

Chapter 3
Lesson 6

Name: _____ Date: _____

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.

Class	Money raised	Money still needed
Joshua's class	\$1047	
Chu Lee's class	\$2516	
Nicola's class	\$517	
Desmond's class	\$1998	
Heiko's class	\$2905	
Sandra's class	\$989	

At-Home Help

Here are some ways to estimate differences.

- Use base ten blocks or counters to model the problem.
- Use a number line to model the problem.
- Estimate by subtracting the closer hundreds or thousands (e.g., 1130 is closer to 1000 than 2000).

- 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 _____ 33 _____ 82 _____ 56 _____
24 _____ 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.

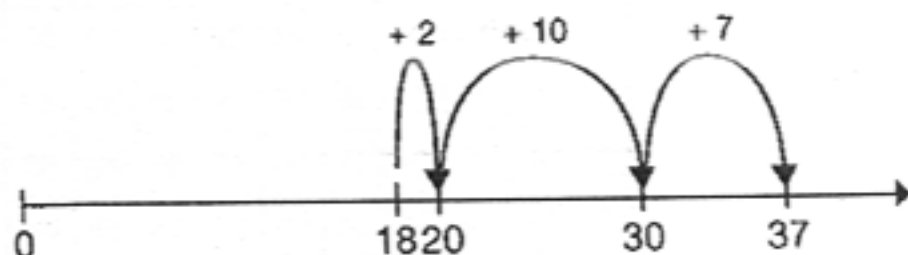
2,638 _____ 3,940 _____ 8,653 _____
6,238 _____ 1,429 _____ 5,061 _____
7,289 _____ 2,742 _____ 9,460 _____
3,109 _____ 4,697 _____ 8,302 _____

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 _____

- You can subtract by adding on.

To calculate $37 - 18$, think of $18 + \blacksquare = 37$.



Stop at friendly numbers along the way.

$$18 + (2 + 10 + 7) = 37$$

$$18 + 19 = 37$$

$$\text{So, } 37 - 18 = 19$$

Remember

- Sometimes it is easier to subtract different parts of a number one at a time.

Try These

- Circle the best estimate. Explain how you estimated.

possible estimates

a) $88 - 39$

30

40

50

b) $48 - 20$

20

30

40

c) $91 - 38$

50

60

70

- Estimate each difference. Explain your thinking.

a) $58 - 17$ is about _____.

b) $37 - 25$ is about _____.

c) $36 - 29$ is about _____.

Name: _____

Date: _____

3. You can calculate $64 - 49$ using a 100 chart. Subtract in parts starting at 64. To subtract 40, go up 4 rows.

To subtract 9, go up 1 row and right 1 to subtract 10 and then add back 1.

$$64 - 49 = 15$$

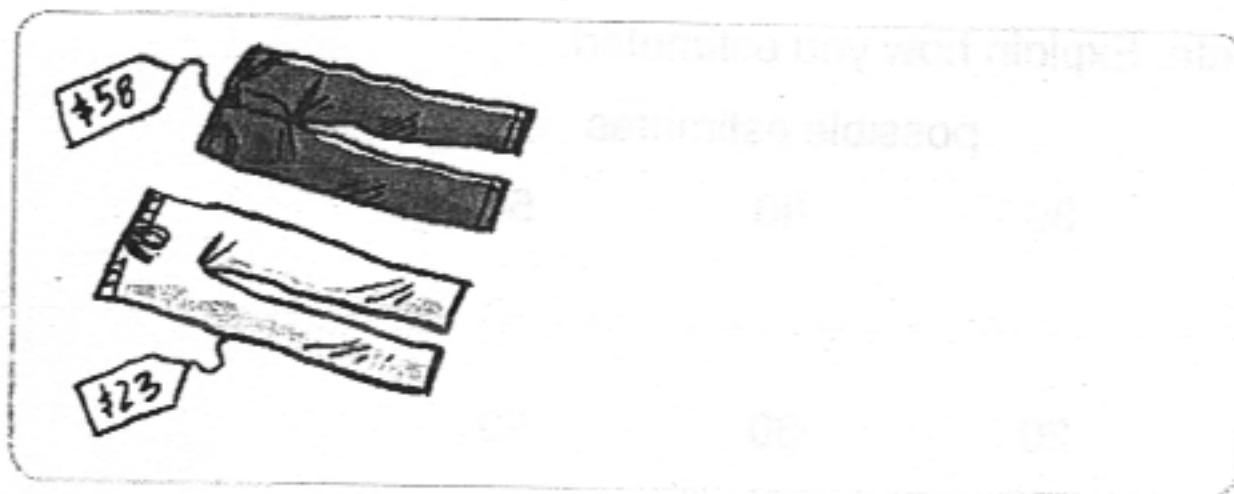
Use the 100 chart to subtract.

Use a different colour for each subtraction.

