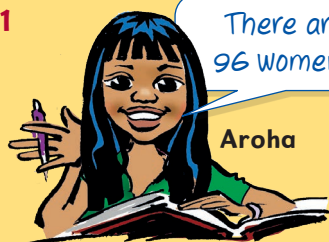


Estimating to check answers

Discussion

1



There are 82 men and 96 women on my marae.

Aroha

That's 78 altogether.



Mara



How can you tell Mara is wrong?

- 2 At a pōwhiri last week there were 178 men and 97 women. Kiri said "That's 215". Think of a way to check.

Rounding can be used to estimate.

Example

One waka holds 37 people.
Another waka holds 28 people.

That's 65 altogether.



Mara

Is Mara right?

37 is about 40.
28 is about 30.
 $40 + 30 = 70$.

So the waka holds about 70 people altogether.
Mara is correct.

I know the ones digit is correct because $7 + 8 = 15$



Mara



Activity

- 1 Estimate the answer to these. Choose the best answer from the box.

a $11 + 38$

40 50 60 70

b $60 - 22$

20 30 40 50

c $51 + 32$

60 70 80 90

d $118 + 319$

200 300 400 500

e $88 - 42$

40 50 60 70

f $67 - 19$

30 40 50 60

g $152 + 78$

250 240 230

h $263 - 88$

150 160 170

i $364 + 28$

490 390 380

j $482 - 65$

410 400 430

Adding and subtracting vertically and horizontally

Place value can be used to **add** numbers.

Example $28 + 17$

Vertical

$$\begin{array}{r} 1 \\ 28 \\ +17 \\ \hline 5 \end{array}$$

Add the ones
 $8 + 7 = 15$
 $= 10 + 5$
 Add the **10** to the tens column. Write down the 5 ones.

$$\begin{array}{r} 1 \\ 28 \\ +17 \\ \hline 45 \end{array}$$

Add the tens
 $1 + 2 + 1 = 4$

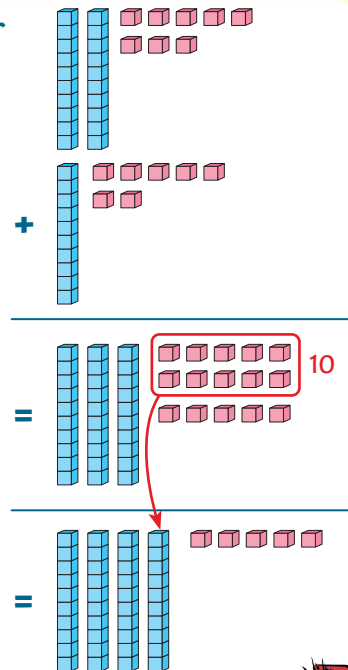
Horizontal (place value)

$$\begin{aligned} 28 + 17 &= 20 + 8 + 10 + 7 \\ &= 20 + 10 + 8 + 7 \end{aligned}$$

$$\begin{aligned} &= 20 + 10 + 15 \\ &= 20 + 10 + 10 + 5 \end{aligned}$$

$$\begin{aligned} &= 40 + 5 \\ &= 45 \end{aligned}$$

or



Activity 1

1 Use a horizontal **and** a vertical way to work these out.

- a** $42 + 6$ **b** $23 + 5$ **c** $41 + 9$ **d** $53 + 8$ **e** $64 + 8$ **f** $57 + 7$
g $68 + 4$ **h** $79 + 8$ **i** $86 + 7$ **j** $67 + 8$ **k** $38 + 9$ **l** $46 + 6$

2 Use a vertical way to work these out.

- | | | | | |
|--|--|--|--|--|
| a $\begin{array}{r} 34 \\ + 41 \\ \hline \end{array}$ | b $\begin{array}{r} 52 \\ + 36 \\ \hline \end{array}$ | c $\begin{array}{r} 86 \\ + 11 \\ \hline \end{array}$ | d $\begin{array}{r} 28 \\ + 18 \\ \hline \end{array}$ | e $\begin{array}{r} 86 \\ + 15 \\ \hline \end{array}$ |
| f $\begin{array}{r} 72 \\ + 17 \\ \hline \end{array}$ | g $\begin{array}{r} 68 \\ + 26 \\ \hline \end{array}$ | h $\begin{array}{r} 53 \\ + 28 \\ \hline \end{array}$ | i $\begin{array}{r} 47 \\ + 54 \\ \hline \end{array}$ | j $\begin{array}{r} 69 \\ + 34 \\ \hline \end{array}$ |

