Student Activity Book

**Palindrome Recording Chart
(SAB pp. 199–200)
Questions A–H**

A. 110

B. 110

C. 33

D. 176

E. 99

F. 44

G. Problems will vary. A mental math strategy for A: 19 + 91 = 20 + 90 = 110.

H. Problems and methods will vary. 97 + 79 = 160 + 16 = 176.

Name _____ Date _____

Palindrome Recording Chart

Choose a color for each kind of palindrome. Find and color each kind in the chart.

☐ palindrome ☐ 1 step ☐ 2 step ☐ 3 step
☐ 4 step ☐ 5 step ☐ 6 step

0	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

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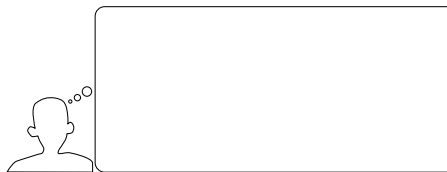

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Palindromes and Addition Practice

Solve the following problems. Be prepared to show or tell your strategy.
- **Which problems can you solve in your head?**
- **Which problems can you solve by sketching a number line or a few quick notes?**
- **Which problems do you need to use pencil and paper to solve?**

A. 19 + 91   **B.** 64 + 46   **C.** 12 + 21

D. 97 + 79   **E.** 45 + 54   **F.** 31 + 13

G. Choose one problem and show how you used a mental math strategy.

H. Choose one problem and show how you used a paper-and-pencil method.

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Strategies to Add

Using Base-Ten Pieces

✓ **Self-Check: Question 1**

1. Solve 26 + 13 using base-ten pieces. Record your work with base-ten shorthand and the recording sheet.

1000s	100s	10s	1s	Number Sentences

Use the Workshop Menu to choose practice with using base-ten pieces.

Can I Do This?	Working On It! I could use some extra help.	Getting It! I just need some more practice.	Got It! I'm ready for a challenge.
Use the base-ten pieces to add.	★ Q# 2–4, 8–9	● Q# 4–9	■ Q# 4, 6–9

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Solve using base-ten pieces. Record your work with base-ten shorthand and the recording sheet.

★**2.** 27 + 32

1000s	100s	10s	1s	Number Sentences

★**3.** 68 + 22

1000s	100s	10s	1s	Number Sentences

★●■**4.** 154 + 28

1000s	100s	10s	1s	Number Sentences

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Strategies to Add (SAB pp. 203–214)
Questions 1–21

1.

1000s	100s	10s	1s	Number Sentences
	2	6	20 +
+	1	3	10 +
	3	9	30 + 9 = 39

2.

1000s	100s	10s	1s	Number Sentences
	2	7	20 +
+	3	2	30 +
	5	9	50 +

3.

1000s	100s	10s	1s	Number Sentences
	6	8	60 +
+	2	2	20 +
	8	10	80 +
	9	0	90 +

4.

1000s	100s	10s	1s	Number Sentences
	1	5	4	100 + 50 + 4
+		2	8	20 + 8
	1	7	12	100 + 70 + 12
	1	8	2	100 + 80 + 2
				= 182

5.

1000s	100s	10s	1s	Number Sentences
	3	1	8	$300 + 10 + 8$
+	4	5	5	$400 + 50 + 5$
	7	6	13	$700 + 60 + 13$
	7	7	3	$700 + 70 + 3$
				$= 773$
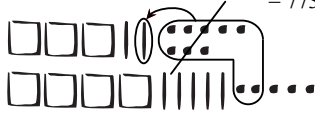
6.

