2.4c Rename tens

Objectives
- Rename tens to add within 1,000.
- Solve word problems.

Materials
- Place-value discs
- Place-value charts

PRIMARY digital

Reinforcement 2.4c

Common Core Standards
2.OA.1
2.NBT.7
2.NBT.9

Mathematical Practices
MP.1
MP.2
MP.3
MP.4
MP.5
MP.6
MP.7
MP.8

Renaming in the tens

- Write the expression 73 + 82.
- Ask students to determine whether the answer will be more than 100 before adding. They should be able to look at the tens and realize that adding tens will result in more than 10 tens.
- Rewrite it vertically and show the two numbers with place-value discs.
- Ask students to add the ones and where they should write the answer (under the line, in the ones place).
- Ask students to add the tens.
- Discuss and emphasize the following:
  7 tens + 8 tens. The answer is not 15, it is 15 tens. We can split 15 tens into 10 tens and 5 tens. Since 10 tens is 1 hundred, 15 tens is also 1 hundred 5 tens.
- With the discs, replace the 15 tens with 1 hundred and 5 tens.
  We rename 15 tens as 1 hundred 5 tens.
- Ask students where you should write the two digits. Lead students to see that:
 *There are no hundreds left to add, so they both can go under the line.*

73 + 82
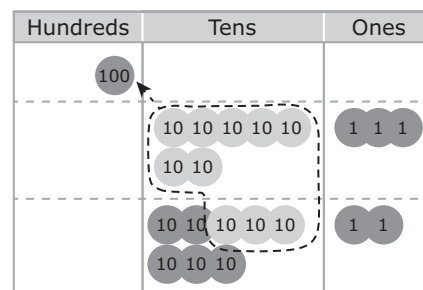
$$
\begin{array}{r} 7\ 3 \\ +\ \ 8\ 2 \\ \hline \end{array}
\rightarrow
\begin{array}{r} 7\ 3 \\ +\ \ 8\ 2 \\ \hline 5 \end{array}
\rightarrow
\begin{array}{r} 7\ 3 \\ +\ \ 8\ 2 \\ \hline 1\ 5\ 5 \end{array}
$$

- Repeat with 373 + 82.
- Discuss and emphasize the following:
  When we add the tens to get 1 hundred 5 tens, there are still hundreds to add, so the 1 hundred we get from adding tens is not the final number of hundreds. We record this hundred by writing the 1 above the hundreds place. Then we can add that hundred to the rest of the hundreds to get the final number of hundreds, which we write below the line.

373 + 82
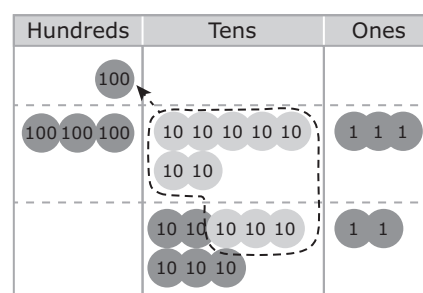
$$
\begin{array}{r} 3\ 7\ 3 \\ +\ \ \ 8\ 2 \\ \hline 5 \end{array}
\rightarrow
\begin{array}{r} {}^{1}\ \ \ \\ 3\ 7\ 3 \\ +\ \ \ 8\ 2 \\ \hline 5\ 5 \end{array}
\rightarrow
\begin{array}{r} {}^{1}\ \ \ \\ 3\ 7\ 3 \\ +\ \ \ 8\ 2 \\ \hline 4\ 5\ 5 \end{array}
$$

• Repeat with 373 + 482. Emphasize that we first fill in the ones place under the line with the total ones, then the tens place with the total tens, then the hundreds place with the total hundreds.	373 + 482 $\begin{array}{r} 3\ 7\ 3 \\ +\ 4\ 8\ 2 \\ \hline 5 \end{array}$ $\rightarrow$ $\begin{array}{r} {\scriptstyle 1} \\ 3\ 7\ 3 \\ +\ 4\ 8\ 2 \\ \hline 5\ 5 \end{array}$ $\rightarrow$ $\begin{array}{r} {\scriptstyle 1} \\ 3\ 7\ 3 \\ +\ 4\ 8\ 2 \\ \hline 8\ 5\ 5 \end{array}$

Assessment   Textbook, pp. 54–55

• Tasks 11–13: Students can use place-value discs as needed. Have them practiced renaming using the place-value discs before verifying using the algorithm.
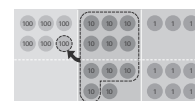
Answers:
11. 619
12. (a) 352   (b) 644   (c) 448
     (d) 724   (e) 500   (f) 309
13. greater than 400
     527
14. (a) 617   (b) 826   (c) 608
     (d) 808   (e) 618   (f) 929

11. Add 563 and 56.

$\begin{array}{r} 5\ 6\ 3 \\ +\ \ \ \ 5\ 6 \\ \hline \end{array}$

Change 10 tens for 1 hundred.

