



# Unit 1 – Place value within 1,000,000 (I)

## I Roman numerals

→ pages 8–11

### Discover

- IV means 1 before 5, which is 4.  
IX means 1 before 10, which is 9.  
XIV means X + IV, which is 14.  
XIX means X + IX, which is 19.
  - Ebo's Roman numerals represent the number 1,690. Jamie's Roman numerals represent the number 75.

### Think together

- Both numbers feature the same letters but in different places. One is  $100 + 10$ , the other is  $100 - 10$ . CX = 110, XC = 90.
- M means 1,000  
CD means  $500 - 100 = 400$   
XX means  $10 + 10 = 20$   
 $1,000 + 400 + 20 = 1,420$   
Zac's number is 1,420.
- XCVII means 97
  - MMIX means 2009
  - 450 in Roman numerals is CDL
  - 1791 in Roman numerals is MDCCXCI

## 2 Numbers to 10,000

→ pages 12–15

### Discover

- Lee's total score is 2,302.
  - The missing scores on the two ducks are 1,000 and 10.

### Think together

- Bella has made 4,043.
  - There are 4 thousands, 0 hundreds, 4 tens and 3 ones.  
 $4,000 + 40 + 3 = 4,043$
- The number is 5,214.
- 2,143
  - 7,210, 4,222 and 5,302
  - A number of possible answers, e.g. 2,311.
  - A number of possible answers, e.g. 1,432.

## 3 Numbers to 100,000

→ pages 16–19

### Discover

- The digit 7 represents 7 ten thousands, or 70,000.
  - A part-whole model with 72,318 in the top circle, and then from left to right in the bottom circles, 70,000; 2,000; 300; 10; and 8.  
Seventy-two thousand, three hundred and eighteen.

### Think together

- A part-whole model with 13,258 in the top circle, and then from left to right in the bottom circles, 10,000; 3,000; 200; 50; and 8.
  - A place-value grid with the following numbers of counters.

TTh	Th	H	T	O
1 purple counter	2 blue counters	2 green counters	5 yellow counters	8 red counters

Thirteen thousand, two hundred and fifty-eight.  
The value of the digit 3 is 3,000.

- 45,206
  - The value of 4 is forty thousands, the value of 5 is five thousands, the value of 2 is two hundreds, the value of 0 is zero tens and the value of 6 is six ones.  
Forty-five thousand, two hundred and six.
- $40,000 + 3,000 + 200 + 40 + 5$   
 $30,000 + 10,000 + 100 + 100 + 40 + 5$   
 $43,000 + 200 + 45$
  - $23,407 = 20,000 + 3,000 + 400 + 7$

## 4 Numbers to 1,000,000

→ pages 20–23

### Discover

- Six containers can hold 600,000 sweets.
  - 461,905  
There are 4 hundred thousands, 6 ten thousands, 1 thousand, 9 hundreds, 0 tens and 5 ones.

### Think together

- 900,000
- Seven hundred and twenty-eight thousand, six hundred and eleven
  - 370,938
- 50,000
  - 5
  - 500,000
  - 500



## 5 Read and write 5- and 6-digit numbers

→ pages 24–27

### Discover

- 3,245  
Children say: Three thousand, two hundred and forty-five.
  - Richard makes thirteen thousand, four hundred and twenty-five (13,425).  
Ambika makes seven hundred and thirteen thousand, four hundred and twenty-five (713,245).

### Think together

- Children read the numbers:  
Eighty-nine thousand, nine hundred and ninety-five;  
One hundred and twenty thousand, seven hundred and fifty;  
One hundred and ninety-nine thousand, nine hundred and ninety-nine.
- Children's answers may vary, e.g. 3,003, 30,030, 300,300.
- The digits are in the same place, but the column headings are grouped differently.
  - Children's answers will vary, e.g. 450, 900.

## 6 Powers of 10

→ pages 28–31

### Discover

- Luis has 12 \$10,000 notes.
  - Bella has 120 \$1,000 notes.

### Think together

- 2
  - 6
  - 0
- 4
  - 9
  - 0

3. a)

100s	10s	1s
5,200	52,000	520,000

## 7 10/100/1,000/10,000/100,000 more or less

→ pages 32–35

### Discover

- 120,000
  - 241,980

### Think together

- 72,000, 73,000, 74,000, **75,000**, **76,000**, **77,000**
  - 272,700, 272,800, **272,900**, **273,000**, 273,100, **273,200**
  - 738,006, **638,006**, **538,006**, 438,006, **338,006**, **238,006**

2.

100,000 less	47,300	100,000 more	247,300
10,000 less	137,300	10,000 more	157,300
1,000 less	146,300	1,000 more	148,300
100 less	147,200	100 more	147,400
10 less	147,290	10 more	147,310

- Reena has a score of 400,500 by the end of the level. Children's explanation to detail how for every positive number Reena travels through, she also travels through a negative number cancelling out any points she scores.
  - Look for children to find routes that total less than 500,000. An example is pictured below.



## 8 Partition numbers to 1,000,000

→ pages 36–39

### Discover

- £236,253
  - The value of the 3 is 3 hundred thousands.  
The value of the 6 is 6 ten thousands.  
The value of the 4 is 4 hundreds.



### Think together

1. a) 726,140 is 7 hundred thousands, 2 ten thousands, 6 thousands, 1 hundreds, and 4 tens.  
 b) 58,415: The value of the 5 is 5 ten thousands.  
 The value of the 8 is 8 thousands, the value of the 4 is 4 hundreds, the value of the 1 is 1 ten and the value of the 5 is five ones.  
 604,003: The value of the 6 is 6 hundred thousands.  
 The value of the 4 is 4 thousands, the value of the 3 is 3 ones.
2.  $60,375 = 60,000 + 300 + 70 + 5$   
 $951,618 = 900,000 + 50,000 + 1,000 + 600 + 10 + 8$   
 $120,508 = 100,000 + 20,000 + 500 + 8$
3. a) 57,312  
 300,562  
 104,500  
 26,503  
 b) 54,076  
 60,000

## End of unit check

→ pages 40–41

1. B: 90
2. B: 8,000
3. B: 84,036
4. B:  $33,575 = 20,000 + 10,000 + 500 + 70 + 5$   
 (This represents 30,575.)
5. C: 368,180
6. C: 700,035
7. MMXXII
8. a) Answers will vary but the parts should total 230,195.  
 For example,  $200,000 + 30,000 + 0 + 100 + 90 + 5$ .  
 b) 735,085



# Unit 2 – Place value – within 1,000,000 (2)

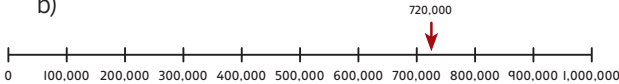
## I Number line to 1,000,000

→ pages 44–47

### Discover

- a) The minimum is £200,000, the maximum is £850,000.

