LETTER HOME

Adding Larger Numbers

Date: _____

Dear Family Member:

To be able to compute, students need to have flexibility with our number system. In this unit, students build on their understandings of place value to develop strategies and methods to add multidigit numbers. Students use this understanding to invent and learn a variety of strategies to solve problems. They also learn estimation strategies to check the reasonableness of their answers and start to analyze problems to identify the most efficient strategy for solving it.

You can help your child with adding multidigit whole numbers using the following ideas:

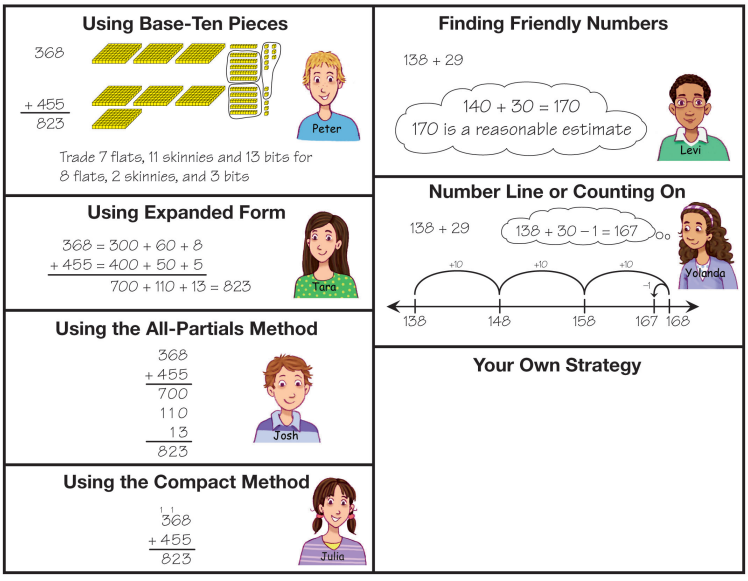
Read Together. The following books compliment the content of this unit and can be used to talk about addition.

- *The 500 Hats of Bartholomew Cubbins* by Dr. Seuss
- *Henry Huggins* by Beverly Cleary
- *A Million Fish . . . More or Less* by Patricia McKissack

Estimate Sums. Ask your child to estimate the cost of two or three items on your grocery bill.

Strategy Menus. Encourage your child to use the Addition Strategies Menu created and referenced in this unit as they are working. The following menu can be found in the *Student Guide* Reference section.

Addition Strategies Menu 3 digits



Play the Digits Game. Play the Digits Game as a family. A player chooses a playing board that is a template for an addition problem. Cards are drawn one at a time from a deck of 0-9 Digit Cards. After each draw, players write a digit in a box on the playing board trying to find the largest sum correctly. Directions are in Lesson 5 in the *Student Activity Book*.

Math Facts and Mental Math

This unit continues the review of the subtraction facts and development of the multiplication facts. Help your child using the activities below.

Subtraction Facts. Students begin a review of all the subtraction facts to maintain and increase proficiency and to learn to apply subtraction strategies to larger numbers.

Unit	Groups	Facts	Strategies Used	Focus
2	1 2	$12-9, 12-10, 13-9, 13-10, 13-4,$ $15-9, 15-10, 15-6, 19-10,$ $14-10, 14-9, 14-5, 17-10, 17-9,$ $11-9, 16-9, 16-7, 16-10$	Using Tens Thinking Addition	Development of mental strategies and number sense
3	3 4	$10-4, 9-4, 11-4, 10-8, 11-8,$ $9-5, 10-6, 11-6, 11-5,$ $10-7, 9-7, 11-7, 10-2, 9-2, 9-3,$ $10-3, 11-3, 9-6$	Making Tens Thinking Addition	
4	5 6	$7-3, 7-5, 7-2, 11-2, 8-6, 5-3,$ $8-2, 4-2, 5-2,$ $6-4, 6-2, 13-5, 8-5, 8-3, 13-8,$ $12-8, 12-4, 12-3$	Counting Thinking Addition	
5	7 8	$14-7, 14-6, 14-8, 12-6, 12-7,$ $12-5, 10-5, 13-7, 13-6,$ $15-7, 16-8, 17-8, 18-9, 18-10,$ $8-4, 7-4, 6-3, 15-8$	Using Doubles Thinking Addition	
6		Review all		Use strategies fluently
7		Review Groups 1–4		
8		Review Groups 5–8		

Figure 1: *Development of subtraction facts in Grade 3*

You can help your child review these facts using the flash cards the teacher sends home or by making a set of flash cards from index cards or scrap paper. Study the facts in small groups each night. As your child goes through the flash cards, put the cards into three stacks: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn.

For the Facts I Need to Learn, work on strategies for figuring them out.

