first one is done for you.

a) \( 1000 - 197 = \boxed{803} \)
\[ 197 + 3 + 800 = 1000 \text{ so } 3 + 800 = 803 \]

b) \( 2000 - 498 = \boxed{1502} \)
\[ 2000 - 500 = 1500 \]

c) \( 1000 - 299 = \boxed{701} \)
\[ 1000 - 300 = 700 \text{ (1) } = 701 \]

d) \( 5000 - 3996 = \boxed{1004} \)
\[ 5000 - 4000 = 1000 \text{ (4) } \]

e) \( 602 - 499 = \boxed{103} \)
\[ 600 - 500 = 100 + 3 \]

f) \( 4006 - 2999 = \boxed{1007} \)
\[ 4000 - 3000 = 1000 + 7 \]

2. A library has 5000 books. 1997 are on loan. How many books are left in the library?
Estimating

Estimate means to give an approximate rather than an exact answer. To find an estimated sum or difference, round the numbers of the problem, then add or subtract. If the number has 5 ones or more, round up to the nearest ten. If the number has 4 ones or less, round down to the nearest ten.

Directions: Round the numbers to the nearest ten, hundred or thousand. Then add or subtract.

Examples:

<table>
<thead>
<tr>
<th>Ten</th>
<th>Hundred</th>
<th>Thousand</th>
</tr>
</thead>
<tbody>
<tr>
<td>74 → 70</td>
<td>64 → 60</td>
<td>352 → 400</td>
</tr>
<tr>
<td>+ 39 → + 40</td>
<td>-25 → -30</td>
<td>-164 → -200</td>
</tr>
<tr>
<td>_____</td>
<td>30</td>
<td>200</td>
</tr>
<tr>
<td>110</td>
<td></td>
<td>12,000</td>
</tr>
</tbody>
</table>

Round these numbers to the nearest ten.

18 → 49 → 67 →
+ 24 → -33 → -56 →

Round these numbers to the nearest hundred.

255 → 526 → 102 →
- 99 → + 145 → - 75 →

Round these numbers to the nearest thousand.

8,361 → 9,926 →
+ 889 → + 3,645 →
Subtracting Larger Numbers

When you subtract larger numbers, subtract the ones first, then the tens, hundreds, thousands, and so on.

Example:

<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>- 2</td>
<td>1</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>- 2</td>
<td>1</td>
</tr>
</tbody>
</table>


Directions: Solve these subtraction problems.

29
- 26

99
- 58

359
- 55

735
- 734

849
- 726

7,678
- 4,321

865
- 731

55
- 25

9,876
- 1,234

©McGraw-Hill Children's Publishing
3.8 Regrouping before Subtracting Page 1

Student Book pages 88–90

GOAL
Solve subtraction problems by regrouping first.

Checking

1. A video store has 1257 DVDs.
   Model 1257 using base ten blocks.
   Draw your model in the place value chart.

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

   a) 788 DVDs have been rented.
   How many DVDs are left at the store?

   Step 1: Compare the numbers column by column.
   Do you need to regroup the thousands? _______
   How do you know?

   ____________________________________________

   Do you need to regroup the hundreds? _______
   Do you need to regroup the tens? _______
   Do you need to regroup the ones? _______

You will need
• base ten blocks
• a place value chart
3.8 Regrouping before Subtracting Page 2

Step 2: Draw your model after regrouping.

<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>

Step 3: Subtract 780. Draw your model after subtracting.

<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>

How many DVDs are left at the video store? _____

Practising

5. Would you calculate each difference using mental math or using pencil and paper? Give a reason for each choice. Then calculate.

a) $5324 - 324 = _____$
   
   **Circle** one: mental math    pencil and paper
   
   Why?
   
   _____________________________
   
   _____________________________

b) $6905 - 2876 = _____$
   
   **Circle** one: mental math    pencil and paper
   
   Why?
   
   _____________________________
   
   _____________________________
3.8 Regrouping before Subtracting Page 1

Student Book pages 88–90

GOAL
Solve subtraction problems by regrouping first.

Problem
A video store has 457 DVDs.
148 DVDs have been rented.

How many DVDs are left at the video store?

Make a model to solve the problem.

Step 1: Model 457 with base ten blocks.
This step has been done for you.