1000s	100s	10s	1s	Number Sentences
	2	9	7	$200 + 90 + 7$
+		8	8	$80 + 8$
	2	17	15	$200 + 170 + 15$
	2	18	5	$200 + 180 + 5$
	3	8	5	$300 + 80 + 5$
				$= 385$

7.
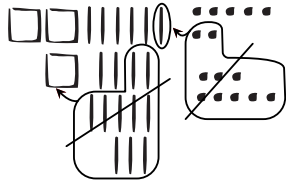
1000s	100s	10s	1s	Number Sentences
	6	8	6	$600 + 80 + 6$
+	5	8	7	$500 + 80 + 7$
	11	16	13	$1100 + 160 + 13$
	11	17	3	$1100 + 170 + 3$
	12	7	3	$1200 + 70 + 3$
1	2	7	3	$= 1273$
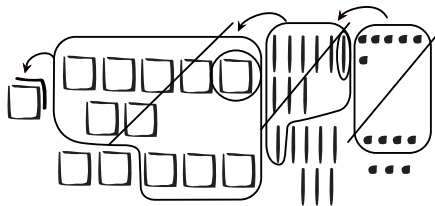
8. Answers will vary. Possible response: I agree with Tara. Tara thinks about the base-ten pieces she needs to represent the numbers she is adding together. She separates and groups the pieces by hundreds, tens, and ones. Then she combines the hundreds, tens, and ones to get an answer. That is like using expanded form because each of the numbers she needs to add together are broken apart into hundreds, tens, and ones, and then the hundreds, tens, and ones are combined to get an answer.

9. Problems will vary. One possible solution is given for Question 7:

$$686 = 600 + 80 + 6$$
$$+ 587 = 500 + 80 + 7$$
$$1100 + 160 + 13 = 1273$$

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5. 318
+ 455

1000s	100s	10s	1s	Number Sentences

6. 297
+ 88

1000s	100s	10s	1s	Number Sentences

7. 686 + 587

1000s	100s	10s	1s	Number Sentences

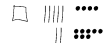Workshop: Addition   SAB · Grade 3 · Unit 6 · Lesson 6   205

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★●■**8.** Look at Tara's solution to $154 + 28$.

I thought about base-ten pieces.

$100 + 50 + 20 + 4 + 8 = 182$

This is a lot like using expanded form.

Tara

Tara thinks her strategy is similar to using expanded form.

$$154 = 100 + 50 + 4$$
$$+ 28 \quad 20 + 8$$
$$100 + 70 + 12 = 182$$

Do you agree with Tara? Why or why not?

★●■**9.** Choose a problem from Questions 1–7 to solve using expanded form. Show your work below.
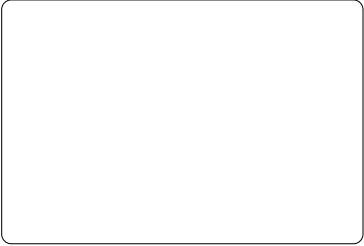
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Using Mental Math Strategies

✓ **Self-Check: Questions 10–11**

10. Use a mental math strategy to solve 64 + 59. Explain your strategy.

11. Use a number line to show how to solve 458 + 302.

Use the Workshop Menu to choose practice with using mental math strategies to add.

Can I Do This?	Working On It! I could use some extra help.	Getting It! I just need some more practice.	Got It! I'm ready for a challenge.
Use mental math strategies to add.	★ Q# 12–14, 15E–G	● Q# 13–15	■ Q# 14–15

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10. Mental math strategies will vary. One possible solution for 64 + 59: Think of 63 + 60. 60 + 60 + 3 = 123.

11. Possible response:
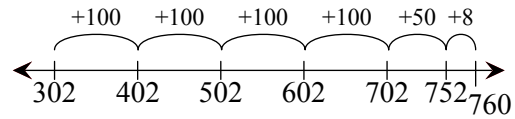
12. A. Grace's method for 132 + 98: Take the 2 from the 132 and put it with 98. Now the problem is 130 + 100 = 230.

B. Peter's method for 504 + 75: Think about money. 500 + 75 = 575 + 4 = 579.

C. Ana's method for 352 + 98: Think about a number line. Start at 352 and hop forward 100 to get to 452 and then hop back 2 to 450.

D. Frank's method for 350 + 250: Separate out the hundreds and add 300 + 200. That is 500. Then 50 + 50 = 100. 500 + 100 = 600.