For the Facts I Can Figure Out, use the flash cards to practice the facts for fluency.

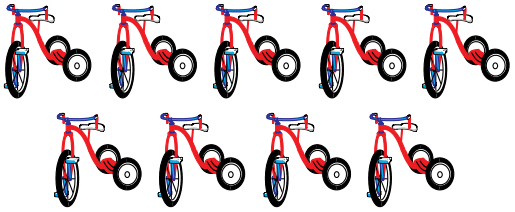
For the Facts I Know Quickly, help your child use strategies to solve problems like these using mental math: 110–4 (practices 10–4), 215–7 (Practices 15–7), 310–12, (practices 10–2)

See the Letter Home in Units 2–5 for more specific examples and strategies.

Multiplication Facts. Students work on developing number sense for the multiplication facts for the 9s in this unit. This will help them remember the facts as they develop proficiency. Ask your child to write a story, draw a picture, and complete number sentences for one or two facts each night. Follow these examples:

Example: $3 \times 9 = \square$

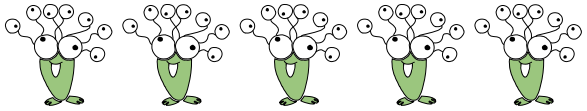
There are 3 wheels on each of 9 tricycles.
There are 27 wheels.



3 wheels × 9 tricycles = 27 wheels

Example: $9 \times \square = 45$

$9 \times \square = 45$



Each monster has 9 eyes. If there are 45 eyes on the monsters there are 5 monsters.

Thank you for taking time to talk with your child about what he or she is doing in math.

Sincerely,

Name _____ Date _____

Unit 6: Home Practice

Part 1 Subtraction Practice

1. A. 15 – 9 = _____ **B.** 17 – 10 = _____

C. 9 – 4 = _____ **D.** 11 – 7 = _____

E. 7 – 2 = _____ **F.** 12 – 3 = _____

G. 14 – 8 = _____ **H.** 18 – 9 = _____

2. Tara had a hard time finding the answer to 1G. How did you find the answer to this subtraction fact? Share your strategy.

Part 2 Add and Subtract

1. Solve the addition and subtraction problems.

A. 156 + 54 = _____ **B.** 232 – 29 = _____

C.
$$\begin{array}{r} 57 \\ +\ 43 \\ \hline \end{array}$$

D.
$$\begin{array}{r} 49 \\ +\ 12 \\ \hline \end{array}$$

2. Sharon works at a flower shop. She received a shipment of roses and carnations. She got 48 roses. She got 60 more carnations than roses.

A. How many carnations did she receive? _____

Write a number sentence for your answer. _____

B. How many flowers did she receive in all? _____

Write a number sentence for your answer. _____

Name _____ Date _____

Part 3 Place Value Practice

1. Mario covered a piece of paper with base-ten pieces. He used 4 flats and 16 skinnies. Beth said, "That's the same as 416 bits." Is Beth correct? Why or why not? Show your answer using base-ten shorthand.

2. The grade school collected 1321 cans of food for a charity. The middle school collected 1299 cans. The high school collected 2219 cans.

A. Which school collected the most cans? _____

B. Which school collected the least? _____

C. List the numbers from largest to smallest.

_____ _____ _____

3. How many cans did the grade school and middle school collect altogether? Solve this problem. Check your answer using a second method.

Name _____ Date _____

Part 4 Time and Money

Show how you solve each problem.

1. Ann Marie has some quarters, nickels, and dimes. She has ten coins in all. Half of them are quarters.

A. What is the most money Ann Marie could have?

B. What is the least amount of money Ann Marie could have?

2. At the zoo, Joe's dad bought 5 snow cones, one for each family member. One snow cone costs $1.26 including tax. How much do 5 snow cones cost?

3. Yolanda and Julia went to the park at 2:45. They stayed and played until 4:30. How long were they at the park?

12 − 9 Group 1	12 −10 Group 1	13 − 9 Group 1
13 −10 Group 1	13 − 4 Group 1	15 − 9 Group 1
15 −10 Group 1	15 − 6 Group 1	19 −10 Group 1

4 Group 1	2 Group 1	3 Group 1
6 Group 1	9 Group 1	3 Group 1
9 Group 1	9 Group 1	5 Group 1

14 − 10 Group 2	14 − 9 Group 2	14 − 5 Group 2
17 − 10 Group 2	17 − 9 Group 2	11 − 9 Group 2
16 − 9 Group 2	16 − 7 Group 2	16 − 10 Group 2

9	5	4
Group 2	Group 2	Group 2
2	8	7
Group 2	Group 2	Group 2
6	9	7
Group 2	Group 2	Group 2