- a) $22 - 11 =$ _____ c) $65 - 26 =$ _____
b) $65 - 24 =$ _____ d) $72 - 17 =$ _____

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

4. What is the difference in price? Solve the problem. Show your work.



5. Show 2 ways to complete each subtraction.

a) $48 - 7$

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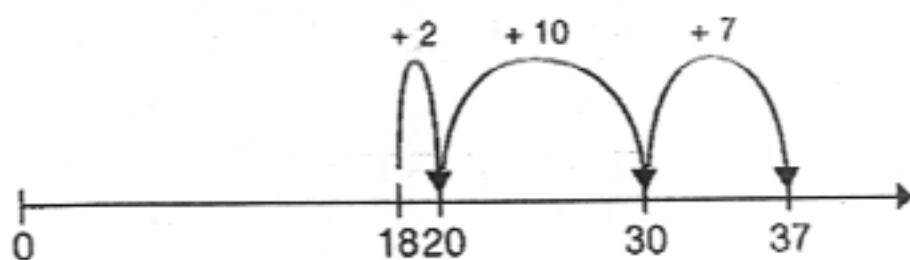
b) $75 - 37$

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- You can subtract by adding on.

To calculate $37 - 18$, think of $18 + \blacksquare = 37$.

Subtraction



Stop at friendly numbers along the way.

$$18 + (2 + 10 + 7) = 37$$

$$18 + 19 = 37$$

$$\text{So, } 37 - 18 = 19$$

Lesson 6 - estimating

Remember

- Sometimes it is easier to subtract different parts of a number one at a time.

Try These

- Circle the best estimate. Explain how you estimated.

possible estimates

a) $88 - 39$

30

40

(50)

$$80 - 30 = 50$$

$$90 - 40 = 50$$

$$90 - 40 = 50$$

b) $48 - 20$

(20)

30

40

$$40 - 20 = 20$$

$$\text{or, } 50 - 30 = 20$$

c) $91 - 38$

50

(60)

70

$$90 - 30 = 60$$

$$100 - 40 = 60$$

- Estimate each difference. Explain your thinking.

a) $58 - 17$ is about 40.

$$50 - 20 = 30$$

$$60 - 20 = 40$$

$$50 - 10 = 40$$

b) $37 - 25$ is about 10.

$$40 - 30 = 10$$

$$30 - 20 = 10$$

c) $36 - 29$ is about 10.

$$30 - 20 = 10$$

$$40 - 30 = 10$$

Name: _____

Date: _____

3. You can calculate $64 - 49$ using a 100 chart. Subtract in parts starting at 64. To subtract 40, go up 4 rows.

To subtract 9, go up 1 row and right 1 to subtract 10 and then add back 1.

$$64 - 49 = 15$$

Use the 100 chart to subtract.

Use a different colour for each subtraction.

$$\begin{array}{r} 10-1 \\ 22-11 = \underline{11} \\ -20-1 \end{array}$$

$$b) 65 - 24 = \underline{41}$$

$$c) 65 - 26 = \underline{39}$$

$$d) 72 - 17 = \underline{55}$$

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

4. What is the difference in price?
Solve the problem. Show your work.



$$58 - 23 = 35$$

$$60 - 20 = 40$$

5. Show 2 ways to complete each subtraction.

a) $48 - 7$

Estimate

$$50 - 7 = 43$$

Estimate

$$48 - 10 = 38$$

100 chart

$$48 - 7 = 41$$

b) $75 - 37$

Estimate

$$80 - 40 = 40$$

Estimate

$$70 - 30 = 40$$

100 chart

$$75 - 37 = 38$$

Chapter 3
Lesson 7

Name: Answer Key Date: 4

Subtracting Numbers Close to Hundreds or Thousands

Gr. 4

GOAL

Use mental math to subtract.

1. Use mental math to calculate. Show your work.
The first one is done for you.

a) $1000 - 197 = 803$

$197 + 3 + 800 = 1000$, so $3 + 800 = 803$

b) $2000 - 498 = 1502$

$2000 - 500 = 1500 + 2$

c) $1000 - 299 = 701$

$1000 - 300 = 700 + 1$

d) $5000 - 3996 = 1004$

$5000 - 4000 = 1000 + 4$

e) $602 - 499 = 103$

$600 - 500 = 100 + 3$

f) $4006 - 2999 = 1007$

$4000 - 3000 = 1000 + 7$

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

$5000 - 1997 = 3003$

$5000 - 2000 = 3000 + 3$
 $= 3003$

At-Home Help

To subtract, add to the smaller number until you reach the greater number. For example:
 $1904 - 897 =$

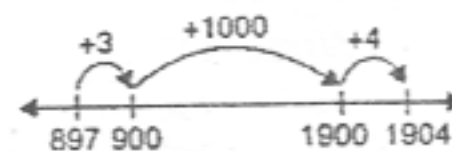
This is the same as
 $897 + \square = 1904$

To reach 1904, add numbers to 897:

$897 + 3 = 900$

$900 + 1000 = 1900$

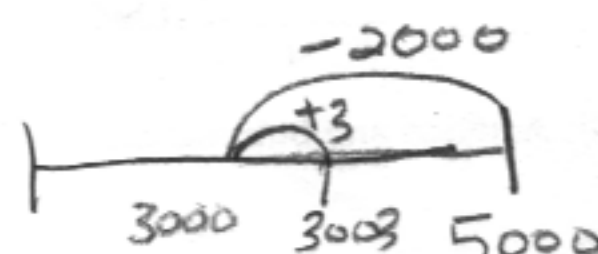
$1900 + 4 = 1904$



The difference is
 $3 + 1000 + 4 = 1007$.