b)

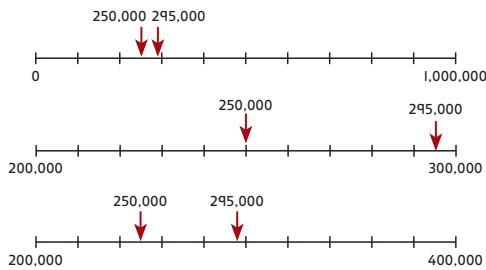


### Think together

- a) 100,000, 200,000, 300,000, 400,000, 600,000, 700,000, 900,000  
 b) 210,000, 230,000, 240,000, 250,000, 260,000, 270,000, 290,000  
 c) 418,100, 418,200, 418,300, 418,400, 418,500, 418,600, 418,700, 418,800, 418,900

- A = 353,000; B = 355,000; C = 359,000

3. a)



## 2 Compare and order numbers to 100,000

→ pages 48–51

### Discover

- a) Amal's score is lowest: 5,276.  
 b) In ascending order, the scores are 5,276; 56,725; 65,272; 65,575.

### Think together

- A is greater.  $23,110 > 22,512$
- a)  $34,790 < 43,970$   
 $21,033 > 8,968$   
 b)  $20,932 > 20,923 > 8,560$
- Sometimes true. It will depend on the number of digits and therefore the place value of the digits 9 and 5.  
 Children should show this using a range of examples for which it is true (e.g., 93,245 and 56,278) or not true (e.g., 9,375 and 54,267).

## 3 Compare and order numbers to 1,000,000

→ pages 52–55

### Discover

- a) Oxford has more 10,000s and so has a greater population.  
 $162,200 > 123,900$   
 b) The populations in ascending order are Durham, Cambridge, Oxford, Sunderland and Bristol.

### Think together

- a) Doncaster  
 b) Glasgow
- 195,311, 99,999, 308,000, seventy-nine thousand, two hundred
- Look for any combination that works. For example:  
 $72,500, 126,091, 126,470, 133,904, 133,912$   
 $72,500, 126,191, 127,470, 133,904, 133,952$

## 4 Round numbers to the nearest 100,000

→ pages 56–59

### Discover

- a) Children should draw a number line from 0 to 1,000,000 with multiples of 100,000; with 200,000 and 300,000 labelled as the previous and next 100,000 for both numbers.  
 b) 225,623 rounds down to 200,000; 252,088 rounds up to 300,000.

### Think together

- a) and b) Children's numbers for the middle column of the table will vary. Look for any combinations that work. For example:

	Previous 100,000	Your numbers	Next 100,000
A	0	50,000	100,000
B	300,000	320,000	400,000
C	800,000	870,000	900,000

- a) 450,000  
 b) Children should point to where 403,511, 449,789 and 470,000 are on the number line.  
 c) 400,000      400,000      500,000
- a) Answers will vary but should include looking at the first digit to identify the previous and next 100,000 and using the other digits to round up or down.  
 b) 300,000      400,000      700,000  
 c) 100,000      400,000      1,000,000



## 5 Round numbers to the nearest 10,000

→ pages 60–63

### Discover

- Children should draw a number line from 0 to 100,000 with multiples of 10,000 labelled and with estimates for 41,300, 77,735 and 98,275 marked.
  - 41,300 rounds down to 40,000; 77,735 rounds up to 80,000; and 98,275 rounds up to 100,000.

### Think together

- 26,291 rounds up to 30,000; 63,059 rounds down to 60,000; 89,001 rounds up to 90,000; and 4,275 rounds down to 0.
- 27,700, 33,501
- Children should recognise that Danny is looking at the 100,000s, not the 10,000s, and is incorrect. Ebo is on the right track in counting in 10,000s but needs to identify the 10,000 before 426,835 and the 10,000 after. Kate is incorrect and Lexi is correct. 426,835 rounded to the nearest 10,000 is 430,000.
  - 151,380 rounded to the nearest 10,000 is 150,000; 199,950 rounded to the nearest 10,000 is 200,000; 277,907 rounded to the nearest 10,000 is 280,000; 5,001 rounded to the nearest 10,000 is 10,000.

## 6 Round numbers to the nearest 10, 100 and 1,000

→ pages 64–67

### Discover

- Jamie has rounded 124,578 to the nearest 10.
  - 124,758 rounded to the nearest 100 is 124,600.

### Think together

- 100,000; 130,000; 128,000; 127,900; 127,850
- 60; 960; 1,960; 21,960; 521,960  
You always look at the 1s digit and the last two digits always round to 60. It does not matter about the other digits when rounding to the nearest 10.
- The scientist has rounded up to make sure they get sufficient funding for the microscope. The music promoter rounds up to make sure there are enough t-shirts. The engineer has rounded up to the nearest 1,000, but it is not safe to do this since this is more than the maximum load tested of 24,150 kg.
  - Rounding has been used to create the most impact in the newspaper headlines.

## End of unit check

→ pages 68–69

- C: 200,000
- D: 300,000
- D: 750,000
- C: 206,230
- B: £360,000, £42,000, £7,999
- 67,498
- 252,000
  - Yes.



# Unit 3 – Addition and subtraction

## I Mental strategies (addition)

→ pages 72–75

### Discover

- a)  $2,000 + 7,000 = 9,000$   
 $40,000 + 30,000 = 70,000$
- a)  $45 + 23 = 68$   
 $450 + 230 = 680$

### Think together

- a)  $50,000 + 30,000 = 80,000$   
 b)  $70,000 + 60,000 = 130,000$   
 c)  $54 + 35 = 89$   
 d)  $540 + 350 = 890$
- a)  $24 + 69 = 93$   
 b)  $240 + 690 = 930$
- a) Andy needs to subtract 2 to find the first answer and subtract 3 to find the second answer.  
 $324 + 198 = 522$   
 $324 + 197 = 521$

- b)  $672 + 99 = 771$   
 $426 + 397 = 823$   
 $296 + 3,147 = 3,443$   
 $7,608 + 1,998 = 9,606$   
 $18,790 + 39,990 = 58,780$

## 2 Mental strategies (subtraction)

→ pages 76–79

### Discover

- a) Ebo used a mental method. He counted on from 1,995 to 2,002.  
 b)  $700 - 200 = 500$   
 $60 - 50 = 10$   
 $760 - 250 = 510$

### Think together

- a)  $7 - 2 = 5$   
 $70 - 20 = 50$   
 $700 - 200 = 500$   
 $7,000 - 2,000 = 5,000$   
 $70,000 - 20,000 = 50,000$   
 $700,000 - 200,000 = 500,000$
- b)  $700 - 200 = 500$   
 $50 - 40 = 10$   
 $500 + 10 = 510$

- $76 - 40: 76 - 40 = 36$  (place value)  
 $76 - 42: 76 - 40 = 36, 36 - 2 = 34$  and  $70 - 40 = 30$ ,  
 $6 - 2 = 4, 30 + 4 = 34$  (partitioning)  
 $72 - 46: 72 - 40 = 32, 32 - 2 = 30, 30 - 4 = 26$   
 (counting back)
- a)  $506 - 498 = 8$   
 b)  $710 - 697 = 13$   
 $4,302 - 4,299 = 3$   
 $10,005 - 9,987 = 18$

## 3 Add whole numbers with more than 4 digits (I)

→ pages 80–83

### Discover

- a) The total number of video views for Tuesday and Wednesday is 39,328.  
 b) Wednesday and Friday have the total views of 37,592.