$\begin{array}{r} 10 \\ -\ 4 \\ \hline \end{array}$ Group 3	$\begin{array}{r} 9 \\ -\ 4 \\ \hline \end{array}$ Group 3	$\begin{array}{r} 11 \\ -\ 4 \\ \hline \end{array}$ Group 3
$\begin{array}{r} 10 \\ -\ 8 \\ \hline \end{array}$ Group 3	$\begin{array}{r} 11 \\ -\ 8 \\ \hline \end{array}$ Group 3	$\begin{array}{r} 9 \\ -\ 5 \\ \hline \end{array}$ Group 3
$\begin{array}{r} 10 \\ -\ 6 \\ \hline \end{array}$ Group 3	$\begin{array}{r} 11 \\ -\ 6 \\ \hline \end{array}$ Group 3	$\begin{array}{r} 11 \\ -\ 5 \\ \hline \end{array}$ Group 3

7 Group 3	5 Group 3	6 Group 3
4 Group 3	3 Group 3	2 Group 3
6 Group 3	5 Group 3	4 Group 3

$\begin{array}{r} 10 \\ -\ 7 \\ \hline \end{array}$ Group 4	$\begin{array}{r} 9 \\ -\ 7 \\ \hline \end{array}$ Group 4	$\begin{array}{r} 11 \\ -\ 7 \\ \hline \end{array}$ Group 4
$\begin{array}{r} 10 \\ -\ 2 \\ \hline \end{array}$ Group 4	$\begin{array}{r} 9 \\ -\ 2 \\ \hline \end{array}$ Group 4	$\begin{array}{r} 9 \\ -\ 3 \\ \hline \end{array}$ Group 4
$\begin{array}{r} 10 \\ -\ 3 \\ \hline \end{array}$ Group 4	$\begin{array}{r} 11 \\ -\ 3 \\ \hline \end{array}$ Group 4	$\begin{array}{r} 9 \\ -\ 6 \\ \hline \end{array}$ Group 4

4 Group 4	2 Group 4	3 Group 4
6 Group 4	7 Group 4	8 Group 4
3 Group 4	8 Group 4	7 Group 4

$\begin{array}{r} 4 \\ -\ 2 \\ \hline \end{array}$ Group 5	$\begin{array}{r} 8 \\ -\ 2 \\ \hline \end{array}$ Group 5	$\begin{array}{r} 11 \\ -\ 2 \\ \hline \end{array}$ Group 5
$\begin{array}{r} 7 \\ -\ 2 \\ \hline \end{array}$ Group 5	$\begin{array}{r} 5 \\ -\ 2 \\ \hline \end{array}$ Group 5	$\begin{array}{r} 7 \\ -\ 3 \\ \hline \end{array}$ Group 5
$\begin{array}{r} 5 \\ -\ 3 \\ \hline \end{array}$ Group 5	$\begin{array}{r} 7 \\ -\ 5 \\ \hline \end{array}$ Group 5	$\begin{array}{r} 8 \\ -\ 6 \\ \hline \end{array}$ Group 5

9 Group 5	6 Group 5	2 Group 5
4 Group 5	3 Group 5	5 Group 5
2 Group 5	2 Group 5	2 Group 5

12 − 8 Group 6	12 − 4 Group 6	13 − 5 Group 6
13 − 8 Group 6	8 − 5 Group 6	8 − 3 Group 6
6 − 4 Group 6	6 − 2 Group 6	12 − 3 Group 6

8 Group 6	8 Group 6	4 Group 6
5 Group 6	3 Group 6	5 Group 6
9 Group 6	4 Group 6	2 Group 6

$\begin{array}{r} 14 \\ -\ 7 \\ \hline \end{array}$ Group 7	$\begin{array}{r} 12 \\ -\ 6 \\ \hline \end{array}$ Group 7	$\begin{array}{r} 10 \\ -\ 5 \\ \hline \end{array}$ Group 7
$\begin{array}{r} 13 \\ -\ 7 \\ \hline \end{array}$ Group 7	$\begin{array}{r} 14 \\ -\ 8 \\ \hline \end{array}$ Group 7	$\begin{array}{r} 13 \\ -\ 6 \\ \hline \end{array}$ Group 7
$\begin{array}{r} 12 \\ -\ 5 \\ \hline \end{array}$ Group 7	$\begin{array}{r} 14 \\ -\ 6 \\ \hline \end{array}$ Group 7	$\begin{array}{r} 12 \\ -\ 7 \\ \hline \end{array}$ Group 7

5 Group 7	6 Group 7	7 Group 7
7 Group 7	6 Group 7	6 Group 7
5 Group 7	8 Group 7	7 Group 7

16 − 8 Group 8	18 − 9 Group 8	8 − 4 Group 8
15 − 7 Group 8	15 − 8 Group 8	18 −10 Group 8
7 − 4 Group 8	17 − 8 Group 8	6 − 3 Group 8