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★**12.** Ms. Alfonso challenged the class to use a mental math strategy to solve each of the problems below. Grace and her classmates recorded their mental math strategies. Solve the problem next to each one using a similar strategy. Explain your thinking to your partner.

341 + 99 =

"I took the 1 from the 341 and put it with the 99 right away. Now the problem is 340 + 100, which is easy, 440"

Grace

A. 132 + 98 =

157 + 25=

"I thought about money."

150 + 25 = 175 + 7 = 182

Peter

B. 504 + 75 =

328 + 50 =

"I made notes, but I pictured the number line to count on. I started at 328 and hopped +2 to 330. It is easier to hop on tens. After five +10 hops I land on 380. Hop back 2 to 378. 328 + 50 = 378

Ana

C. 352 + 98 =

220 + 160 =

"I separated out the hundreds. I added 200 + 100. That is 300. Then 20 + 60 = 80, so my answer is 300 + 80 = 380."

200 + 20
100 + 60
300 + 80

Frank

D. 350 + 250 =

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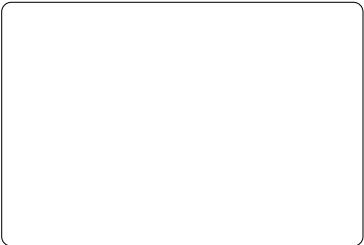
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13. Mental math strategies will vary. One possible solution for 548 + 132: Take 2 from 132 and add it to 548 to make 550. 550 + 130 = 680.

14. Mental math strategies will vary. One possible solution for 732 + 198: Take 2 from 732 and add it to 198 to make 200. 730 + 200 = 930.

15. A. 500

B. 1102

C. 338

D. 970

E. 1044

F. 1765

G. Problems and strategies will vary. One possible strategy for 325 + 175: Think about money and add 75 + 25 to make 100. Then add 300 + 100 + 100 = 500.

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★●**13.** Use a mental math strategy to solve 548 + 132. Explain your strategy to your partner. Make some notes to record your partner's strategy below. Include your partner's name.

★●■**14.** Use a mental math strategy to solve 732 + 198. Explain your strategy to your partner. Make some notes to record your partner's strategy below. Include your partner's name.

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15. Solve the following problems using a mental math strategy. Record your answer and explain your strategy to your partner. You do not need to write your strategy down, but you can jot down some notes.

●■ **A.** 325 + 175 =   ●■ **B.** 604 + 498 =

●■ **C.** 130 + 208 =   ●■ **D.** 849 + 121 =

★●■ **E.** 747 + 297 =   ★●■ **F.** 998 + 767 =

★●■ **G.** Show how you solved one of the problems above by describing your strategy in the thought bubble below.

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Using Different Methods

✓ **Self-Check: Question 16**

Use the *Addition Strategies Menu.*

16. Solve 48 + 37 using three different strategies or methods.

Use the Workshop menu to choose practice with addition methods.

Can I Do This?	Working On It! I could use some extra help.	Getting It! I just need some more practice.	Got It! I'm ready for a challenge.
Use different methods to add multidigit numbers.	★Q# 17–20 Use each of these methods at least once: • base-ten pieces • expanded form • all-partials	●Q# 20–21 Use each of these methods at least once: • all-partials • expanded form • compact method	■Q# 20–21 Use each of these methods at least once: • all-partials • compact method

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★**17.** Here is how Sam solved 343 + 276.

Use the same method to solve 83 + 738.

343
+ 276

300 + 200 + 100 + 10 + 9 = 619

★**18.** Here is how Nisha solved 328 + 172.

Use the same method to solve 473 + 279.

328 = 300 + 20 + 8
+ 172 = 100 + 70 + 2
        400 + 90 + 10 = 500

★**19.** Here is how Josh solved 329 + 476.

Use the same method to solve 847 + 278.

329
+ 476
700
90
15
805

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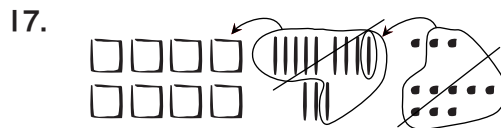
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16. Strategies and methods will vary.
Three possible solutions for 48 + 37:

Use mental math: Take 2 from 37 to make 50, and $50 + 35 = 85$.

