

### Part 3 – Addition Within 100

In unit 3 (Numbers to 40) students learned to add a 1-digit number to a 2-digit number with or without renaming. This is reviewed here and extended to numbers within 100.

Students should recognize when adding a 1-digit number to another number will increase the tens, that is, whether the sum of the ones is greater than ten. They can add either by recalling the addition fact, or by using the “make 10” strategy.

When the 1-digit number is 1, 2, or 3, they may add by counting on by ones.

When the 2-digit number is tens, they can simply write the answer using place-value concept.

In this section, students will learn a new skill, adding a 2-digit number to a 2-digit number.

First they will learn to add tens.

Then they will add a 2-digit number by simply adding the tens first, then adding the ones.

You can draw arrow diagrams to illustrate the process. Remind your student that addition can be done in any order, and encourage her to add the smaller number to the larger.

The formal algorithm for adding numbers, in which the numbers are written in vertical form, aligning the place-values, and starting by adding the ones in the ones column and then the tens in the tens column, renaming if necessary, will be taught in *Primary Mathematics 2A*. You may want to show

$$67 + 8 = 60 + 15 = 75$$

$$\begin{array}{r} / \backslash \\ 60 \quad 7 \end{array}$$

$$67 + 8 = 70 + 5 = 75$$

$$\begin{array}{r} / \backslash \\ 3 \quad 5 \end{array}$$

$$68 + 3 = 71$$

$$69, 70, 71$$

$$30 + 60 = 90$$

$$(3 + 6 = 9, 3 \text{ tens} + 6 \text{ tens} = 9 \text{ tens})$$

$$32 + 60 = 92$$

$$\begin{array}{r} / \backslash \\ 2 \quad 30 \end{array}$$

$$32 + 64 = 64 + 32 = 96$$

$$\begin{array}{r} / \backslash \\ 30 \quad 2 \\ + 30 \quad + 2 \\ 64 \longrightarrow 94 \longrightarrow 96 \end{array}$$

$$57 + 24 = 57 + 24 = 77 + 4 = 81$$

$$\begin{array}{r} / \backslash \\ 20 \quad 4 \\ + 20 \quad + 4 \\ 57 \longrightarrow 77 \longrightarrow 81 \end{array}$$

**(1) Add ones without renaming****Textbook**

Page 77

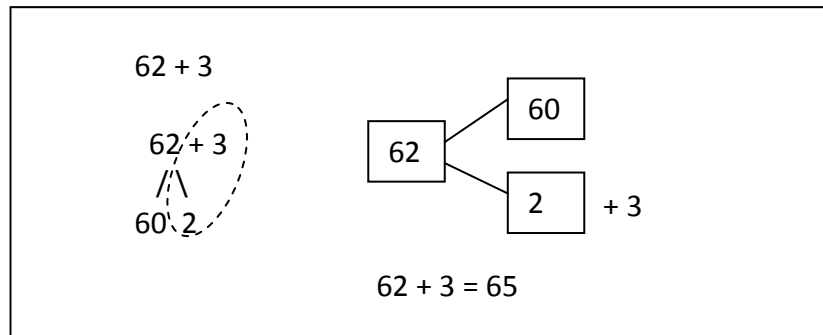
Task 1, p. 78

1.  $65 + 2 = 67$ **Teaching Activities**

Write the addition expression  $62 + 3$  and ask your student to solve it. Discuss two methods:

- ⇒ Count on by ones from 62: 63, 64, 65
- ⇒ Add the ones

Illustrate adding the ones with number bonds and with base-10 material if necessary. Show how 62 can be split into 60 and 2, and the 2 added to 3 to give 5 ones, so that the total is now 60 and 5, or 65. You can show the number bonds similar to how they are shown in the textbook (see p. 77) or sideways, showing 3 being added to the 2.



Write the expression:  $74 + 5$ . Ask your student to solve it. Point out that when adding ones greater than 3, it is harder to keep track of how many ones have been added (without fingers) and it takes longer than simply remembering  $4 + 5 = 9$  and adding ones first.

$$\begin{array}{r} 74 + 5 = 79 \\ / \backslash \\ 70 \quad 9 \end{array}$$

Repeat with other examples as needed.

Discuss textbook p. 77 and task 1 on p. 78.

If your student needs additional review, refer back to the lessons under part 3 of unit 3. You can use the same teaching activities for addition, but use numbers past 40.

**Workbook**

Exercise 57

1. (a) 27  
(b) 37  
(c) 19  
(d) 48
2. 37  
7; 27      7; 37  
8; 48      9; 59  
6; 66      9; 79

**(4) Add 2-digit numbers****Textbook**

Tasks 5-6, p. 81

5.  $32 + 16 = 48$

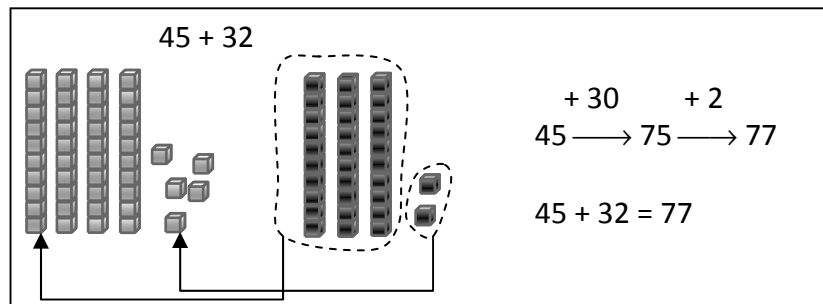
6.  $43 + 35 = 78$

**Teaching Activities**

Write the expression:  $45 + 32$ . Illustrate with base-10 material.

Show your student that we can first add the tens (by moving the tens over) and then the ones (by moving the ones over).

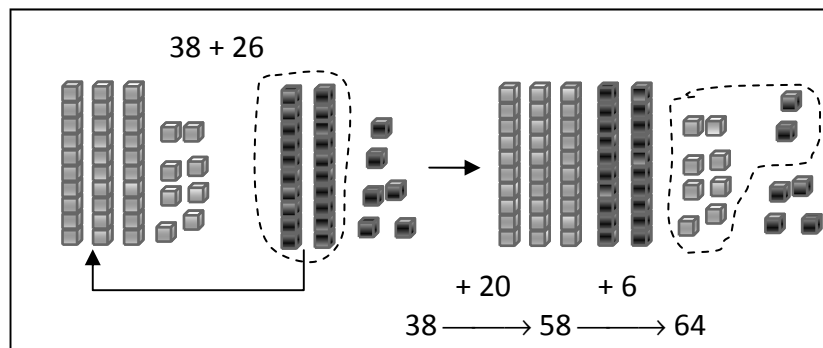
Draw an arrow diagram as you ask your student for the answer to  $45 + 30$ , and then  $45 + 32$ .



Repeat with  $28 + 61$ . Point out that it is often easier to add the smaller number to the larger number, so we can solve this as  $61 + 20 + 8$ .

Discuss tasks 5-6, textbook p. 81. You can use actual base-10 blocks or linking cubes to illustrate these tasks – the pictures are static and students can understand the process better by actually moving the blocks or cubes.

Write the expression  $38 + 26$  and illustrate with base-10 material. First the tens are added;  $38 + 20 = 58$ . Then the ones are added:  $58 + 6 = 64$ . You can show the steps with an arrow diagram.

**Workbook**

Exercise 61

1. 39  
58; 58      36; 36  
50; 50      90; 90  
42; 42      64; 64
2. 58  
78; 78      77; 77  
80; 80      90; 90  
75; 75      94; 94