4 Group 8	9 Group 8	8 Group 8
8 Group 8	7 Group 8	8 Group 8
3 Group 8	9 Group 8	3 Group 8

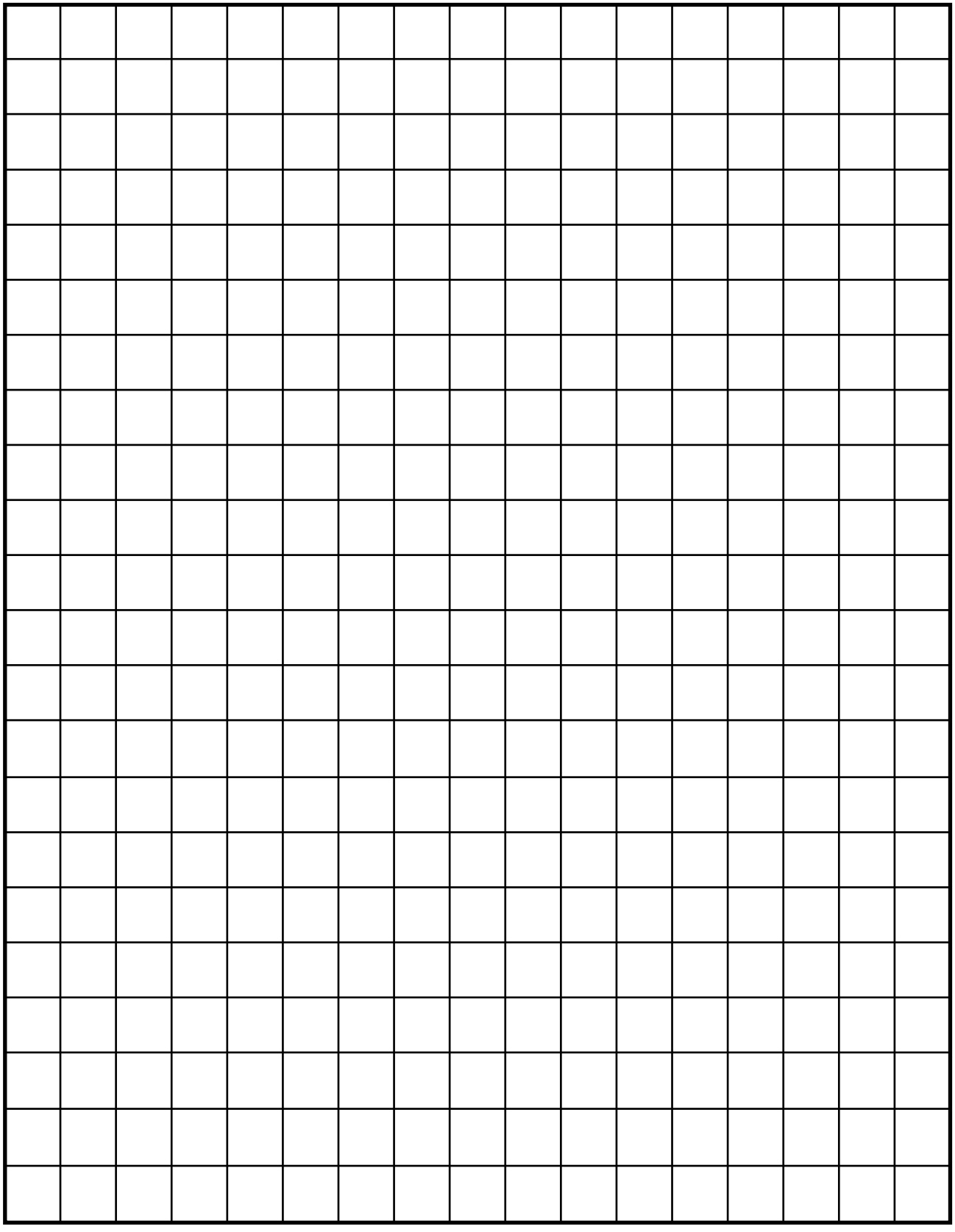
Name _____ Date _____

Subtraction Facts I Know

Circle the subtraction facts you know and can answer quickly. Underline the facts you can figure out using a strategy. Do nothing to the facts you still need to learn.