Check
 $4999 + 1$
 $\underline{5000}$
 $\underline{-1997}$
 $3002 + 1$

3003



Subtracting Mentally

Teacher
Answer
Key

Goal

Develop mental math strategies for subtracting 2-digit numbers.

1. Add the same number to each number to make subtracting easier. Record only the answer.

a) $56 - 18 = 58 - 20 = 38$

b) $61 - 19 = 61 - 20 = 41$

c) $45 - 28 = 47 - 30 = 17$

d) $51 - 39 = 52 - 40 = 12$

e) $32 - 9 = 33 - 10 = 23$

f) $75 - 49 = 76 - 50 = 26$

g) $83 - 28 = 85 - 30 = 55$

h) $65 - 48 = 67 - 50 = 17$

At-Home Help

Adding the same number to each number in a subtraction question does not change the answer.

$$\begin{array}{rcl} 6 + 2 & \rightarrow & 8 \\ -1 + 2 & \rightarrow & -3 \\ \hline 5 & & 5 \end{array}$$

Adding the same number can sometimes make it easier to subtract.

$$\begin{array}{rcl} 37 + 2 & \rightarrow & 39 \\ -18 + 2 & \rightarrow & -20 \\ \hline & & 19 \end{array}$$

$$37 - 18 = 39 - 20 = 19$$

2. Use mental math to solve each problem.

- a) It is 33°C in one town and 9°C in another town.

What is the difference in temperature between the towns?

$33 - 9 = 24$ or $34 - 10 = 24$

$$\begin{array}{r} 23 \\ 33 \\ -9 \\ \hline 24 \end{array}$$

- b) Licorice costs 62 cents. Gumballs cost 39 cents.

How much more does the licorice cost than the gumballs?

$62 - 39 = 23$ or $63 - 40 = 23$

$$\begin{array}{r} 512 \\ 62 \\ -39 \\ \hline 23 \end{array}$$

- c) 19 cm is cut from a 51 cm ribbon.

How many centimetres long is the ribbon now?

$51 - 19 = 32$ or $52 - 20 = 32$

- d) There are 71 students in grade 4.

39 are girls. How many students are boys?

$71 - 39 = 32$ or $72 - 40 = 32$

$$\begin{array}{r} 611 \\ 71 \\ -39 \\ \hline 32 \end{array}$$

Chapter 3
Lesson 7

Name: _____ Date: _____

Subtracting Numbers Close to Hundreds or Thousands

GOAL

Use mental math to subtract.

1. Use mental math to calculate. Show your work.
The first one is done for you.

a) $1000 - 197 = \underline{803}$

$197 + 3 + 800 = 1000$, so $3 + 800 = 803$

b) $2000 - 498 = \underline{\hspace{2cm}}$

c) $1000 - 299 = \underline{\hspace{2cm}}$

d) $5000 - 3996 = \underline{\hspace{2cm}}$

e) $602 - 499 = \underline{\hspace{2cm}}$

f) $4006 - 2999 = \underline{\hspace{2cm}}$

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

At-Home Help

To subtract, add to the smaller number until you reach the greater number. For example:
 $1904 - 897 = \underline{\hspace{2cm}}$

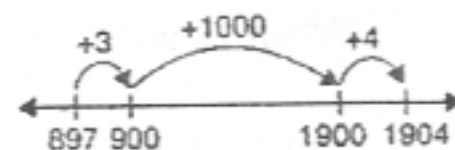
This is the same as
 $897 + \underline{\hspace{2cm}} = 1904$

To reach 1904, add numbers to 897:

$897 + 3 = 900$

$900 + 1000 = 1900$

$1900 + 4 = 1904$



The difference is
 $3 + 1000 + 4 = 1007$.

Subtracting Mentally

Goal

Develop mental math strategies for subtracting 2-digit numbers.

1. Add the same number to each number to make subtracting easier. Record only the answer.

a) $56 - 18 =$ _____

b) $61 - 19 =$ _____

c) $45 - 28 =$ _____

d) $51 - 39 =$ _____

e) $32 - 9 =$ _____

f) $75 - 49 =$ _____

g) $83 - 28 =$ _____

h) $65 - 48 =$ _____

At-Home Help

Adding the same number to each number in a subtraction question does not change the answer.

$$\begin{array}{r} 6 + 2 \longrightarrow 8 \\ -1 + 2 \longrightarrow -3 \\ \hline 5 \qquad \qquad 5 \end{array}$$

Adding the same number can sometimes make it easier to subtract.

$$\begin{array}{r} 37 + 2 \longrightarrow 39 \\ -18 + 2 \longrightarrow -20 \\ \hline 19 \end{array}$$

$$\begin{aligned} 37 - 18 &= 39 - 20 \\ &= 19 \end{aligned}$$

2. Use mental math to solve each problem.

- a) It is 33°C in one town and 9°C in another town.
What is the difference in temperature between the towns?