### Think together

- $22,571 + 18,417 = 40,988$   
 The total number of views is 40,988.
- a)  $26,915 + 30,241 = 57,156$   
 b)  $37,418 + 4,157 = 41,575$   
 c)  $1,564 + 18,417 = 19,981$   
 d)  $28,019 + 4,096 = 32,115$
- Children should work out any two from the following:  
 $34,171 + 61,426 = 95,597$   
 $34,171 + 5,458 = 39,629$   
 $34,171 + 1,023 = 35,194$   
 $61,426 + 5,458 = 66,884$   
 $61,426 + 1,023 = 62,449$   
 $5,458 + 1,023 = 6,481$

## 4 Add whole numbers with more than 4 digits (2)

→ pages 84–87

### Discover

- a) The distance between London and Sydney is 16,998 km.  
 Shanghai and Auckland are 9,385 km apart.
- $18,360 + 14,212 = 32,572$  km  
 Holly flies 32,572 km in total.

### Think together

- Mo flies 19,154 km in total.
- The total distance of Route 1 is 19,682 km.  
 The total distance of Route 2 is 18,585 km.  
 David should choose Route 2.
- a) The total cost of painting C and D is £472,629.  
 b) The total cost of paintings C, D and A is £511,379.  
 c) This will be each child's personal choice.



## 5 Subtract whole numbers with more than 4 digits (1)

→ pages 88–91

### Discover

- a)  $15,735 - 2,582 = 13,153$   
The velodrome capacity is 13,153 greater than the archery field capacity.
- b)  $75,450 - 52,700 = 22,750$   
22,750 seats were empty in the athletics stadium.

### Think together

- $15,735 - 3,620 = 12,115$   
There are 12,115 people left in the velodrome.
- $17,900 - 10,840 = 7,060$   
7,060 more people could have watched the game.
- $75,450 - 42,300 = 33,150$   
The capacity of the hockey centre is 33,150.  
 $33,150 - 15,735 = 17,415$   
The capacity of the hockey centre is 17,415 greater than the capacity of the velodrome.

## 6 Subtract whole numbers with more than 4 digits (2)

→ pages 92–95

### Discover

- a) One exchange is needed now, as there are not enough 1,000s to subtract from.  
The answer to the new subtraction is 44,563.
- b)  $62,097 - 18,534 = 43,563$   
 $62,037 - 18,594 = 43,443$   
 $62,034 - 18,597 = 43,437$

### Think together

- $82,706 - 39,415 = 43,291$
- $76,503 - 14,892 = 61,611$
- a)  $27,910 - 15,462 = 12,448$   
b)  $27,900 - 15,462 = 12,438$   
c)  $27,000 - 15,462 = 11,538$   
d)  $20,000 - 15,462 = 4,538$

## 7 Round to check answers

→ pages 96–99

### Discover

- a)  $18,000 + 4,000 = 22,000$ . Bella's answer should be close to 22,000.  
b) Bella has lined up the numbers incorrectly in the column addition.  
The thousands need to be lined up underneath the thousands, and so on.  
The correct answer is 21,889.

### Think together

- 4,935 is close to 4,900 or 5,000. 322 is close to 300.  
 $4,900 - 300 = 4,600$  or  $5,000 - 300 = 4,700$   
Bella has laid the calculation out incorrectly.  
She has not lined the ones up under the ones, and so on.
- a) 17,240 rounds to 17,000  
28,385 rounds to 28,000  
 $17,000 + 28,000 = 45,000$   
 $17,240 + 28,385 = 45,625$   
b) 7,010 rounds to 7,000  
3,997 rounds to 4,000  
 $7,000 - 4,000 = 3,000$   
 $7,010 - 3,997 = 3,013$   
The estimates were sensible.
- $12,795 + 1,199 + 298 = £14,292$   
The items cost £14,292 in total.  
 $12,795 - 1,199 = £11,596$   
The difference in price between the car and the laptop is £11,596.

## 8 Inverse operations (addition and subtraction)

→ pages 100–103

### Discover

- a) Reena is correct as  $2,355 + 5,191$  is equal to 7,546.  
b) Lee should have exchanged 1 hundred for 10 tens so that he could do the subtraction.

### Think together

- a) The correct answer is  $23,405 + 7,892 = 31,297$ , so Lee is correct.  
b) Reena has not exchanged 10 hundreds for 1 thousand or 10 thousands for 1 ten thousand.
- The correct answer is  $46,795 - 3,548 = 43,247$ .  
Reena:  $11,315 + 3,548 = 14,863$   
This is incorrect as Reena has not laid out the column subtraction correctly.  
The 8 ones need to be under the 5 ones, and so on.  
Lee:  $43,253 + 3,548 = 46,801$   
This is incorrect as Lee has not exchanged 1 ten for 10 ones and has just done  $8 - 5 = 3$  in the ones column.
- a)  $770 + 230 = 1,000$        $230 + 770 = 1,000$   
 $1,000 - 770 = 230$        $1,000 - 230 = 770$   
b)  $10,000 - 7,730$  and  $10,000 - 3,270$  could help you check  $3,270 + 7,730 = 10,000$ .  
c)  $10,000 - 7,730 = 2,270$  and  $10,000 - 3,270 = 6,730$ .  
The calculation is incorrect.



## 9 Multi-step addition and subtraction problems (I)

→ pages 104–107

### Discover

- $£16,725 - £7,560 = £9,165$   
The difference in the price between the cost of the new sports car and the used one is £9,165.
  - Jen and Holly have £6,650 altogether.

### Think together

- $16,725 - 6,650 = £10,075$   
Jen and Holly need £10,075 more to buy the new sports car.
- $19,579 + 28,370 + 16,725 = £64,674$   
The three cars cost £64,674 in total.
- $19,579 + 8,298 = £27,877$   
The SUV and the electric car cost £27,877.  
 $28,370 - 27,877 = £493$   
The family car costs £493 more than this.