3 Use a vertical **and** a horizontal way to work these out

- a** $36 + 25$ **b** $52 + 19$ **c** $47 + 16$ **d** $27 + 15$
e $37 + 18$ **f** $84 + 16$ **g** $57 + 25$ **h** $38 + 46$ **i** $64 + 29$ **j** $47 + 38$
k $78 + 19$ **l** $58 + 27$ **m** $49 + 56$ **n** $56 + 72$ **o** $87 + 19$ **p** $93 + 16$

You could use place value blocks to help.

You could use place value blocks to help.

Addition and subtraction basic facts

Activity 1



1 Fun file

Why was the maths book sad?



<u>17</u>	<u>16</u>		<u>9</u>	<u>12</u>	<u>13</u>		
<u>16</u>	<u>6</u>	<u>6</u>		<u>3</u>	<u>12</u>	N <u>5</u>	<u>19</u>
<u>15</u>	<u>11</u>	<u>6</u>	<u>4</u>	<u>8</u>	<u>7</u>	<u>3</u>	<u>10</u>

On your copy, put the red letter that is beside each question above its correct answer. The first one has been done.

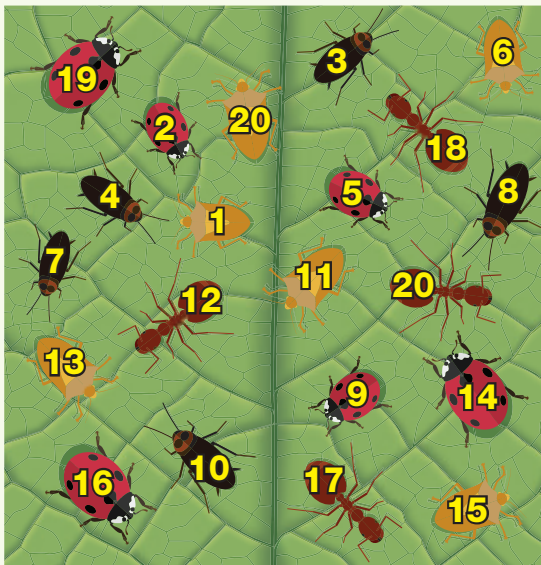
N 20 - 15 = 5	I 8 + 9 =	L 14 - 6 =	H 15 - 6 =
D 18 - 5 =	T 5 + 11 =	M 17 - 14 =	S 18 - 8 =
R 17 - 6 =	A 5 + 7 =	Y 9 + 10 =	O 14 - 8 =
P 8 + 7 =	B 11 - 7 =	E 16 - 9 =	



Puzzles



1 Number bugs



Choose numbers from the bugs to make each equation true.

- a + = 20
- b + = 19
- c + = 18
- d + = 17
- e - = 3
- f - = 7

You can use the numbers on the bugs as many times as you like.



Repeat this five times for each equation.

Money

Practical

Making money

Work out two ways you could pay for each of these.

- play money (\$1 and \$2 coins; \$5, \$10, \$20, \$50 and \$100 notes)



FOREST MENU	
a Weta burger	\$16
b Family fries	\$22
c Cod and chips	\$38
d Family pack (4)	\$47
e Family pack (5)	\$53



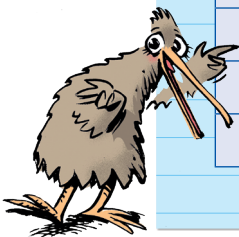
FOREST TOURS	
a Kiwi night	\$85
b Day tours	\$127
c Bird watch	\$158
d 3 day trek	\$249



Activity

1 a Tick the boxes to show how you could make the amount.

Amount	\$1	\$2	\$5	\$10	\$20	\$50	\$100
\$6							
\$9							
\$17							
\$36							
\$59							
\$86							
\$109							
\$187							
\$251							
\$368							



b Compare your table with a partner. What do you notice?