- b) Licorice costs 62 cents. Gumballs cost 39 cents.
How much more does the licorice cost than the gumballs?

- c) 19 cm is cut from a 51 cm ribbon.
How many centimetres long is the ribbon now?

- d) There are 71 students in grade 4.
39 are girls. How many students are boys?

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.

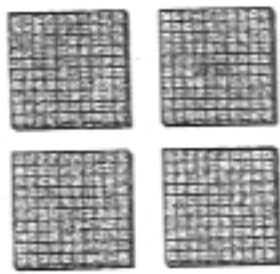




How many DVDs are left at the video store?

Make a model to solve the problem.

Step 1: Model 457 with base ten blocks.

This step has been done for you.

Hundreds	Tens	Ones
		

	4	5	7	
-	1	4	8	

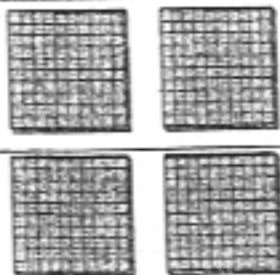


Step 2: Compare the numbers column by column.

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.

Hundreds	Tens	Ones
		

	4	17		
	4	5	7	
-	1	4	8	
			9	

You will need

- base ten blocks



- a place value chart

Thousands	Hundreds	Tens	Ones

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?

1. A video store has 1257 DVDs.

Model 1257 using base ten blocks.

Draw your model in the place value chart.

Thousands	Hundreds	Tens	Ones

Step 2: Draw your model after regrouping.

Thousands	Hundreds	Tens	Ones

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

Thousands	Hundreds	Tens	Ones

How many DVDs are left at the video store?

Chapter 3
Lesson 8

Name: _____ Date: _____

Regrouping before Subtracting

GOAL

Solve subtraction problems by regrouping first.

1. Calculate by regrouping.

a)

	1	9	7	3
-		5	2	7

b)

	2	5	2	8
-		1	4	6

c)

	5	1	3	6
-		4	1	0

d)

	3	2	3	8
-		1	9	4

e)

	6	8	8	5
-		7	3	6

f)

	3	1	6	7
-		2	4	8

At-Home Help

To help you subtract, you can regroup. For example:

$$\begin{array}{r} 1 \ 14 \ 8 \ 12 \\ 2 \ 4 \ 9 \ 2 \\ - \quad 6 \ 8 \ 3 \\ \hline 1 \ 8 \ 0 \ 9 \end{array}$$

- 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) $3001 - 1999 =$ _____

c) $5008 - 2997 =$ _____

b) $1875 - 1364 =$ _____

d) $2738 - 342 =$ _____

Subtracting from 4-Digit Numbers

Goal

Use a paper and pencil method to subtract from a 4-digit number.

1. Estimate the difference. Then subtract.
Show your work.

a)
$$\begin{array}{r} 3234 \\ - 533 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 8129 \\ - 411 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 2045 \\ - 1236 \\ \hline \end{array}$$

e)
$$\begin{array}{r} 1566 \\ - 807 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 2000 \\ - 621 \\ \hline \end{array}$$

f)
$$\begin{array}{r} 5003 \\ - 347 \\ \hline \end{array}$$

At-Home Help

You can subtract larger numbers by regrouping the top number in several steps.

$$\begin{array}{r} 013516 \\ 1366 \\ - 448 \\ \hline 918 \end{array}$$

The answer seems reasonable because $1400 - 400 = 1000$ and 918 is close to 1000.

2. Estimate and solve.

a) The average yearly precipitation (rain and snow) in Toronto is 819 mm. The greatest average yearly precipitation in Canada is 6655 mm in Henderson Lake, B.C. What is the difference in precipitation between Henderson Lake and Toronto?

b) A town has 1100 adults. 589 are women. How many men are there?

c) A school is trying to raise \$1000 for a charity. \$795 has already been raised. How much more money must the school raise?

3.8 Regrouping before Subtracting Page 1

Student Book pages 88–90

GOAL

Solve subtraction problems by regrouping first.

You will need

- base ten blocks



- a place value chart

Thousands	Hundreds	Tens	Ones

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.

Hundreds	Tens	Ones

	4	5	7
-	1	4	8

Step 2: Compare the numbers column by column.

Do you need to regroup to subtract 1 hundred from 4 hundreds? no

Do you need to regroup to subtract 4 tens from 5 tens? no

Do you need to regroup to subtract 8 ones from 7 ones? yes

Trade 1 of the tens for 10 ones.

Hundreds	Tens	Ones

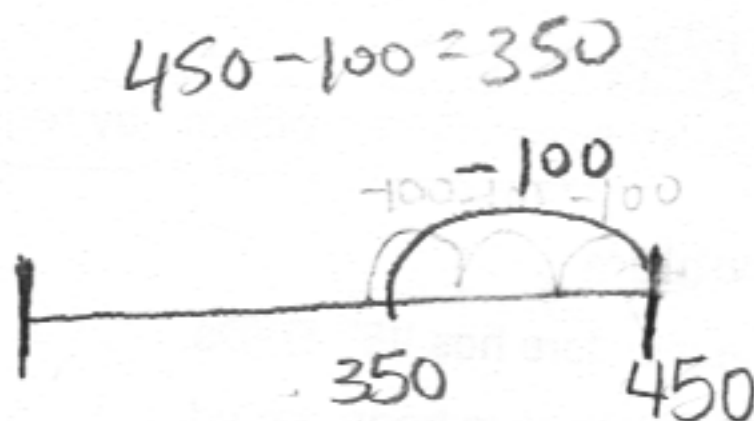
	4	17	
	4	5	7
-	1	4	8
	3	0	9

3.8 Regrouping before Subtracting Page 2

Step 3: Subtract the hundreds, tens, and ones.