## 10 Multi-step addition and subtraction problems (2)

→ pages 108–111

### Discover

- The plane has used 32,000 litres of fuel so far.
  - There will be 37,840 litres of fuel left after two more hours of flying.

### Think together

- $14,569 + 11,118 = 25,687$   
25,687 passengers passed through before 2 pm.  
 $23,277 + 5,946 = 29,223$   
29,223 passengers passed through after 2 pm.  
More passengers passed through the airport after 2 pm.
- $416 - 280 = 136$   
 $416 + 136 = 552$   
The two planes can carry 552 passengers in total.
- $12,500 + 2,500 = 15,000$   
 $15,000 \times 4 = 60,000$   
 $60,000 + 5,600 + 5,150 = 70,750$   
The pilot will need 70,750 litres of fuel for a 4-hour flight.

## 11 Solving missing number problems

→ pages 112–115

### Discover

- The value of the triangle is 27.
  - The value of the circle is 37.

### Think together

- The value of the red triangle is 62.  
The value of the green triangle is 33.  
The value of the blue triangle is 2,600.
- The value of the yellow square is 440.
- $360 + 390 = 750$ . Both methods work.
  - This will be up to the preference of the children.

## 12 Solve comparison problems

→ pages 116–119

### Discover

- 404 is the number on the card with the red circle.
  - 417 is the number on the card with the blue triangle.

### Think together

- $215 + 136 = 214 + 137$   
 $215 + 136 = 213 + 138$   
 $215 + 136 = 225 + 126$
- $3,000 + 2,750 = 2,000 + 3,750$   
 $3,000 + 2,750 = 2,000 + 3,750$
- For the addition, Max can increase 280 by 10 to compensate for 540 decreasing by 10.  
For the subtraction, Max can decrease 280 by 10, so the difference remains the same on both sides of the equals sign.

## End of unit check

→ pages 120–121

- D: 20,273
- C: 2,400
- B: £2,795
- B: 299,920
- C: 2,088
- It will take 3 days (or 2.78 days).
- 5,456 trees





# Unit 4 – Multiplication and division (I)

## 2 Common multiples

### I Multiples

→ pages 128–131

→ pages 124–127

#### Discover

1. a)

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	100

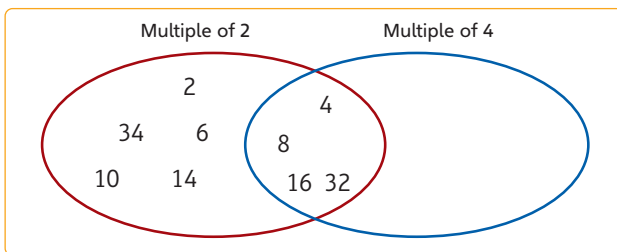
b) Luis is incorrect. 74 is not a multiple of 4.

#### Think together

- Multiples of 2 have 0, 2, 4, 6 or 8 in the 1s digit. Numbers that are multiples of 2 are all even. Numbers that are not multiples of 2 are all odd.
- 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, 100  
Multiples of 5 have 0 or 5 in the 1s digit. Even multiples of 5 all end in 0. Odd multiples of 5 all end in 5.
- a) For example:

	Multiple of 6	Not a multiple of 6
Ends in a 6	6, 36, 66, 96	16, 26, 46, 56, 76
Does not end in a 6	12, 18, 24, 30, 42	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15

- b) The statement is sometimes true, as evidenced in the chart in question 3 a).
- c) For example:



#### Discover

- a) When the number is a multiple of 2, the child says 'Fizz'.  
When the number is a multiple of 3, the child says 'Buzz'.  
b) The first three common multiples of 4 and 6 are 12, 24 and 36.

#### Think together

- Multiples of 6: 6, 12, 18, 24, 30, 36, 42, 48, 54, 60  
Multiples of 9: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90  
The common multiples of 9 and 6 are 18, 36 and 54.
- a) 12  
b) 10  
c) 24
- a) Alex knows that the product of two numbers is a common multiple of both numbers.  
b) Multiples of 10: 10, 20, 30, ...  
Multiples of 15: 15, 30, 45, ...  
The lowest common multiple of 10 and 15 is 30.  
c) All multiples of the lowest common multiple of two numbers will be common multiples of those numbers.

## 3 Factors

→ pages 132–135

#### Discover

- a)  $1 \times 24 = 24$ ; 1 and 24 are factors of 24.  
 $2 \times 12 = 24$ ; 2 and 12 are factors of 24.  
 $3 \times 8 = 24$ ; 3 and 8 are factors of 24.  
 $4 \times 6 = 24$ ; 4 and 6 are factors of 24.  
b) There are fewer arrangements as the factors of 25 are 1, 5 and 25.

#### Think together

- The factors of 16 are 1, 2, 4, 8 and 16.
- a) 5 is not a factor of 16 because 16 is not in the 5 times-table. The nearest multiple of 5 is 15 and the following multiple is 20.  
b) 4 is not a factor of 22 because 22 is not divisible by 4 without a remainder.
- a) The factors of 30 are 1, 2, 3, 5, 6, 10, 15 and 30.  
b) The factors of 40 are 1, 2, 4, 5, 8, 10, 20 and 40.



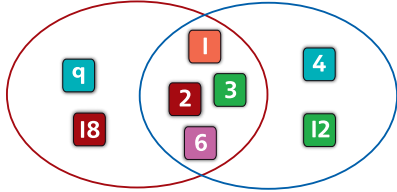
## 4 Common factors

→ pages 136–139

### Discover

1. a) The factors of 18 are 1, 2, 3, 6, 9 and 18.

b) Factors of 18      Factors of 12

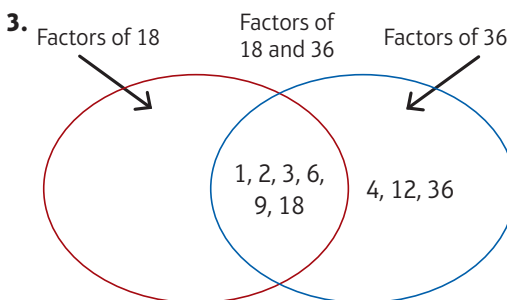
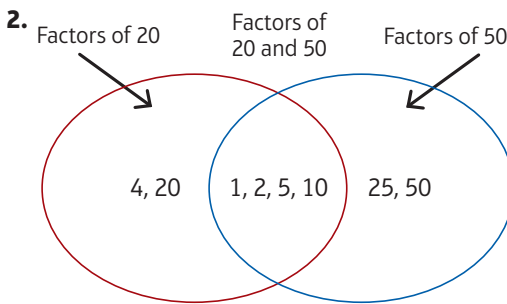


The numbers 1, 2, 3 and 6 are in the part where the two circles overlap.