	A	B	C	D	E	F	G	H
2	4 − 2 = 2	5 − 2 = 3	6 − 2 = 4	7 − 2 = 5	8 − 2 = 6	9 − 2 = 7	10 − 2 = 8	11 − 2 = 9
3	5 − 3 = 2	6 − 3 = 3	7 − 3 = 4	8 − 3 = 5	9 − 3 = 6	10 − 3 = 7	11 − 3 = 8	12 − 3 = 9
4	6 − 4 = 2	7 − 4 = 3	8 − 4 = 4	9 − 4 = 5	10 − 4 = 6	11 − 4 = 7	12 − 4 = 8	13 − 4 = 9
5	7 − 5 = 2	8 − 5 = 3	9 − 5 = 4	10 − 5 = 5	11 − 5 = 6	12 − 5 = 7	13 − 5 = 8	14 − 5 = 9
6	8 − 6 = 2	9 − 6 = 3	10 − 6 = 4	11 − 6 = 5	12 − 6 = 6	13 − 6 = 7	14 − 6 = 8	15 − 6 = 9
7	9 − 7 = 2	10 − 7 = 3	11 − 7 = 4	12 − 7 = 5	13 − 7 = 6	14 − 7 = 7	15 − 7 = 8	16 − 7 = 9
8	10 − 8 = 2	11 − 8 = 3	12 − 8 = 4	13 − 8 = 5	14 − 8 = 6	15 − 8 = 7	16 − 8 = 8	17 − 8 = 9
9	11 − 9 = 2	12 − 9 = 3	13 − 9 = 4	14 − 9 = 5	15 − 9 = 6	16 − 9 = 7	17 − 9 = 8	18 − 9 = 9
10	12 − 10 = 2	13 − 10 = 3	14 − 10 = 4	15 − 10 = 5	16 − 10 = 6	17 − 10 = 7	18 − 10 = 8	19 − 10 = 9

Name _____ Date _____



Name _____ Date _____

Places Please

1. Ms. Alfonso's class put on a play called "500 Hats." Ana sold 45 tickets and Shannon sold 37. How many did they sell altogether? Show or tell how you know.

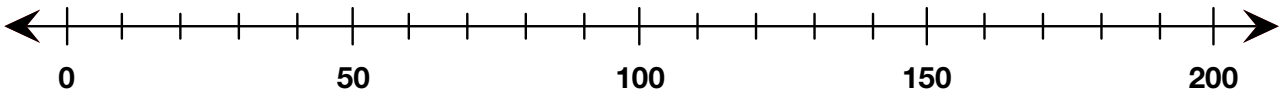
2. Check your answer to Question 1 by solving it another way. Show your method.

3. Three groups made hats for the play. The numbers of hats they made are in the table below. They needed 500 hats. Did they make enough? How do you know?

Group	Number of Hats
Group A	125
Group B	198
Group C	151

Name _____ Date _____

4. **A.** Place these numbers on the number line: 67, 24, 183, 147, 119, 96

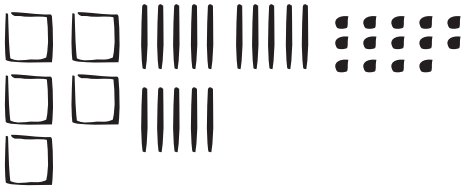


B. For each number give the closest ten and hundred.

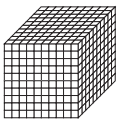
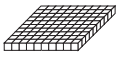
Number	Closest 10	Closest 100
67		
24		
183		

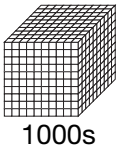
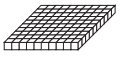
Number	Closest 10	Closest 100
147		
119		
96		

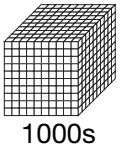
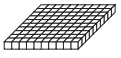
5. Complete the table for each number.

	Standard Form	Base-Ten Shorthand	Expanded Form
	Example 2305		2000 + 300 + 5
A.	3428		
B.			
C.			1000 + 20 + 7