Count the blocks that are left.

There are 309 DVDs left at the video store.



Reflecting

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

Round to hundreds

Front end

Mental Math

$450 - 100 = 350$

$400 - 100 = 300$

$450 - 100 = 350$

$500 - 100 = 400$

1. A video store has 1257 DVDs.

Model 1257 using base ten blocks.

Draw your model in the place value chart.

Thousands	Hundreds	Tens	Ones

$1257 - 848 =$

$$\begin{array}{r} 01247 \\ - 848 \\ \hline \end{array}$$

Step 2: Draw your model after regrouping.

Thousands	Hundreds	Tens	Ones

$$\begin{array}{r} 848 \\ - 409 \\ \hline \end{array}$$

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

Thousands	Hundreds	Tens	Ones

How many DVDs are left at the video store?

Chapter 3
Lesson 8

Name: _____ Date: _____

Regrouping before Subtracting

GOAL

Solve subtraction problems by regrouping first.

1. Calculate by regrouping.

check.

$$\begin{array}{r} 2000 \\ - 500 \\ \hline 1500 \end{array}$$

a)

			6	13
	1	9	7	3
-		5	2	7
	1	4	4	6

d)

		1	13	
	3	2	2	8
-		1	9	4
	3	0	4	4

b)

		4	12	
	2	5	2	8
-		1	4	6
	2	3	8	2

e)

			7	15
	6	8	8	5
-		7	3	6
	6	1	4	9

c)

	4	11		
	5	1	3	6
-		4	1	0
	4	7	2	6

f)

	2	11	5	17
	3	1	6	7
-		2	4	8
	2	9	1	9

At-Home Help

To help you subtract, you can regroup. For example:

$$\begin{array}{r} 1\ 14\ 8\ 12 \\ 2\ 4\ 9\ 2 \\ -\ 6\ 8\ 3 \\ \hline 1\ 8\ 0\ 9 \end{array}$$

- 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) $3001 - 1999 = 1000$

$3000 - 2000 = 1000$

c) $5008 - 2997 = 2011$

$5000 - 3000 = 2000$

b) $1875 - 1364 = 511$

$2000 - 1000 = 1000$

d) $2738 - 342 = 2400$

$3000 - 300 = 2700$

check

$$\begin{array}{r} 2001 \\ - 1999 \\ \hline 1001 \end{array}$$

$$\begin{array}{r} 1875 \\ - 1364 \\ \hline 511 \end{array}$$

$$\begin{array}{r} 4\ 10\ 10 \\ 5008 \\ - 2997 \\ \hline 2011 \end{array}$$

$$\begin{array}{r} 6\ 13 \\ 2738 \\ - 342 \\ \hline 2396 \end{array}$$

Subtracting from 4-Digit Numbers

Goal

Use a paper and pencil method to subtract from a 4-digit number.

At-Home Help

You can subtract larger numbers by regrouping the top number in several steps.

1. Estimate the difference. Then subtract.
Show your work.

a)
$$\begin{array}{r} 212 \\ 3234 \\ - 533 \\ \hline 2701 \end{array}$$

d)
$$\begin{array}{r} 111 \\ 8129 \\ - 411 \\ \hline 7718 \end{array}$$

check

$8000 - 500 = 7500$

$$\begin{array}{r} 13516 \\ 1366 \\ - 448 \\ \hline 918 \end{array}$$

b)
$$\begin{array}{r} 10315 \\ 2045 \\ - 1236 \\ \hline 809 \end{array}$$

e)
$$\begin{array}{r} 15516 \\ 1566 \\ - 807 \\ \hline 159 \end{array}$$

1500

$- 1000$

$\hline 500$

The answer seems reasonable because $1400 - 400 = 1000$ and 918 is close to 1000.

$$\begin{array}{r} 2000 \\ - 1000 \\ \hline 1000 \end{array}$$

c)
$$\begin{array}{r} 10315 \\ 2000 \\ - 621 \\ \hline 1379 \end{array}$$

f)
$$\begin{array}{r} 15516 \\ 5003 \\ - 347 \\ \hline 4656 \end{array}$$

$5000 - 300 = 4700$

2. Estimate and solve.

- a) The average yearly precipitation (rain and snow) in Toronto is 819 mm. The greatest average yearly precipitation in Canada is 6655 mm in Henderson Lake, B.C. What is the difference in precipitation between Henderson Lake and Toronto?

$7000 - 800 = 6200$

$$\begin{array}{r} 516415 \\ 6655 \\ - 819 \\ \hline 5836 \end{array}$$

- b) A town has 1100 adults. 589 are women. How many men are there?