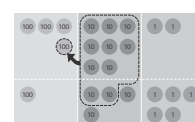12. Find the value of
(a) 292 + 60   (b) 574 + 70
(c) 385 + 63   (d) 630 + 94
(e) 420 + 80   (f) 279 + 30

13. Add 382 and 145.
Will the answer be greater than or less than 400?

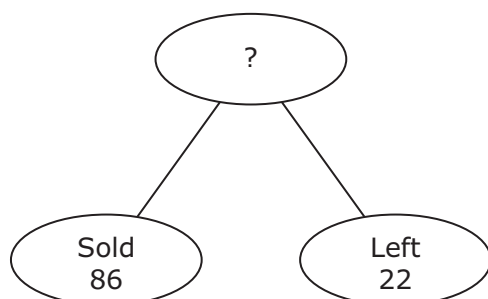$\begin{array}{r} 3\ 8\ 2 \\ +\ \ 1\ 4\ 5 \\ \hline \end{array}$

54

14. Find the value of
(a) 454 + 163   (b) 670 + 156   (c) 257 + 351
(d) 588 + 220   (e) 363 + 255   (f) 790 + 139

• Task 15: There are two parts, the number of bags sold and the number left over. The problem is asking us to find the whole, the number she started with. You can draw a number bond to help them interpret the problem if needed.

```
        (  ?  )
        /     \
   (Sold)    (Left)
   ( 86 )    ( 22 )
```

• Task 16: This problem is routine and should not pose any difficulty.
Low: You may have to guide the students through these problems. They can act them out using place-value discs.

Answers:
15. 108
     108
16. 325
     325

15. After selling 86 bags of popcorn, Ms. Miguel had 22 bags of popcorn left.
How many bags of popcorn did she have at first?

86 + 22 = ▢

$\begin{array}{r} 8\ 6 \\ +\ \ 2\ 2 \\ \hline \end{array}$

She had ▢ bags of popcorn at first.

16. A tailor bought 240 white buttons and 85 black buttons.
How many buttons did he buy altogether?

240 + 85 = ▢

$\begin{array}{r} 2\ 4\ 0 \\ +\ \ \ \ 8\ 5 \\ \hline \end{array}$

He bought ▢ buttons.

55   Exercise 12, pages 58–60

Practice	Workbook Exercise 12, pp. 58–60
• Have students complete Workbook Exercise 12 on pages 58–60.	

EXERCISE 12

1. Add.

```
6 9 1        3 5 2         5 8 1
+ 1 7 4      +   8 3       + 2 4 5
  8 6 5        4 3 5         8 2 6

  1 3 5        6 9 3          4 6 5
+ 1 9 2      +   9 4        +   5 4
  3 2 7        7 8 7          5 1 9

  4 8 0        2 5 6          2 7 1
+ 4 2 0      + 3 7 1        +   4 7
  9 0 0        6 2 7          3 1 8
```
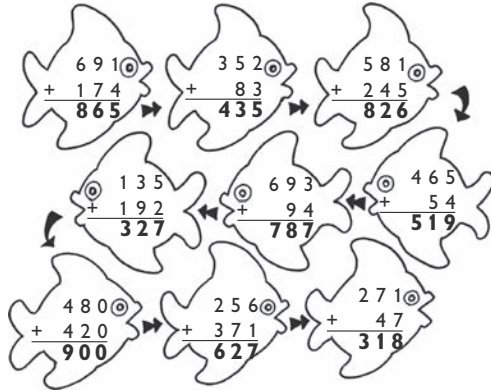
Join the dots by following the order of the answers above.

START

519 — 787 — 826 — 327 — 900 — 627 — 318 — 865 — 435
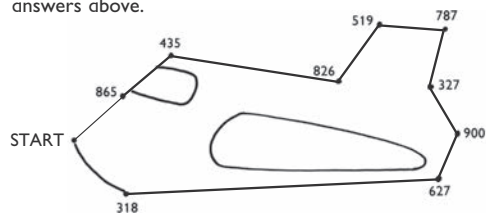
You will get a picture of an **airplane**.