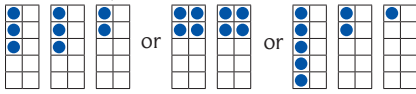
ANSWERS

NC3-1 Estimating how many

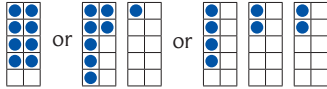
Activity

1 a 6 b 9 c 10 d 10 e 14 f 16

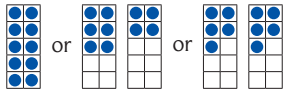
2 Possible ways:



3 a Possible ways:



b Possible ways:



NC3-2 Skip counting in twos, threes, fives and tens

Activity 1

1 a 6 socks b 16 socks c 28 socks d 40 socks

2 a 40 legs b 70 legs c 200 legs d 500 legs

3 a 30 minutes b 45 minutes

c 80 minutes d 85 minutes

Practical

a 700, 600, 500, 400, 300, 200, 100.

b 105, 110, 115, 120, 125, 130, 135, 140, 145, 150.

c 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 103, 105, 107, 109, 111, 113.

d 88, 83, 78, 73, 68, 63, 58, 53, 48.

e 167, 165, 163, 161, 159, 157, 155, 153, 151, 149, 147, 145, 143.

f 388, 398, 408, 418, 428, 438, 448, 458.

g 12, 15, 18, 21, 24, 27, 30, 33, 36, 39.

h 182, 185, 188, 191, 194, 197, 200, 203, 206, 209, 212, 215.

NC3-3 Skip counting in twos, threes, fives and tens

Activity 2

1 a 900, 800, 700, 600, 500, 400, 300, 200, 100.

b 20, 18, 16, 14, 12, 10, 8, 6, 4, 2.

c 106, 109, 112, 115, 118, 121, 124, 127, 130, 133.

d 120, 110, 100, 90, 80, 70, 60, 50, 40, 30.

e 29, 27, 25, 23, 21, 19, 17, 15, 13, 11.

f 134, 131, 128, 125, 122, 119, 116, 113, 110, 107, 104.

g 205, 200, 195, 190, 185, 180, 175, 170, 165.

2 a



b



NC3-5 Patterns in multiples and odds and evens

Practical

Student's own answers.

NC3-6 Ordering numbers using place value houses

Activity

1 a 52 b 72 c 86 d 376 e 981

f 664 g 214 h 539 i 463

2 Line 1: 37, 42, 47, 52, 66.

Line 2: 72, 86, 94, 96, 98.

Line 3: 39, 48, 56, 59, 63.

Line 4: 26, 32, 35, 44, 48.

Line 5: 244, 247, 252, 254, 255.

Line 6: 414, 419, 425, 446, 455.

Line 7: 243, 324, 344, 354, 366.

Line 8: 627, 630, 632, 655, 661.

3 a 76, 64, 55, 42.

b 59, 54, 47, 43, 39.

c 346, 342, 337, 324.

d 137, 130, 125, 123.

e 489, 357, 344, 247, 243.

f 751, 670, 608, 542, 345.

g 567, 562, 560, 555, 554.

h 865, 862, 858, 852, 849.

NC3-7 Expanding and regrouping numbers

Activity 1

1 a 3 hundreds, 5 tens, 2 ones

or 35 tens, 2 ones

or 352.

b 5 hundreds, 6 tens, 7 ones

or 56 tens, 7 ones

or 567 ones.

c 8 hundreds, 3 tens, 2 ones

or 83 tens, 2 ones

or 832 ones.

d 7 hundreds, 1 tens, 9 ones

or 71 tens, 9 ones

or 719 ones.

NC3-8 Expanding and regrouping numbers cont.

e 4 hundreds, 9 tens, 0 ones

or 49 tens, 0 ones

or 490 ones.

f 6 hundreds, 0 tens, 5 ones

or 60 tens, 5 ones

or 605 ones.

2 Student's own answers.

3 a 534 b 765 c 758

d 947 e 605 f 400

Activity 2

1 a

H	T	O
6	5	7
	65	7
		657

b

H	T	O
7	2	8
	72	8
		728

c

H	T	O
3	0	8
	30	8
		308

d

H	T	O
3	6	9
	36	9
		359

e

H	T	O
2	7	8
	27	8
		278

f

H	T	O
8	6	4
	86	4
		864

NC3-9 Expanding and regrouping numbers cont.

Discussion

Possible answers:

For each number, as the number of tens decreases by ten, the ones go up by 10 ones.

For 42 the ones always end in 2.

For 65, the ones always ends in 5.