$1000 - 500 = 500$

$$\begin{array}{r} 1100 \\ - 589 \\ \hline 511 \end{array}$$

- c) A school is trying to raise \$1000 for a charity. \$795 has already been raised. How much more money must the school raise?

$1000 - 800 = 200$

$$\begin{array}{r} 1000 \\ - 795 \\ \hline 205 \end{array}$$

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.



$$\begin{array}{r} 99 + 1 \\ \cancel{100} \\ - 67 \\ \hline 32 + 1 \end{array}$$



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.

		9	9	+	1
		1	0	0	
-			6	7	
					=

$$\begin{array}{r} 9 \\ 0 \cancel{10} \\ \cancel{100} \\ - 67 \\ \hline 33 \end{array}$$

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 33 days until the 100th day of school.

3.9 Subtracting by Renaming Page 2

Reflecting

How does renaming make subtracting easier?

It makes subtracting easier with zeros by putting 9's in the top subtraction equation

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

4. Estimate. Then calculate.

a) $1000 - 435$

1000 - ⁵⁰⁰435 is about 500. ✓

$$1000 - 435 = 565$$

Handwritten multiplication of 435 by 12 on a grid. The calculation is as follows:

		9	9	9	+	1
		0	0	0		
		0	0	0		
		4	3	5		
		5	6	4	+	1

b) 2000 – 435

2000 - ~~435~~⁵⁰⁰ is about 1500 ✓

$$2000 - 435 = 1565$$

	1	9	9	9	+	1
	2	0	0	0		
		4	3	5		
	1	5	6	4		

c) $3000 - 278$

3000 - ³⁰⁰278 is about 2700

$$3000 - 278 = 2722$$

	2	9	9	9	
	3	0	0	0	
=		2	7	8	
	2	7	2	1	

Subtracting by Renaming

GOAL

Use renaming to make subtraction easier.

answer key

1. Estimate each difference.

- a) $2000 - 385$ is about 1600
 b) $1000 - 197$ is about 800
 c) $3000 - 964$ is about 2000
 d) $5000 - 331$ is about 4700

$$\begin{array}{r} 1999 \\ - 385 \\ \hline 1674 \end{array}$$

$$\begin{array}{r} 999 \\ - 197 \\ \hline 802 \end{array}$$

At-Home Help

To help you subtract, you can rename. For example:
 I want to know $4000 - 2864$.
 I can rename 4000 as $3999 + 1$
 to make it easier to subtract.

$$\begin{array}{r} 3999 + 1 \\ - 2864 \\ \hline 1135 + 1 = 1136 \end{array}$$

2. Subtract by renaming.

a)
$$\begin{array}{r} 999 + 1 \\ + 000 \\ - 486 \\ \hline 513 + 1 \\ \hline 514 \end{array}$$
 check
 $1000 - 486 = 514$ ✓

c)
$$\begin{array}{r} 3999 + 1 \\ + 000 \\ - 865 \\ \hline 3134 + 1 \\ \hline 3135 \end{array}$$

check
 $4000 - 900 = 3100$

b)
$$\begin{array}{r} 1999 + 1 \\ + 000 \\ - 142 \\ \hline 1857 + 1 \\ \hline 1858 \end{array}$$
 check
 $2000 - 100 = 1900$ ✓

d)
$$\begin{array}{r} 2999 + 1 \\ + 000 \\ - 298 \\ \hline 2701 + 1 \\ \hline 2702 \end{array}$$

$3000 - 300 = 2700$

3. Subtract.

a) $4000 - 721 = 3279$

$$\begin{array}{r} 3999 + 1 \\ + 000 \\ - 721 \\ \hline 3278 \end{array}$$

c) $3000 - 307 = 2693$

$$\begin{array}{r} 2999 + 1 \\ + 000 \\ - 307 \\ \hline 2692 + 1 \\ \hline 2693 \end{array}$$

e) $6000 - 214 = 5786$

$$\begin{array}{r} 5999 + 1 \\ + 000 \\ - 214 \\ \hline 5785 + 1 \\ \hline 5786 \end{array}$$

b) $1000 - 192 = 808$

$$\begin{array}{r} 999 + 1 \\ + 000 \\ - 192 \\ \hline 807 + 1 \\ \hline 808 \end{array}$$

d) $5000 - 536 = 4464$

$$\begin{array}{r} 4999 + 1 \\ + 000 \\ - 536 \\ \hline 4463 \end{array}$$

f) $2000 - 1642 = 358$

$$\begin{array}{r} 1999 + 1 \\ + 000 \\ - 1642 \\ \hline 357 \end{array}$$

Subtracting in a Different Way

Goal Use regrouping to make subtraction easier.

1. Finish each subtraction.

a)
$$\begin{array}{r} 1999 + 1 \\ 2000 \\ - 655 \\ \hline 1344 \end{array}$$
 \swarrow 1345

b)
$$\begin{array}{r} 2999 + 4 \\ 3003 \\ - 635 \\ \hline 2364 + 4 \end{array}$$
 \swarrow 2368

c)
$$\begin{array}{r} 4999 + 2 \\ 5001 \\ - 1872 \\ \hline 3127 + 2 \end{array}$$
 \swarrow 3129

At-Home Help

If the top number in a subtraction has many zeroes, you can regroup in 1 step.

$$\begin{array}{r} 1999 + 1 \\ 2000 \\ - 755 \\ \hline 1244 + 1 = 1245 \end{array}$$

The answer is reasonable because $2000 - 800 = 1200$ and 1245 is close to 1200.