Base-Ten Recording Sheets 2

 1000s	 100s	10s	1s

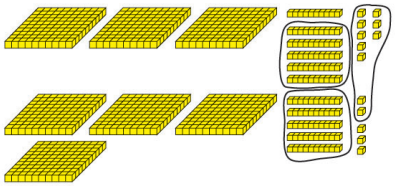
 1000s	 100s	10s	1s

 1000s	 100s	10s	1s

Addition Strategies Menu 3 digits

Using Base-Ten Pieces

368
+ 455
823



Trade 7 flats, 11 skinnies and 13 bits for
8 flats, 2 skinnies, and 3 bits

Using Expanded Form

368 = 300 + 60 + 8
+ 455 = 400 + 50 + 5
700 + 110 + 13 = 823

Using the All-Partials Method

368
+ 455
700
110
13
823

Using the Compact Method

1 1
368
+ 455
823

Finding Friendly Numbers

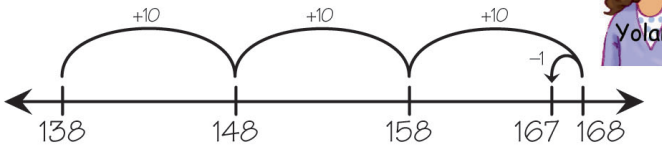
138 + 29

140 + 30 = 170
170 is a reasonable estimate

Number Line or Counting On

138 + 29

138 + 30 − 1 = 167



Your Own Strategy

Name _____ Date _____

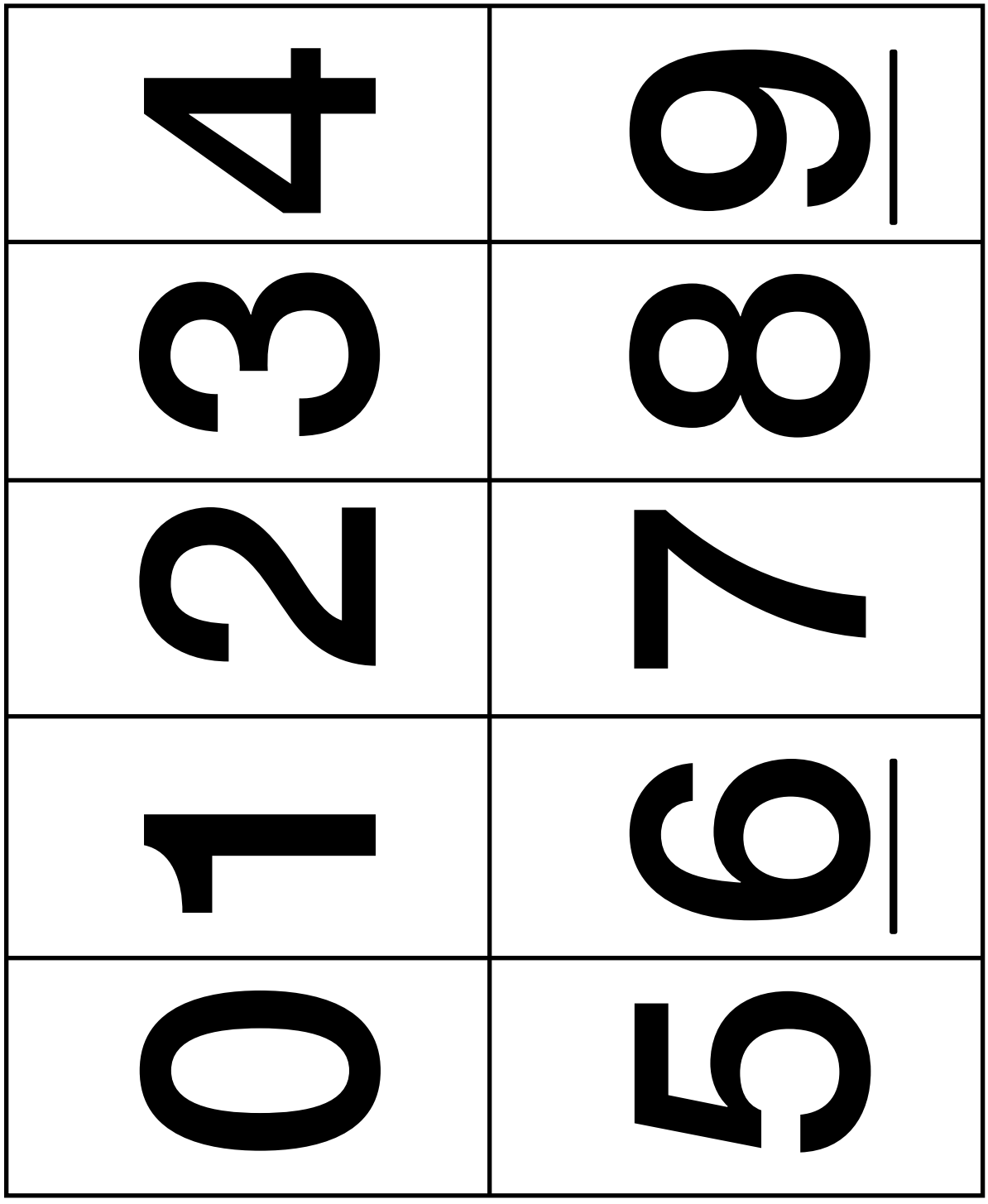
Addition Review Check-In: Q# 7–10 Feedback Box

	Expect-ation	Check In	Comments
Represent and solve addition problems using base-ten pieces. [Q# 8]	E2		
Add 2-digit numbers using mental math strategies. [Q# 7 and 9]	E3		
Add 2-digit numbers using paper-and-pencil methods (all-partials and compact). [Q# 7]	E4		
Estimate sums using mental math strategies. [Q# 10]	E5		