2. Add.

3 6 + 5 5 **9 1**	2 4 9 + 7 0 **3 1 9**	3 1 7 + 3 8 **3 5 5**
1 2 8 + 5 3 **1 8 1**	4 6 1 + 6 2 **5 2 3**	2 0 6 + 2 7 4 **4 8 0**
5 4 3 + 2 8 1 **8 2 4**	1 5 2 + 2 5 1 **4 0 3**	6 0 7 + 2 4 5 **8 5 2**

Which animal is Alice's pet?
Color the spaces that contain the answers to find out.

403   253
181   523   19
428   652   65   852
91   824   65
311   480   679
319 355
136   375   526   280
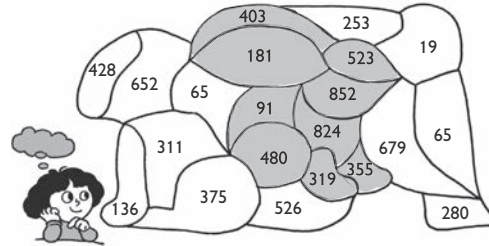
2.4c

Group game

Purpose: Practice renaming ones or tens when adding.

Materials
- Number cubes 4–9
- Paper with three columns, one each for ones, tens, and hundreds

Procedure
- Each player rolls the number cube once and writes the number down in either the ones or the tens column.
- If the number is in the tens column, the player writes a 0 in the ones column.
- Each player rolls the cube a second time, decides whether it is to be tens or ones, and adds it to the previous number.
- Each player rolls the cube a third time, decides whether the number is to be tens or ones, and adds it to the previous sum.
- The game continues until each player has rolled the cube 10 times. The goal is for the final sum to be as close to 500 as possible.

1st roll, 6		6	0
2nd roll, 5	+	5	0
	1	1	0
3rd roll, 8		8	0
	1	9	0
4th roll, 9		9	0
	2	8	0
5th roll, 5		5	0
	3	3	0
6th roll, 7		7	0
	4	0	0
7th roll, 8		8	0
	4	8	0
8th roll, 9			9
	4	8	9
9th roll, 7			7
	4	9	6
10th roll, 6			6
	5	0	2

2.4d

Group game

Purpose: Practice addition of 3-digit numbers.

Material
- Number cards 1–9, 4 sets (or playing cards A–9)

Procedure
- Deal six cards to each player.
- Each player must arrange the cards into two 3-digit numbers and add these together.
- The player with the lowest total wins. (After a few hands, you can stop the game and discuss ways to arrange the digits into the two numbers. In order to get the lowest total, the two lowest numbers need to be used for the hundreds, the next two lowest numbers for the tens, and the greatest two numbers for the ones. You can have students experiment to see if it matters which number gets which of the two digits. For example, if the cards drawn are 5, 1, 3, 5, 4, and 9, 1 and 3 are lowest so they should be used for hundreds. 4 and 5 should be used for tens, and 5 and 9 for ones. So, the smallest possible total is 504.)

```
    1   1
    1   4   5
+   3   5   9
    5   0   4
```

Enrichment

2.4e

1. (a)
$$
\begin{array}{r}
2\ 8\ 4 \\
+\ \Box\ 7\ \Box \\
\hline
9\ 5\ 4
\end{array}
$$

(b)
$$
\begin{array}{r}
2\ 4\ 9 \\
+\ 1\ \Box\ 0 \\
\hline
4\ 3\ 9
\end{array}
$$

(c)
$$
\begin{array}{r}
2\ \Box\ 3 \\
+\ 2\ 2\ \Box \\
\hline
4\ 3\ 7
\end{array}
$$

(d)
$$
\begin{array}{r}
6\ \Box\ \Box \\
+\ 1\ 3\ 6 \\
\hline
\Box\ 6\ 2
\end{array}
$$

2. Continue the patterns.
    (a) 1, 2, 4, 8, 16, 32, _____, _____, _____
    (b) 1, 3, 7, 15, 31, 63, _____, _____, _____

3. Write >, <, or = in the ◯.
    (a) 456 + 650 ◯ 456 + 560
    (b) 452 + 316 ◯ 356 + 412
    (c) 485 + 146 + 342 ◯ 342 + 156 + 465