### Think together

Number	1	2	3	4	5	6
Multiples of 24	✓	✓	✓	✓		✓
Multiples of 30	✓	✓	✓		✓	✓

The common factors of 24 and 30 are 1, 2, 3 and 6.



Ambika is correct, 1 is a common factor of any two numbers.

Andy is correct, all factors of 18 are also factors of 36, because 18 itself is a factor of 36.

## 5 Prime numbers

→ pages 140–143

### Discover

- a) The players can only be in 1 group of 13 or 13 groups of 1 player.  
b) The team of 9 tennis players can split into equal groups in more ways than the team of 7 basketball players.

### Think together

- a) The factors of 63 are 1, 3, 7, 9, 21 and 63.  
b) 63 is a composite number.

Number	Factors	How many factors?	Is it a prime or composite number?
12	1, 2, 3, 4, 6, 12	6	Composite
11	1, 11	2	Prime
10	1, 2, 5, 10	4	Composite
9	1, 3, 9	3	Composite
8	1, 2, 4, 8	4	Composite
7	1, 7	2	Prime
6	1, 2, 3, 6	4	Composite
5	1, 5	2	Prime
4	1, 2, 4	3	Composite
3	1, 3	2	Prime
2	1, 2	2	Prime

- The prime numbers between 0 and 100 are 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89 and 97.

There are 25 prime numbers between 0 and 100.

## 6 Square numbers

→ pages 144–147

### Discover

- a) There are 64 small squares on the chessboard altogether.  
b) Possible squares:  
1 × 1  
2 × 2  
3 × 3  
4 × 4  
5 × 5  
6 × 6  
7 × 7  
8 × 8

### Think together

- a)  $5^2 = 5 \times 5 = 25$   
b) 10 squared is 100.
- 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144
- a) Jamilla is incorrect as she has not made a complete, solid square.  
b) 16 is a square number. Look for children making or drawing a 4 by 4 square.



## 7 Cube numbers

→ pages 148–151

### Discover

- 8 small cubes make up the puzzle cube.
  - Isla saw 2 multiplied 3 times, so did  $2 \times 3 = 6$  ( $2 + 2 + 2$  rather than  $2 \times 2 \times 2$ ).

### Think together

- 27 cubes are needed.
  - $3^3 = 27$
- $1^3 = 1 \times 1 \times 1 = 1$   
 $10^3 = 10 \times 10 \times 10 = 1,000$
  - Zac is incorrect. The cube number is 8 (the product), not 2.
- $5^3 = 125$
  - $6^3 = 216$

## 8 Multiply by 10, 100 and 1,000

→ pages 152–155

### Discover

- 40 wheels are needed for 10 cars.  
400 wheels are needed for 100 cars.
  - 20 lamps are needed for 10 cars.  
200 lamps are needed for 100 cars.

### Think together

- $7 \times 10 = 70$   
 $7 \times 100 = 700$   
 $7 \times 1,000 = 7,000$
  - $12 \times 10 = 120$   
 $12 \times 100 = 1,200$   
 $12 \times 1,000 = 12,000$
- Aki has solved the first calculation correctly,  
 $23 \times 100 = 2,300$ .  
Aki has solved the second calculation incorrectly by multiplying 20 by 10, instead of 100.
- Each set of ten 1s counters are exchanged for one 10 place value counter, giving three 10s counters in the tens column.  
 $10 \times 3 = 30$
  - $3 \times 10 = 30$   
 $17 \times 10 = 170$   
The numbers move to next column in the place value grid when multiplying by 10.
  - $3 \times 10 \times 10 = 300$   
 $17 \times 10 \times 10 = 1,700$   
Multiplying by 10 and then 10 again is the same as multiplying by 100.

## 9 Divide by 10, 100 and 1,000

→ pages 156–159

### Discover

- Each 1st prize winner will receive £38.
  - Each 2nd prize winner will receive £12.

### Think together

- $30 \div 10 = 3$ ;  $300 \div 100 = 3$ ;  $3,000 \div 1,000 = 3$
  - $310 \div 10 = 31$ ;  $3,100 \div 100 = 31$ ;  $31,000 \div 1,000 = 31$
  - $300 \div 10 = 30$ ;  $3,000 \div 100 = 30$ ;  $30,000 \div 1,000 = 30$   
Each set of calculations gives the same answer.
- 4,000 is four 1,000s.  
 $4 \times 1,000 = 4,000$   
 $4,000 \div 1,000 = 4$   
Each third prize winner receives £4.
- $4,000 \div 10 = 400$ ;  $4,000 \div 100 = 40$   
 $3,200 \div 10 = 320$ ;  $3,200 \div 100 = 32$

When you divide the numbers by 10 or 100, the digits stay the same but move right in the place value grid.

- Max is correct, it is the same as dividing by 1,000.

## 10 Multiples of 10, 100 and 1,000

→ pages 160–163

### Discover

- Emma plans to learn 150 words in April.
  - Ebo knows that  $10 \times 30 = 300$ . So, he knows  $5 \times 30$  must be half of 300, which is 150.

### Think together

- $180 \div 30 = 6$
- $4 \times 3 = 12$ ;  $4 \times 300 = 1,200$
  - $24 \div 6 = 4$ ;  $2,400 \div 600 = 4$
- $9 \times 3,000 = 27,000$   
 $400 \times 2,400 = 960,000$   
 $35,000 \div 7,000 = 5$  (think  $35 \div 7 = 5$ )  
 $2,400 \div 120 = 20$  (think  $1,200 \div 60 = 20$ )
  - $800 \times 6 = 400 \times 12$   
Athlete B will have to train for 12 days before she has run as far as Athlete A. Children may reason that there are twice as many blocks of 400 as there are of 800 to fill the same bar model.



## End of unit check

→ pages 164–165

1. B: 15
2. D: This shows that 9 is a square number,  
because  $3 \times 3 = 9$ .
3. D: 60
4. a) B:  $40 \times 56$   
b) C: 27
5. D:  $150 \times 20$
6. a) 12  
b) 12
7. 75 and 4 or 74 and 5.