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

Step 2: Compare the numbers column by column.
Do you need to regroup to subtract 1 hundred from 4 hundreds? _______
Do you need to regroup to subtract 4 tens from 5 tens? _______
Do you need to regroup to subtract 8 ones from 7 ones? _______
Trade 1 of the tens for 10 ones.

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

Copyright © 2008 by Nelson Education Ltd.
3.8 Regrouping before Subtracting Page 2

Step 3: Subtract the hundreds, tens, and ones.
Count the blocks that are left.

There are _______ DVDs left at the video store.

Reflecting

How could you have estimated the number of DVDs that are left at the video store?

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Regrouping before Subtracting

**GOAL**

Solve subtraction problems by regrouping first.

1. Calculate by regrouping.

   a)  \[
   \begin{array}{c}
   1973 \\
   -527 \\
   \hline
   \end{array}
   \]

   d)  \[
   \begin{array}{c}
   3238 \\
   -194 \\
   \hline
   \end{array}
   \]

   b)  \[
   \begin{array}{c}
   2528 \\
   -146 \\
   \hline
   \end{array}
   \]

   e)  \[
   \begin{array}{c}
   6885 \\
   -736 \\
   \hline
   \end{array}
   \]

   c)  \[
   \begin{array}{c}
   5136 \\
   -410 \\
   \hline
   \end{array}
   \]

   f)  \[
   \begin{array}{c}
   3167 \\
   -248 \\
   \hline
   \end{array}
   \]

   **At-Home Help**

   To help you subtract, you can regroup. For example:
   \[
   \begin{array}{c}
   14812 \\
   -292 \\
   \hline
   1809
   \end{array}
   \]

   - You need more than 4 hundreds to take away 6 hundreds. You can regroup 2 thousands 4 hundreds as 1 thousand 14 hundreds.
   - You need more than 2 ones to take away 3 ones. You can regroup 9 tens 2 ones as 8 tens 12 ones.

2. Calculate using regrouping or mental math.

   a)  \[3001 - 1999 = \underline{1002}\]

   c)  \[5008 - 2997 = \underline{2011}\]

   b)  \[1875 - 1364 = \underline{511}\]

   d)  \[2738 - 342 = \underline{2396}\]
Subtraction: Regrouping

Subtract using regrouping.

Examples:

\[
\begin{array}{ccc}
23 & \frac{1}{2} & 3 \\
-18 & -18 & \\
\hline
5 & \\
\end{array}
\quad
\begin{array}{ccc}
243 & \frac{1}{2} & 3 \\
-96 & -96 & \\
\hline
147 & \\
\end{array}
\]

76 \quad 94
-49 \quad -38
-77 \quad -83
-29

806 \quad 743
-738 \quad -550
-336 \quad -289
-69

961 \quad 573
-846 \quad -76
-55 \quad -19
-59

358 \quad 147
-99 \quad -49

325 \quad 873
-68 \quad -35
3.9 Subtracting by Renaming Page 1

Student Book pages 92–93

GOAL
Use renaming to make subtraction easier.

Problem
Vera's class is having a party on the 100th day of school. Today is the 67th day of school.

How many days are there until the 100th day of school?

Subtract by renaming to solve the problem.

Step 1: Rename 100 as 99 + 1.

\[ \begin{array}{c}
  9 \\
  9 + 1 \\
  \hline \\
  1 \\
  0 \\
  0 \\
  \hline \\
  67 \\
  \end{array} \]

Step 2: Subtract.

Step 3: Add 1 to the answer.

Hint: You need to add 1 because you renamed 100 as 99 + 1.

There are _______ days until the 100th day of school.
Reflecting

How does renaming make subtracting easier?

Write a subtraction question that you could solve by renaming the numbers first.

Solve your problem.
3.9 Subtracting by Renaming Page 1

Student Book pages 92–93

GOAL
Use renaming to make subtraction easier.

Checking

1. Vera’s brother is 1083 days old.
   How many days are there until his 5000th day birthday?

   \[ \begin{array}{c}
   \text{4} \\
   \text{9} \\
   \text{9} \\
   \text{9} \\
   \text{+} \end{array} \]

   \[ \begin{array}{c}
   \text{+} \\
   \text{1} \\
   \text{0} \\
   \text{8} \\
   \text{3} \end{array} \]

   \[ \begin{array}{c}
   \text{5} \\
   \text{0} \\
   \text{0} \\
   \text{0} \end{array} \]

   \[ \text{Step 1: Rename 5000 as 4999 + 1.} \]

   \[ \text{Step 2: Subtract.} \]

   \[ \text{Step 3: Add 1 to the answer.} \]

Why do you need to add 1 to your answer?