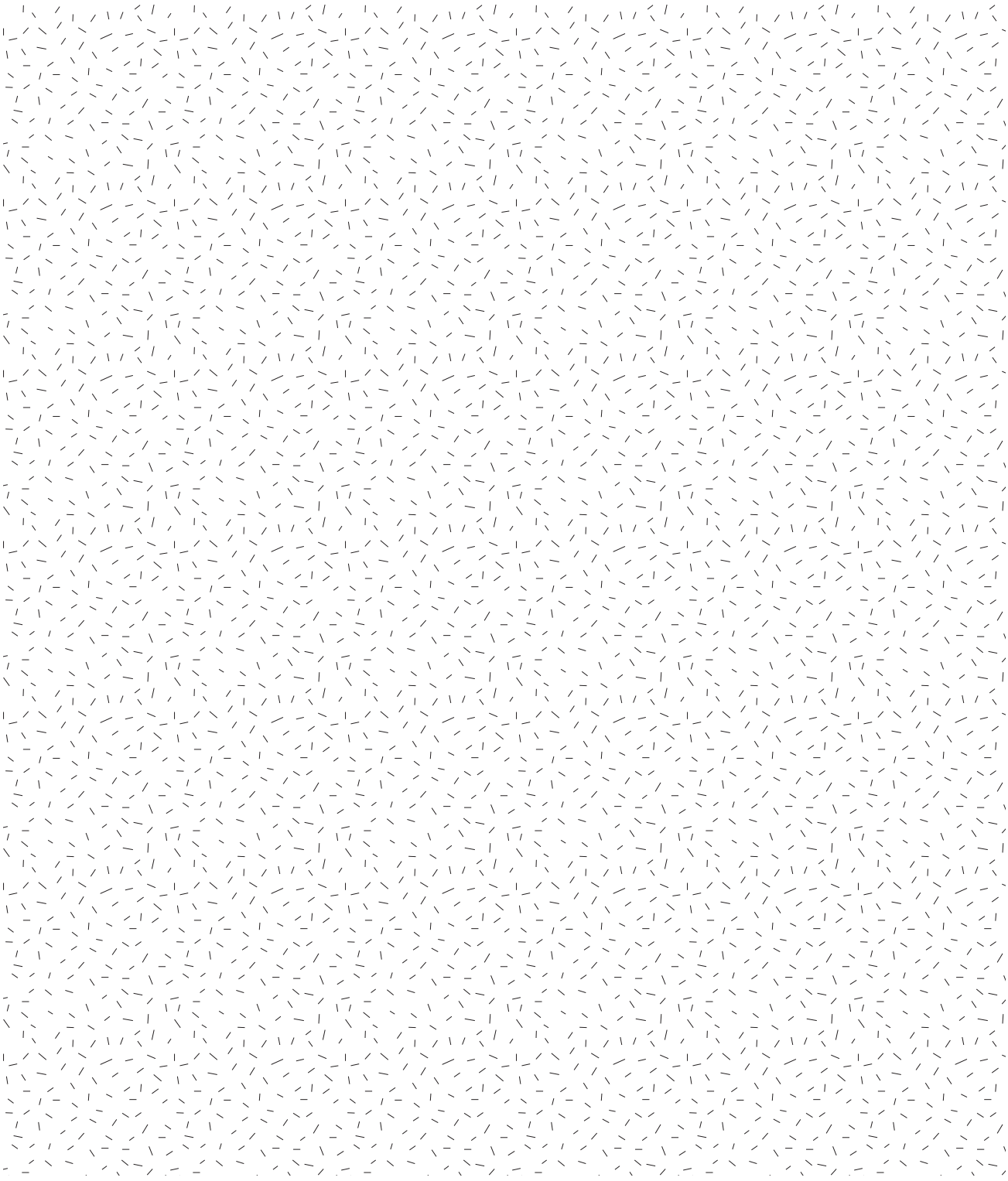
	Yes . . .	Yes, but . . .	No, but . . .	No. . .
MPE3. Check for reason-ableness. I look back at my solution to see if my answer makes sense. If it does not, I try again. [Q# 10]				
MPE5. Show my work. I show or tell how I arrived at my answer so someone else can understand my thinking. [Q# 10]				

Name _____ Date _____

Digit Cards 0–9



Name _____ Date _____



My Addition Strategies Menu for Larger Number

Using Base-Ten Pieces	**Finding Friendly Numbers**
Using Expanded Form	**Number Line or Counting On**
Using the All-Partials Method	**Your Own Strategy**
Using the Compact Method	

Name _____ Date _____

Addition with Larger Numbers
Check-In: Questions 6-11 Feedback Box

	Expect-ation	Check In	Comments
Use and apply place value concepts to make connections among number representations. [Q# 6–11]	**E1**		
Add multidigit numbers using mental math strategies. [Q# 7 and 11]	**E3**		
Add multidigit numbers using paper-and-pencil methods (all-partials and compact). [Q# 6, 9, 11]	**E4**		
Estimate sums using mental math. [Q# 6 and 8]	**E5**		