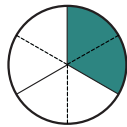
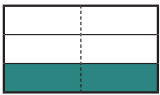
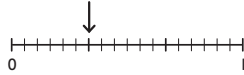
# Unit 5 – Fractions (I)

## I Equivalent fractions

→ pages 168–171

### Discover

1. a)  $\frac{1}{3}$



b)  $\frac{1}{3} = \frac{2}{6}, \frac{5}{15}, \frac{10}{30}, \frac{11}{33}$

### Think together

1.  $\frac{1}{2} = \frac{2}{4}$        $\frac{1}{2} = \frac{3}{6}$        $\frac{1}{2} = \frac{5}{10}$

2.  $\frac{1}{5} = \frac{4}{20}$        $\frac{1}{5} = \frac{7}{35}$        $\frac{1}{5} = \frac{16}{80}$

3. a) No, as this method does not give equivalent fractions.

b)  $\frac{1}{4} = \frac{2}{8} = \frac{3}{12} = \frac{4}{16} = \frac{5}{20} = \frac{6}{24}$

## 2 Equivalent fractions – unit and non-unit fractions

→ pages 172–175

### Discover

1. a)



b)  $\frac{2}{3} = \frac{4}{6}$        $\frac{2}{3} = \frac{6}{9}$        $\frac{2}{3} = \frac{8}{12}$        $\frac{2}{3} = \frac{10}{15}$

### Think together

1. a) Different answers possible, e.g.  $\frac{2}{5} = \frac{6}{15}$ .

b)  $\frac{2}{5} = \frac{8}{20}$

2. Answers may vary, e.g.

$\frac{2}{7} = \frac{4}{14}$        $\frac{5}{7} = \frac{10}{14}$        $\frac{6}{7} = \frac{12}{14}$

3. Answers may vary, e.g.

$\frac{1}{10} = \frac{2}{20} = \frac{3}{30} = \frac{7}{70}$

## 3 Equivalent fractions – families of equivalent fractions

→ pages 176–179

### Discover

1. a) Fractions  $\frac{1}{2}, \frac{2}{4}$  and  $\frac{4}{8}$  are equivalent.  
 b) The fraction on Luis's flag is the odd one out. The odd fraction out is  $\frac{2}{3}$ . Equivalent fractions to  $\frac{2}{3}$  given in **Share** are  $\frac{14}{21}$  and  $\frac{24}{36}$ . Pupils may give examples such as  $\frac{4}{6}, \frac{6}{9}, \frac{8}{12}$ , etc.

### Think together

1. The fractions are:

- a)  $\frac{4}{10}$                       c)  $\frac{4}{15}$   
 b)  $\frac{6}{15}$                       d)  $\frac{2}{5}$

a), b) and d) are equivalent fractions. c)  $\frac{4}{15}$  is the odd one out.

2. b) is the incorrect statement.

3. a) Yes, the statement is correct.

b)  $\frac{10}{12} = \frac{20}{24} = \frac{15}{18}$   
 $\frac{12}{27} = \frac{8}{18}$   
 $\frac{10}{14} = \frac{20}{28} = \frac{15}{21}$

## 4 Improper fractions to mixed numbers

→ pages 180–183

### Discover

1. a) Sofia has  $\frac{5}{2}$  litres of paint.  
 b) Sofia has  $2\frac{1}{2}$  litres of paint.

### Think together

1.  $\frac{10}{3} = 1 + 1 + 1 + \frac{1}{3} = 3\frac{1}{3}$

2. a)  $\frac{5}{4} = 1\frac{1}{4}$

b)  $\frac{13}{4} = 3\frac{1}{4}$

c)  $\frac{15}{4} = 3\frac{3}{4}$

d)  $\frac{41}{4} = 10\frac{1}{4}$

3. a)  $\frac{17}{6} = 2\frac{5}{6}$ ,  $\frac{18}{6} = 3$ ,  $\frac{19}{6} = 3\frac{1}{6}$ ,  $\frac{20}{6} = 3\frac{2}{6} = 3\frac{1}{3}$ ,

$\frac{21}{6} = 3\frac{3}{6} = 3\frac{1}{2}$ ,  $\frac{22}{6} = 3\frac{4}{6} = 3\frac{2}{3}$ ,  $\frac{23}{6} = 3\frac{5}{6}$

b)  $\frac{24}{4} = 6$ ,  $\frac{24}{5} = 4\frac{4}{5}$ ,  $\frac{24}{6} = 4$ ,  $\frac{24}{7} = 3\frac{3}{7}$ ,  $\frac{24}{8} = 3$ ,

$\frac{24}{9} = 2\frac{6}{9} = 2\frac{2}{3}$ ,  $\frac{24}{10} = 2\frac{4}{10} = 2\frac{2}{5}$



## 5 Mixed numbers to improper fractions

→ pages 184–187

### Discover

- a) There are  $4\frac{1}{4}$  fruit tarts.  
b)  $4\frac{1}{4} = \frac{17}{4}$

### Think together

- a)  $3\frac{4}{5} = \frac{19}{5}$   
b)  $2\frac{2}{3} = \frac{8}{3}$
- A =  $1\frac{1}{4}$  or  $\frac{5}{4}$       C = 3 or  $\frac{12}{4}$   
B =  $2\frac{1}{2}$  or  $\frac{10}{4}$       D = 4 or  $\frac{16}{4}$
- The values of the red triangle are shown below:

★	▲
1	6
2	11
3	16
4	21
5	26
10	51

Each time you increase the value of the star by 1, the value of the triangle increases by 5, because 1 star represents 5 fifths.

## 6 Compare fractions less than 1

→ pages 188–191

### Discover

- a) 4 out of 5 is  $\frac{4}{5}$ . 7 out of 10 is  $\frac{7}{10}$ .  
b)  $\frac{4}{5}$  is the better score.

### Think together

- a)  $\frac{4}{5} > \frac{11}{15}$   
b)  $\frac{12}{20} = \frac{3}{5}$   
c)  $\frac{19}{50} < \frac{2}{5}$
- a)  $\frac{8}{9} < \frac{17}{18}$   
b)  $\frac{2}{3} > \frac{5}{9}$   
c)  $\frac{3}{4} > \frac{11}{16}$   
d)  $\frac{1}{2} < \frac{13}{24}$
- Answers will vary dependent on understanding.

## 7 Order fractions less than 1

→ pages 192–195

### Discover

- a)  $\frac{5}{8}$ ,  $\frac{9}{16}$  and  $\frac{15}{16}$  are greater than half.  
b)  $\frac{1}{8} < \frac{5}{16} < \frac{9}{16} < \frac{5}{8} < \frac{15}{16}$

### Think together

- a)  $\frac{5}{12}$  and  $\frac{99}{200}$  are less than one-half.  
b)  $\frac{1}{20}$  and  $\frac{5}{60}$  are less than one-tenth.
- $\frac{1}{6} < \frac{2}{6} < \frac{5}{12} < \frac{3}{6} < \frac{2}{3} < \frac{5}{6}$
- a) Answers will vary, e.g.  
 $\frac{1}{4}$ ,  $\frac{2}{8}$ ,  $\frac{1}{3}$ ,  $\frac{2}{6}$ ,  $\frac{2}{5}$ ,  $\frac{4}{10}$   
b) Answers will vary, e.g.  
 $\frac{3}{5} < \frac{7}{10} < \frac{4}{5}$

## 8 Compare and order fractions greater than 1

→ pages 196–199

### Discover

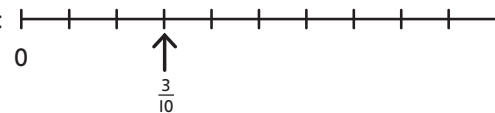
- a) The shop is closer than the café.  
b) The castle is further than the beach.