How many days are there until Vera’s brother’s 5000th day birthday?

Practising

4. Kyle has 3456 points in a game.
   To win, he must score 6000 points.
   How many more points does he need to win?

   \[ \begin{array}{c}
   \text{6} \\
   \text{0} \\
   \text{0} \\
   \text{0} \end{array} \]

   \[ \begin{array}{c}
   \text{3} \\
   \text{4} \\
   \text{5} \\
   \text{6} \end{array} \]

   \[ \text{Step 1: Rename 6000 as 5999 + 1.} \]

   \[ \text{Step 2: Subtract.} \]

   \[ \text{Step 3: Add 1 to the answer.} \]
4. Estimate. Then calculate.

a) $1000 - 435$
   1000 - 435 is about ________.
   $1000 - 435 = ________$

b) $2000 - 435$
   2000 - 435 is about ________.
   $2000 - 435 = ________$

c) $3000 - 278$
   3000 - 278 is about ________.
   $3000 - 278 = ________$

5. A town has 7000 people.
   914 people are 6 years old or younger.
   How many people are older than 6 years? ______
   Hint: Rename 7000 as 6999 + 1, then subtract. Do not forget to add the 1 back.
Subtracting by Renaming

**GOAL**

Use renaming to make subtraction easier.

1. Estimate each difference.
   a) 2000 – 385 is about _____
   b) 1000 – 197 is about _____
   c) 3000 – 964 is about _____
   d) 5000 – 331 is about _____

2. Subtract by renaming.
   a)  
      \[
      \begin{array}{c}
      1000 \\
      \underline{- 486} \\
      \end{array}
      \]
   c)  
      \[
      \begin{array}{c}
      4000 \\
      \underline{- 865} \\
      \end{array}
      \]
   b)  
      \[
      \begin{array}{c}
      2000 \\
      \underline{- 142} \\
      \end{array}
      \]
   d)  
      \[
      \begin{array}{c}
      3000 \\
      \underline{- 298} \\
      \end{array}
      \]

   a) 4000 – 721 = _____  
   c) 3000 – 307 = _____  
   e) 6000 – 214 = _____
   b) 1000 – 192 = _____  
   d) 5000 – 536 = _____  
   f) 2000 – 1642 = _____
3.10 Communicating about Number Concepts and Procedures

GOAL
Explain your thinking when estimating a sum or difference.

Checking

1. The circus had 6000 tickets to sell.
   - It sold 1631 adult tickets.
   - It sold 3712 children's tickets.

   How many tickets are left?

Step 1: Estimate how many adult tickets were sold.
(Circle) the closer hundred: 1600 1631 1700

Step 2: Estimate how many children's tickets were sold.
(Circle) the closer hundred: 3700 3712 3800

Step 3: Add your estimates.

\[ \text{adult} + \text{children's} = \text{tickets sold} \]

Step 4: Subtract.

\[ 6000 - \text{tickets sold} = \text{tickets left} \]

Is your estimate reasonable? ______
How do you know? Use the Communication Checklist to explain.

Communication Checklist

✓ Did you show the right amount of detail?
✓ Did you explain your thinking?
2. Bryan scored 2815 points in level 1 of a video game.
   He scored 3947 points in level 2.
   He needs to reach 7500 points.
   How many points does he need to score in level 3?

Step 1: Estimate. Show your steps.

Step 2: Calculate. Show your steps.

How do you know your answer is reasonable?
Communicating about Number Concepts and Procedures

GOAL

Explain your thinking when estimating a sum or difference.

1. The chart shows the number of people in 3 towns. Jade calculated that the total number of people is 7500. Is her answer reasonable? Explain.

<table>
<thead>
<tr>
<th>Town</th>
<th>Number of people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willowbrook</td>
<td>1497</td>
</tr>
<tr>
<td>Argent</td>
<td>3140</td>
</tr>
<tr>
<td>Freeman</td>
<td>2073</td>
</tr>
</tbody>
</table>

At-Home Help
You can estimate to check whether an answer is reasonable or not.

Communication Checklist
✓ Did you show the right amount of detail?
✓ Did you explain your thinking?