Use all-partials:

$$
\begin{array}{r}
48 \\
+\ 37 \\
\hline
70 \\
15 \\
\hline
85
\end{array}
$$

Use expanded form:

$$
\begin{array}{rl}
48 & = 40 + 8 \\
+\ 37 & = 30 + 7 \\
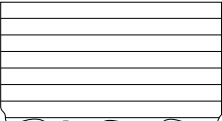\hline
& 70 + 15 = 85
\end{array}
$$

17.

$$800 + 20 + 1 = 821$$

18.

$$
\begin{array}{rl}
473 & = 400 + 70 + 3 \\
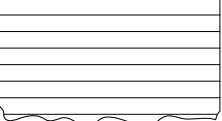+\ 279 & = 200 + 70 + 9 \\
\hline
& 600 + 140 + 12 = 752
\end{array}
$$

19.

$$
\begin{array}{r}
847 \\
+\ 278 \\
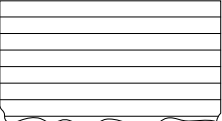\hline
1000 \\
110 \\
15 \\
\hline
1125
\end{array}
$$

20. Strategies and methods will vary. One possible solution strategy is given for each problem.

A. 205; All-partials:

$$
\begin{array}{r}
137 \\
+\ 68 \\
\hline
15 \\
90 \\
100 \\
\hline
205
\end{array}
$$

B. 112; Compact method:

$$
\begin{array}{r}
1 \\
66 \\
+\ 46 \\
\hline
112
\end{array}
$$

C. 81; Mental math for $35 + 46$: Separate the tens and add $30 + 40 = 70$. Add the ones, $5 + 6 = 11$. $70 + 11 = 81$.

D. 656; Expanded form:

$$
\begin{array}{rl}
446 & = 400 + 40 + 6 \\
+\ 210 & = 200 + 10 \\
\hline
& 600 + 50 + 6 = 656
\end{array}
$$

E. Use base-ten pieces:

$$300 + 50 + 6 = 356$$

F. 3884; Compact method:

$$
\begin{array}{r}
1 \\
1448 \\
+\ 2436 \\
\hline
3884
\end{array}
$$

G. 69; Use a number line for $23 + 46$: Start at 23 and hop forward four +10 hops to 63. Then hop 6 more to 69.

+10   +10   +10   +10   +6
23   33   43   53   63   69
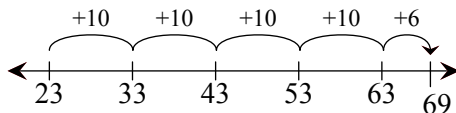
H. 5784; All-partials:

$$
\begin{array}{r}
2558 \\
+\ 3226 \\
\hline
5000 \\
700 \\
70 \\
14 \\
\hline
5784
\end{array}
$$

Name _____   Date _____

★●■**20.** Use the Workshop Menu to choose your own strategies and methods to solve the following problems. Use the *Addition Strategies Menu* as a guide.

A. $137 + 68$

B.
$$
\begin{array}{r}
66 \\
+\ 46
\end{array}
$$

C. $35 + 46$

D. $446 + 210$

E. $232 + 124$

F.
$$
\begin{array}{r}
1448 \\
+2436
\end{array}
$$

G.
$$
\begin{array}{r}
23 \\
+\ 46
\end{array}
$$

H. $2558 + 3226$

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●■**21.** • Using the *Addition Strategies Menu* as a guide, show how to solve each problem using two different strategies. Compare your strategies. Circle the one you like best.

• Use a mental math strategy at least three times.

• Use each paper-and-pencil strategy at least once.

One Strategy	Another Strategy
A. 375 + 427 =	
B. 498 + 204 =	
C. 127 + 786	
D. 366 + 252	

Did you try all of the strategies on the *Addition Strategies Menu*?

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21. Strategy solutions will vary.

   A. 802

   B. 702

   C. 913

   D. 618