### Think together

- From smallest to greatest:  $1\frac{1}{2}$ ,  $3\frac{1}{2}$ ,  $\frac{9}{2}$
- a)  $2\frac{3}{4}$ ,  $2\frac{7}{8}$ ,  $3\frac{3}{8}$ ,  $3\frac{3}{4}$   
b)  $1\frac{1}{5}$ ,  $1\frac{1}{4}$ ,  $2\frac{3}{10}$
- $5\frac{3}{4} > \frac{21}{4}$   
 $\frac{16}{3} < 5\frac{1}{2}$   
 $1\frac{1}{2} > \frac{11}{8}$   
 $\frac{25}{6} < 4\frac{2}{3}$

## End of unit check

→ pages 200–201

- C: 
- D:  $1\frac{3}{4}$
- B:  $\frac{7}{10}$
- B:  $\frac{7}{3}$
- star: 4; triangle: 40; circle: 8; square: 100
- $\frac{5}{4} < 1\frac{3}{10} < \frac{8}{5} < 1\frac{13}{20} < 1\frac{12}{15}$



# Unit 6 – Fractions (2)

## I Add and subtract fractions

→ pages 204–207

### Discover

- a) 3 elephants + 2 elephants = 5 elephants  
 3 ducks + 2 ducks = 5 ducks  
 3 tens + 2 tens = 5 tens  
 3 sixths + 2 sixths = 5 sixths  
 b)  $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$   
 $\frac{3}{11} + \frac{2}{11} = \frac{5}{11}$   
 $\frac{3}{12} + \frac{2}{12} = \frac{5}{12}$

### Think together

- Lee's idea is incorrect. He has added the numerators and the denominators. The diagram shows that  $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$ , not  $\frac{3}{10}$ .
- a)  $\frac{4}{11} + \frac{6}{11} = \frac{10}{11}$   
 b)  $\frac{8}{13} - \frac{7}{13} = \frac{1}{13}$   
 c)  $\frac{9}{17} + \frac{6}{17} = \frac{15}{17}$   
 d)  $\frac{17}{19} - \frac{7}{19} = \frac{10}{19}$
- a)  $\frac{3}{7} + \frac{4}{7} = 1$   
 b)  $1 - \frac{7}{8} = \frac{1}{8}$   
 c)  $\frac{7}{9} + \frac{2}{9} = 1$

## 2 Add fractions within 1

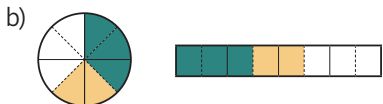
→ pages 208–211

### Discover

- Children's drawings will vary, e.g.



Accept diagrams that show  $\frac{3}{8}$  successfully shaded.



The diagram should have  $\frac{5}{8}$  shaded.

### Think together

- a)  $\frac{7}{10} + \frac{1}{5} = \frac{9}{10}$   
 b)  $\frac{3}{5} + \frac{1}{10} = \frac{7}{10}$
- a)  $\frac{1}{2} + \frac{1}{6} = \frac{4}{6} = \frac{2}{3}$   
 b)  $\frac{1}{6} + \frac{1}{3} = \frac{3}{6} = \frac{1}{2}$   
 c)  $\frac{1}{2} + \frac{1}{10} = \frac{6}{10} = \frac{3}{5}$   
 d)  $\frac{1}{2} + \frac{1}{100} = \frac{51}{100}$

- Aki's method does not work. Aki should have converted  $\frac{1}{2}$  into quarters.

## 3 Add fractions with a total greater than 1

→ pages 212–215

### Discover

- a)   
 b)  $\frac{3}{4} + \frac{1}{2} = 1\frac{1}{4}$

### Think together

- a)  $\frac{5}{6} + \frac{1}{2} = \frac{8}{6}$  or  $1\frac{2}{6}$  or  $1\frac{1}{3}$   
 b)  $\frac{3}{4} + \frac{7}{8} = \frac{13}{8}$  or  $1\frac{5}{8}$
- a) Will not have a total greater than 1.  
 $\frac{2}{3} + \frac{1}{9} = \frac{7}{9}$   
 b) Will have a total greater than 1.  
 $\frac{2}{3} + \frac{4}{9} = \frac{10}{9} = 1\frac{1}{9}$
- a)  $\frac{3}{4} + \frac{7}{20} = 1\frac{2}{20}$  or  $1\frac{1}{10}$   
 $\frac{4}{5} + \frac{7}{15} = 1\frac{4}{15}$   
 $\frac{11}{18} + \frac{4}{9} = 1\frac{1}{18}$   
 $\frac{4}{7} + \frac{11}{21} = 1\frac{2}{21}$   
 b) For example,  $\frac{7}{8} + \frac{5}{16} = 1\frac{3}{16}$

## 4 Add to a mixed number

→ pages 216–219

### Discover

- a)  $3\frac{1}{2} = 3 + \frac{1}{2}$
- $3\frac{1}{2} + \frac{1}{4} = 3\frac{3}{4}$

### Think together

- a)  $2\frac{1}{4} + \frac{1}{2} = 2\frac{3}{4}$   
 b)  $2\frac{1}{4} + 3 = 5\frac{1}{4}$
- a)  $5\frac{1}{3} + \frac{1}{3} = 5\frac{2}{3}$ ;  $5\frac{1}{3} + 3 = 8\frac{1}{3}$   
 b)  $3\frac{1}{7} + \frac{4}{7} = 3\frac{5}{7}$ ;  $3\frac{1}{7} + 4 = 7\frac{1}{7}$   
 c)  $8\frac{3}{10} + \frac{2}{5} = 8\frac{7}{10}$ ;  $8\frac{3}{10} + 2 = 10\frac{3}{10}$

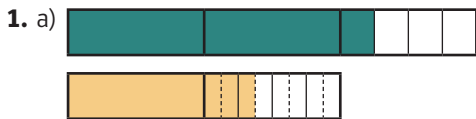


3. a)  $3\frac{1}{2} + \frac{1}{2} = 4$
- b)  $3\frac{1}{4} + \frac{1}{4} = 3\frac{1}{2}$
- c)  $3\frac{1}{4} + 2 + \frac{3}{4} = 6$
- d)  $3\frac{1}{4} + \frac{1}{2} + \frac{1}{4} = 4$
- e)  $3\frac{1}{4} + \frac{3}{4} + \frac{1}{2} = 4\frac{1}{2}$

## 5 Add two mixed numbers

→ pages 220–223

### Discover



b) The total distance of Toshi's journey is  $2\frac{1}{4} + 1\frac{3}{8} = 3\frac{5}{8}$  km.