2. Add or subtract.

a) \(2000 - 399\)  
c) \(6865 + 1437\)  
e) \(3062 + 1086 + 421\)

b) \(4971 - 735\)  
d) \(1005 - 205\)  
f) \(5000 - 267\)

3. Explain how you know your answer to part f) of Question 2 is reasonable.
Chapter 3  

Test Yourself

Circle the correct answer.

1. Estimate 398 + 403.
   A. about 800  B. about 700  C. about 900  D. about 600

2. Estimate 498 + 1015 + 2499.
   A. about 3000  B. about 3500  C. about 4000  D. about 4500

   A. 4631  B. 1951  C. 1621  D. 1930

4. Calculate 2518 + 105 + 3245.
   A. 5855  B. 5813  C. 5868  D. 5788

5. At the school fair, Tien earned 2504 points, Cole earned 1013 points, and Emily earned 2995 points. If they add their points together, about how many points do they have?
   A. about 5000 points  C. about 8000 points
   B. about 6500 points  D. about 9500 points

   A. about 2500  B. about 1500  C. about 3000  D. about 2000

7. Calculate 3000 − 496.
   A. 2504  B. 2604  C. 3496  D. 2696

8. Calculate 5893 − 641.
   A. 5841  B. 5252  C. 4852  D. 5351

9. Calculate 6000 − 1432.
   A. 5578  B. 4668  C. 5678  D. 4568
Name: ___________________________ Date: ________________

3.10 Communicating about Number Concepts and Procedures Page 1
Student Book pages 94–95

GOAL
Explain your thinking when estimating a sum or difference.

Problem
Joshua is selling tickets for the school play.
He started with 200 tickets.
He has sold 148 tickets.
Joshua estimates that there are about 50 tickets left.

Is Joshua’s estimate reasonable?

Estimate 200 – 148.

Step 1: Round 148 to the closest ten. ______

Step 2: Subtract that number from 200.
Show your work.

______________________________

Is Joshua’s estimate reasonable? ______

Explain your thinking.

______________________________
Reflecting

Check your answer using the Communication Checklist.
How could you improve your answer?

Communication Checklist

✓ Did you show the right amount of detail?
✓ Did you explain your thinking?
Chapter 3 Test  Page 1

1. One answer for each sum is correct. Estimate to identify the correct answer.
   a) $3587 + 3710 = \underline{6297}$ or $7297$
   b) $1896 + 205 + 4809 = \underline{6910}$ or $7910$
   c) $209 + 588 + 345 = \underline{1142}$ or $2142$

2. a) Will the total of these 3 lengths be greater than 6000 cm? ____________
   
   2945 cm  1810 cm  2278 cm

   b) Did you estimate or calculate an exact answer? Explain.

   ____________________________________________________________________________

3. Madeleine is going to walk to the store with her older sister. Which store is closer to her home? Explain what you did.
   
   Store A  756 m + 1387 m + 1098 m
   Store B  1675 m + 310 m + 1890 m

   ____________________________________________________________________________

4. A crowd of 2724 people attended the first day of a horse show. The next day, 3168 attended. What was the attendance for the two days?

   ____________________________________________________________________________

5. Tim lives 1819 km away from his cousin Mark. His cousin Alicia lives 6085 km farther.
   a) Estimate how far Alicia lives from Tim. About \underline{____________} km
   b) Calculate how far Alicia lives from Tim.
Chapter 3 Test  Page 2

6. Calculate. Show your work.
   a) $4368 + 632$
   c) $1397 + 1275$

   b) $6543 + 875 + 349$
   d) $4120 + 2537$

7. Use mental math to subtract. Explain what you did.
   a) $350 - 99 =$
   
   b) $1000 - 499 =$
   
   c) $500 - 175 =$
   
   d) $3000 - 1999 =$

8. 7216 fans attended a soccer game.  
   3499 fans entered through Gate 1 and the rest came through Gate 2.  
   How many fans came through Gate 2?

   a) $3286 - 257$ is about _______.  The exact answer is _______.
   
   b) $5471 - 841$ is about _______.  The exact answer is _______.
   
   c) $7421 - 460$ is about _______.  The exact answer is _______.
   
   d) $8822 - 1162$ is about _______.  The exact answer is _______.

10. Ian plans to read 2000 pages this year.  So far, he has read 1054 pages.  How many more pages does he need to read?