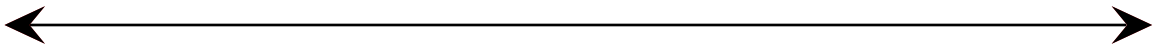
	Yes . . .	**Yes, but . . .**	**No, but . . .**	**No . . .**
MPE3. **Check for reasonable-ness.** I look back at my solution to see if my answer makes sense. If it does not, I try again. [Q# 6–8]				
MPE5. **Show my work.** I show or tell how I arrived at my answer so someone else can understand my thinking. [Q# 7–8]				

Name _____ Date _____

Addition Quiz

Use the *Addition Strategies Menu* in the *Student Guide* Reference section.

1. Solve 265 + 212 using base-ten shorthand or a number line.



2. Fern used the all-partials method to solve the following problem. Explain the step shown by the arrow.

```
  342
+ 169
  400
  100   <--
+  11
  511
```

3. Solve the following problems using any method you choose. Check to see if your answers are reasonable.

A.
```
  33
  59
+ 29
```

B.
```
  536
+ 635
```

4. Show how Question 3A can be solved using a mental math strategy.

5. Explain an estimation strategy that shows your answer to Question 3B is reasonable.

Name _____ Date _____

Addition Quiz Feedback Box	Expect-ation	Check In	Comments
Use and apply place value concepts. [Q# 1–5]	E1		
Represent and solve addition problems using base-ten pieces or number lines. [Q# 1]	E2		
Add multidigit numbers using mental math strategies. [Q# 2–4]	E3		
Add multidigit numbers using paper-and-pencil methods (all-partials and compact). [Q# 3]	E4		
Estimate sums using mental math strategies. [Q# 5]	E5		

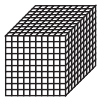
	Yes . . .	Yes, but . . .	No, but . . .	No. . .
MPE3. **Check for reason-ableness.** I look back at my solution to see if my answer makes sense. If it does not, I try again. [Q# 3 and 5]				
MPE5. **Show my work.** I show or tell how I arrived at my answer so someone else can understand my thinking. [Q# 4–5]				

Name _____ Date _____

Addition and Place Value Quiz

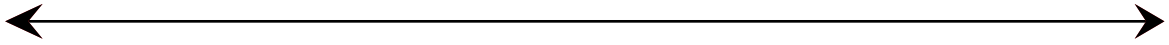
1. Solve this problem using base-ten pieces and a base-ten recording sheet.

$$\begin{array}{r} 264 \\ +\ 377 \\ \hline \end{array}$$

 1000s	 100s	10s	1s	Number Sentences

2. Solve this problem using base-ten pieces and a number line.

$$\begin{array}{r} 268 \\ +\ 152 \\ \hline \end{array}$$



3. Explain an estimation strategy that shows your answer to Question 2 is reasonable.

Name _____ Date _____

4. Solve these problems using any strategy or method you choose. Use the *Addition Strategies Menu* page in the *Student Guide* Reference section. Use a paper-and-pencil method at least once and a mental math strategy at least once. Show your work.

A.
$$\begin{array}{r} 75 \\ +\ 27 \\ \hline \end{array}$$

B.
$$\begin{array}{r} 907 \\ +\ 568 \\ \hline \end{array}$$

C.
$$\begin{array}{r} 6653 \\ +\ 2839 \\ \hline \end{array}$$

5. Explain an estimation strategy that shows your answer to Question 4C is reasonable.

6. Kris solved 363 + 458 using the compact method. What does the 1 above the 3 mean?

$$\begin{array}{r} {\scriptstyle 1\,1} \\ 363 \\ +\ 458 \\ \hline 821 \end{array}$$

Name _____ Date _____

7. Ana solved this problem using the all-partials method. Explain Ana's step by the arrow.

$$\begin{array}{r} 363 \\ +\ 468 \\ \hline 700 \\ 120 \leftarrow \\ +\ 11 \\ \hline 831 \end{array}$$

8. Solve this problem using a mental-math strategy and a paper-and-pencil method. Circle the strategy you think is the best choice for this problem. Explain.

$$\begin{array}{r} 425 \\ +\ 206 \\ \hline \end{array}$$

Addition and Place Value Quiz Feedback Box	Expectation	Check In	Comments
Represent and solve addition problems using base-ten pieces and number lines. [Q# 1–2]	**E2**		
Add using mental math strategies. [Q# 4 and 8]	**E3**		
Add using paper-and-pencil methods. [Q# 2, 4, 6–8]	**E4**		
Estimate sums using mental math strategies. [Q# 2–3, 5]	**E5**		