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Year 5 Answers

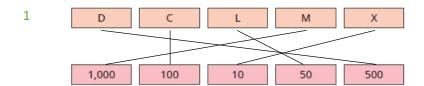
Autumn term	Spring term	Summer term
Week 1	Week 1	Week 1
Week 2	Week 2	Week 2
Week 3	Week 3	Week 3
Week 4	Week 4	Week 4
Week 5	Week 5	Week 5
Week 6	Week 6	Week 6
Week 7	Week 7	Week 7
Week 8	Week 8	Week 8
Week 9	Week 9	Week 9
<u>Week 10</u>	<u>Week 10</u>	Week 10
<u>Week 11</u>	Week 11	Week 11
Week 12	<u>Week 12</u>	Week 12
<u>Self-assessment</u>	<u>Self-assessment</u>	<u>Self-assessment</u>

Autumn term Week 1

Let's remember

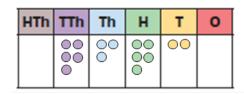
- 1 (5, 6)
- 2 C(3, 1)
- 3 octagon
- 4 0.3 + **0.7** = 1

Let's practise

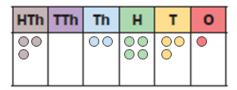


- 2a 700 = **DCC**
- 2b 590 = **DXC**
- 2c 48 = **XLVIII**

- 3a 6,452
- 3b 210,653
- 4a 53,520



4b 302,431



5a 500

5d 5

5b 50

5e 50,000

5c 5,000

- 5f 500,000
- 6a 80,520 = 80,000 + **500** + **20**
- 6b 361,070 = **300,000** + **60,000** + 1,000 + **70**
- 6c 900,007 = **800,000** + 100,000 + **7**

- 7a Four hundred and eighty-two thousand, four hundred and thirty-nine
- 7b Three hundred and six thousand, nine hundred and twenty
- 8 Answers may vary, for example,

703,400 743,900 793,215 713,500

783,101

Crack the code: partition

Think it out:

The greatest number possible: 600,000

The smallest number possible: 6

A number with 5 thousands, for example, **5,001**

A number with 3 hundred thousands and 2 hundreds, for example, 300,210

Real world maths: Answers will vary.

Autumn term Week 2

Let's remember

- 1 278,309
- 2 (1, 3)
- 3 3
- 4 15

Let's practise

1a 10 1b 20 1c 90 1d 200

2 222,550

3 500 is ten times the size of **50**

200,000 is ten times the size of **20,000**

2,000 is one-tenth the size of **20,000**

4a 6,500 = **6,000** + **500**

4b 580,070 = **500,000** + **80,000** + **70**

4c 907,304 = **900,000** + **7,000** + **300** + **4**

5

10,000 less	1,000 less	100 less	10 less	Number	10 more	100 more
30,000	39,000	39,900	39,990	40,000	40,010	40,100
390,000	399,000	399,900	399,990	400,000	400,010	400,100
742,695	751,695	752,595	752,685	752,695	752,705	752,795



Crack the code: represented

Think it out: Answers will vary, for example,

$$325,630 = 200,000 + 120,000 + 5,000 + 600 + 30$$

$$325,630 = 300,000 + 25,000 + 600 + 30$$

$$325,630 = 300,000 + 20,000 + 5,000 + 400 + 230$$

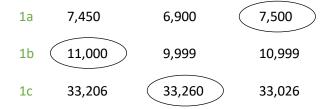
Talk it out: Answers will vary.

Autumn term Week 3

Let's remember

- 1 461,364
- 2 7,000
- 3 y 4 A X A X
- 4 741p

Let's practise



Answers will vary, for example, any number of 12,326 or greater (up to 99,999)

Tth	Th	Н	Т	0

Or using only 2 counters, 20,000 is greater than 12,325

Tth	Th	Н	Т	0

- 3a 518 < 4,000
- 3c 30,5000 (>) 30,059
- 3b 11,111 (<) 20,000
- 3d 209,999 < 210,000
- 4 Answers will vary, but should be any number between 367,833 and 367,839
- 5a 10,457 is closer to **10,000** than **11,000**10,457 rounds to **10,000** to the nearest 1,000
- 5b 10,700 is closer to **11,000** than **10,000**10,700 rounds to **11,000** to the nearest 1,000