2. Estimate each difference. Then subtract. Show your work.

a)
$$\begin{array}{r} 2999 + 1 \\ 3000 \\ - 533 \\ \hline 2466 \end{array}$$
 \swarrow (2467)

c)
$$\begin{array}{r} 1999 + 6 \\ 2005 \\ - 621 \\ \hline 1378 + 6 \end{array}$$
 \swarrow (1384)

e)
$$\begin{array}{r} 999 + 1 \\ 1000 \\ - 807 \\ \hline 192 + 1 \end{array}$$
 \swarrow (193)

b)
$$\begin{array}{r} 1999 + 1 \\ 2000 \\ - 1236 \\ \hline 763 + 1 \end{array}$$
 \swarrow (764)

d)
$$\begin{array}{r} 7999 + 1 \\ 8000 \\ - 411 \\ \hline 7588 + 1 \end{array}$$
 \swarrow (7589)

f)
$$\begin{array}{r} 4999 + 4 \\ 5003 \\ - 1347 \\ \hline 3652 + 4 \end{array}$$
 \swarrow (3656)

3. Correct any unreasonable answers.

a) $8000 - 178 = 7822$

$$\begin{array}{r} 7999 + 1 \\ 8000 \\ - 178 \\ \hline 7821 + 1 \end{array}$$
 \swarrow (7822)

b) $3000 - 488 = 2812$

$$\begin{array}{r} 2999 + 1 \\ 3000 \\ - 488 \\ \hline 2511 + 1 \end{array}$$
 \swarrow (2512)

7.10 Estimating Decimal Sums and Differences Page 1

Student Book pages 240–242

Key.

GOAL

Estimate sums and differences with decimal tenths and hundredths.

Checking

1. Estimate how much money Ethan spent this week.

Step 1: Estimate the amount Ethan spent each day.

On Monday, Ethan spent about \$ 7.00.

On Wednesday, Ethan spent about \$ 6.00.

On Saturday, Ethan spent about \$ 12.00.

Step 2: Add your estimates.

$$\text{\$ } 7.00 + \text{\$ } 6.00 + \text{\$ } 12.00 = \text{\$ } 25.00$$

Ethan spent about \$ 25 this week.

2. Ethan had \$26.89 to start.

Estimate how much money Ethan has left.

Step 1: Ethan had about \$ 27.00 to start.

Step 2: Subtract your total estimate from question 1 from \$26.89.

$$\text{\$ } 26.89 - \text{\$ } 25.00 = \text{\$ } 1.89$$

Ethan has about \$ 1.89 left. ✓

What I Spent This Week	
Monday:	\$7.45
Wednesday:	\$6.25
Saturday:	\$11.85

$$\begin{array}{r}
 +12.00 \\
 +6.00 \\
 +7.00 \\
 \hline
 25.00
 \end{array}$$

check

$$\begin{array}{r}
 27.00 \\
 -25.00 \\
 \hline
 \$2.00
 \end{array}$$

$$\begin{array}{r}
 26.89 \\
 -25.00 \\
 \hline
 \$1.89
 \end{array}$$

7.10 Estimating Decimal Sums and Differences Page 2

Practising

3. Jade ordered a pita and soup from Penny's Pitas.

a) Estimate the cost of Jade's order.

\$ 3.00 + \$ 1.00 is about \$ 4.00.
 Pita Soup

b) Gen ordered yogurt.

Yogurt costs about \$ 1.00.

About how much more money did Jade spend

than Gen? \$ 4.00 - 1.00 = 3.00

How do you know?

Because I rounded to the closest
dollar amount

Penny's Pitas



Yogurt \$1.29



Pita \$2.75



Juice \$1.25



Milk \$0.89



Soup \$1.39



Fruit Salad \$1.85

actual

Jade

+1 +1

2.75

+ 1.39

\$4.14

Gen actual

\$1.29

3 x 14

4.14

- 1.29

\$2.85

4. Michael has \$3.50 to spend on food from Penny's Pitas.

He wants to buy soup, milk, and a pita.

Does Michael have enough money?

Step 1: Estimate the cost of each item.

Soup: \$1.39 is about \$ 1.00.Milk: \$0.89 is about \$ 1.00.Pita: \$2.75 is about \$ 3.00.

Actual

+2 +2

1.39

+ 0.89

+ 2.75

\$5.03

Step 2: Add your estimates.

\$ 1.00 + \$ 1.00 + \$ 3.00 is about \$ 5.00.Does Michael have enough money? No

How do you know?

We rounded and he was over \$5.00
and he had less than \$4 to spend.