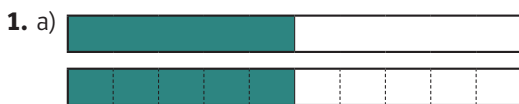
### Think together

1.  $1\frac{2}{5} + 1\frac{3}{10} = 2\frac{7}{10}$
2.  $2\frac{3}{4} + \frac{5}{8} = 3\frac{3}{8}$
3. a)  $2\frac{1}{4} + 1\frac{3}{20} = 3\frac{8}{20}$  or  $3\frac{2}{5}$
- b)  $4\frac{6}{15}$  or  $4\frac{2}{5}$
- c) Children's preferred method.

## 6 Subtract fractions within 1

→ pages 224–227

### Discover



b)  $\frac{1}{2} - \frac{3}{10} = \frac{2}{10}$

### Think together

1. a)  $\frac{1}{8}$
- b)  $\frac{4}{9}$
- c)  $\frac{1}{6}$
2. a)  $\frac{1}{3}$
- b)  $\frac{3}{8}$
- c)  $\frac{9}{20}$
- d)  $\frac{49}{100}$
- e)  $\frac{1}{6}$
- f)  $\frac{1}{8}$
- g)  $\frac{3}{20}$
- h)  $\frac{7}{100}$
3. a) Answers are dependent on the fractions chosen, e.g. the difference between  $\frac{3}{25}$  and  $\frac{38}{50}$  is  $\frac{16}{25}$ .
- b) For example,  $\frac{1}{6} + \frac{1}{3} = \frac{1}{2}$ .

## 7 Subtract from a mixed number

→ pages 228–231

### Discover

1. a) Amelia has  $2\frac{7}{10}$  litres of water left.
- b) Amelia has  $2\frac{3}{10}$  litres more water than Danny.

### Think together

1. a)  $3\frac{7}{8} - \frac{2}{8} = 3\frac{5}{8}$
- b)  $3\frac{7}{8} - \frac{3}{4} = 3\frac{7}{8} - \frac{6}{8} = 3\frac{1}{8}$
2.  $4\frac{5}{6} - \frac{1}{3} = 4\frac{3}{6} = 4\frac{1}{2}$  pizzas left.
3. a)  $4\frac{11}{12} - \frac{11}{12} = 4$
- $4\frac{11}{12} - \frac{5}{6} = 4\frac{1}{12}$
- $4\frac{11}{12} - \frac{3}{4} = 4\frac{2}{12} = 4\frac{1}{6}$
- $4\frac{11}{12} - \frac{2}{3} = 4\frac{3}{12} = 4\frac{1}{4}$
- $4\frac{11}{12} - \frac{1}{2} = 4\frac{5}{12}$
- b) Children spot patterns such as: 'As the numerator in the fraction that is being subtracted decreases, the numerator in the answer increases.'

## 8 Subtract from a mixed number – breaking the whole

→ pages 232–235

### Discover

1. a) Toshi has  $2\frac{1}{2}$  km left.
- b) There are  $1\frac{3}{4}$  km left.

### Think together

1.  $3\frac{1}{5}$  is  $2\frac{6}{5}$ . So  $3\frac{1}{5} - \frac{3}{5} = 2\frac{6}{5} - \frac{3}{5} = 2\frac{3}{5}$ .
2. a)  $4\frac{6}{7}$
- b)  $3\frac{6}{7}$
- c)  $4\frac{4}{7}$
- d)  $3\frac{4}{7}$
3. a)  $2\frac{4}{5}$
- b)  $2\frac{2}{3}$
- $2\frac{7}{12}$
- $2\frac{17}{20}$





## 9 Subtract two mixed numbers

→ pages 236–239

### Discover

1. a) Kate's answer is correct.

$$3\frac{3}{4} - 1\frac{1}{2} = 3\frac{3}{4} - 1\frac{2}{4} = 2\frac{1}{4}$$

b)  $3\frac{1}{2} - 1\frac{3}{4} = 1\frac{3}{4}$

### Think together

1.  $3\frac{4}{5} = 3\frac{8}{10}$ ; subtract the wholes:  $3 - 1 = 2$ ;

subtract the parts:  $\frac{8}{10} - \frac{7}{10} = \frac{1}{10}$

$$3\frac{4}{5} - 1\frac{7}{10} = 2\frac{1}{10}$$

2.  $2\frac{1}{3} = 2\frac{2}{6}$ ;  $4\frac{2}{9} - 2\frac{3}{9} = 3\frac{11}{9} - 2\frac{3}{9} = 1\frac{8}{9}$

3. a)  $3\frac{7}{10} - 1 = 2\frac{7}{10}$ ;

$$2\frac{7}{10} - \frac{1}{2} = 2\frac{7}{10} - \frac{5}{10} = 2\frac{2}{10} = 2\frac{1}{5}$$

b)  $10\frac{3}{8} - 4 = 6\frac{3}{8}$ ;

$$6\frac{3}{8} - \frac{11}{16} = 6\frac{6}{16} - \frac{11}{16} = 5\frac{22}{16} - \frac{11}{16} = 5\frac{11}{16}$$

## End of unit check

→ pages 248–249

1. B:  $1\frac{2}{5}$

2. A: 5

3. C:  $\frac{1}{10}$

4. A:  $3\frac{2}{3}$

5. B:  $3\frac{17}{20}$

6.  $1\frac{3}{4}$ ,  $5\frac{7}{8}$

7.  $1\frac{1}{3}$  cm

## 10 Solve fraction problems

→ pages 240–243

### Discover

1. a) Holly used  $4\frac{3}{10}$  metres of ribbon in total.  
b) Holly used  $2\frac{2}{5}$  metres more of the dotted fabric.

### Think together

1. Holly needs  $4\frac{1}{3}$  of fabric.  
2. The other piece of ribbon is  $1\frac{16}{25}$  metres long.  
3. Holly uses  $18\frac{2}{5}$  metres of fabric in total.

## 11 Solve multi-step fraction problems

→ pages 244–247

### Discover

1. a) There is  $1\frac{1}{8}$  litres of milk left in the carton.  
b) The large carton holds  $4\frac{1}{4}$  litres. There are  $5\frac{3}{4}$  litres of milk in total.

### Think together

1. There are  $\frac{3}{20}$  of a litre of juice left in the bottle.  
2. The arrow at C is pointing to  $3\frac{5}{8}$ .  
3. a) The perimeter of the triangle is  $7\frac{1}{12}$  cm.  
b) The missing length is  $1\frac{1}{20}$  cm.