3.10 Communicating about Number Concepts and Procedures Page 1

Student Book pages 94-35

teacher example

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.

$$\begin{array}{r} 1600 + 3700 = 5300 \\ \text{adult} \quad \text{children's} \quad \text{tickets sold} \end{array}$$

Step 4: Subtract.

$$6000 - 5300 = 700$$

tickets sold tickets left

Is your estimate reasonable? Yes

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?

$$\begin{array}{r} 1631 \\ + 3712 \\ \hline 5343 \end{array}$$

Actual Yes, 657 is close to 700

3.10 Communicating about Number Concepts and Procedures Page 2

Practising

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?

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.

3.10 Communicating about Number Concepts and Procedures Page 2

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
Lesson 10

Name: _____ Date: _____

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.

Town	Number of people
Willowbrook	1497
Argent	3140
Freeman	2073

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)
$$\begin{array}{r} 2000 \\ - 399 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 6865 \\ + 1437 \\ \hline \end{array}$$

e)
$$\begin{array}{r} 3062 \\ 1086 \\ + 421 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 4971 \\ - 735 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 1005 \\ - 205 \\ \hline \end{array}$$

f)
$$\begin{array}{r} 5000 \\ - 267 \\ \hline \end{array}$$

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

Chapter 3

Test Yourself

Name: _____ Date: _____

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

3. Calculate $1630 + 321$.

- 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

6. Estimate $2989 - 1015$.

- 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:

Chapter 3 Test

Teacher

Answer Key

1. Use mental math to subtract. Explain what you did. (show your work)

a) $350 - 99 = 251$

$$\begin{array}{r} 350 \\ - 100 \\ + 1 \\ \hline 250 + 1 \end{array}$$

b) $1000 - 499 = 501$

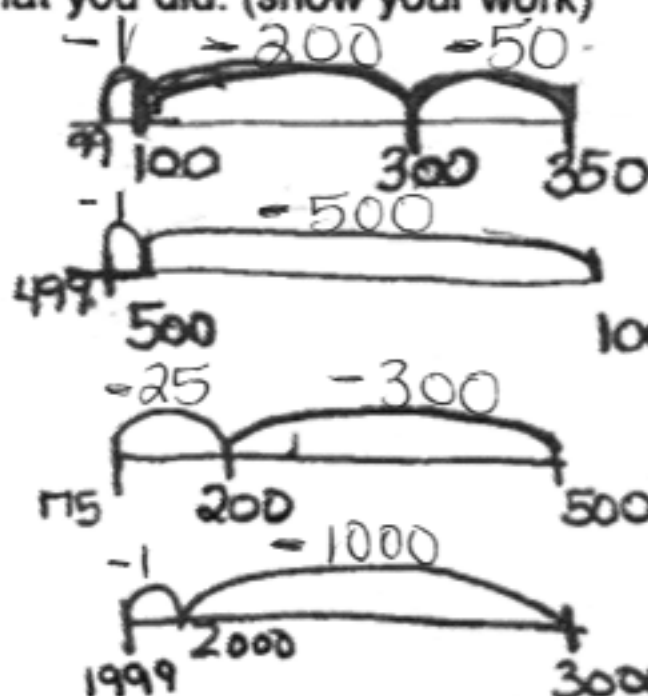
$$\begin{array}{r} 1000 \\ - 500 \\ + 1 \\ \hline 500 + 1 \end{array}$$

c) $500 - 175 = 325$

$$\begin{array}{r} 500 \\ - 200 \\ + 25 \\ \hline 300 + 25 \end{array}$$

d) $3000 - 1999 = 1001$

$$\begin{array}{r} 3000 \\ - 2000 \\ + 1 \\ \hline 1000 + 1 \end{array}$$



2. Estimate. Then calculate. Show your work

a) $3286 - 257$ is about 3000 . The exact answer is 3029

$$3000 - 300 = 2700$$

$$\begin{array}{r} 3300 \\ - 300 \\ \hline 3000 \end{array}$$

$$\begin{array}{r} 3286 \\ - 257 \\ \hline 3029 \end{array}$$

b) $5471 - 841$ is about 4200 . The exact answer is 4630

$$5500 - 800 = 4700$$

$$\begin{array}{r} 5000 \\ - 800 \\ \hline 4200 \end{array}$$

$$\begin{array}{r} 5471 \\ - 841 \\ \hline 4630 \end{array}$$

c) $7421 - 460$ is about 6500 . The exact answer is 6961

$$7400 - 500 = 6900$$

$$\begin{array}{r} 7000 \\ - 500 \\ \hline 6500 \end{array}$$

$$\begin{array}{r} 7421 \\ - 460 \\ \hline 6961 \end{array}$$

d) $8822 - 1162$ is about 8000 . The exact answer is 7660

$$8800 - 1200 = 7600$$

$$\begin{array}{r} 9000 \\ - 1000 \\ \hline 8000 \end{array}$$

$$\begin{array}{r} 8822 \\ - 1162 \\ \hline 7660 \end{array}$$

3. Ian plans to read 2000 pages this year. So far, he has read 1054 pages. How many more pages does he need to read? Use the subtracting by renaming strategy.

$$\begin{array}{r} 1999 + 1 \\ 2000 \\ - 1054 \\ \hline 945 + 1 \end{array}$$

946 pages

17