6		Rot	unded to the near	est
		1,000	10,000	100,000
	805,995	806,000	810,000	800,000
	63,723	64,000	60,000	100,000

Rounding to 19,470 to the nearest 10 is a number between 19,465 and 19,474

An odd number in that range is 19,465, 19,467, 19,469, 19,471 and 19,473

A digit sum of 27 is 19,467 (1+9+4+6+7=27)

The number is 19,467

Crack the code: closer

The missing number on the left must be a 5, 6, 7, 8 or 9 so the whole number is greater than the whole number on the right (552,490 562,490 572,490 582,490 592,490).

The missing numbers on the right must make the whole number smaller than 552,490. The first missing number can be a 0, 1 or 2 and the second missing number can be any number between 0 and 8 (550,409 550,489 551,409 551,409 552,409 552,489)

Talk it out: 60,730 60,732 60,740 60,830

Autumn term Week 4

Let's remember

- 1 26,000
- 2 219,305 = 200,000 + **10,000** + **9,000** + **300** + **5** (or any correct partitioning)
- 3 (8, 8)
- 4 £3.25 + £2.61 = **£5.86**

Let's practise

2

7 7 8 4	+			9	9
---------	---	--	--	---	---

A quicker way is to add 100 and then subtract 1

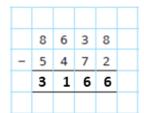
3a

+ 2 4 8 3	5 7 6 2	+	_	_	4	
	5 7 6 2	_	_	-		_

3b

+	9		7			
	9	9	9	3	7	5

4a



4b

	3	0	7	9	9
-			8	_	
	3	9	6	2	4

5a

	26,	934
3,827	10,212	12,895

5b

	390,726	
25,866	299,432	65,428

6 The shop needs **£34,500** more.

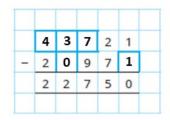
Crack the code: strategy

Talk it out: The mistake that has been made is the smaller numbers have been subtracted from the larger numbers.

The bottom number should have been subtracted from the top number in each column, and exchanges should have been made where necessary.

The correct answer is 177,258

Think it out:



Autumn term Week 5

Let's remember

4
$$7 \times 8$$
 weeks = **56** days

Let's practise

1a The inverse of addition is **subtraction**.

1b The inverse of subtraction is **addition**.

2a

+ 3 4 8 0

	7	5	8	5	8
-		3	4	8	0
	7	2	3	7	8

2b

4b Dora would need to add 1,000 and then subtract 3

Crack the code: inverse

Real world maths: £299,999

Talk it out: Answers will vary.

Autumn term Week 6

Let's remember

- 1 28,654 + 18,001 18,000 + 28,654
- 28,567 6,471 = **22,096**
- 3 100,000
- 4 17:20

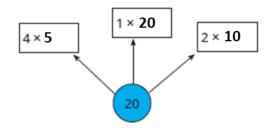
Let's practise

1a

2	4	6	8	10	12	14	16
7	14	21	28	35	42	49	56
12	24	36	48	60	72	84	96

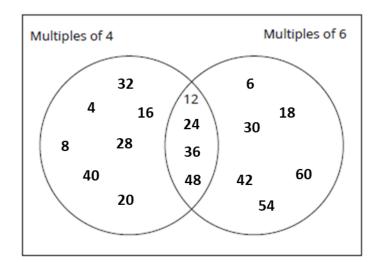
- 1b The completed number tracks show the first 8 multiples of 2, 7 and 12
- $4 \times 6 = 24$

3a



- 3b Factors of 20: 1, 2, 4, 5, 10, 20
- 3c Factors of 30: 1, 2, 3, 5, 6, 10, 15, 30

4



5 10 20 30 40

6a 12: 1, 2, 3, 4, 6, 12 16: 1, 2, 4, 8, 16

6b 1, 2 and 4

7 Veggie burgers: **12** packs Bread rolls: **8** packs Cheese slices: **6** packs

Crack the code: multiples

Talk it out: Answers will vary, for example,

A factor is a number that divides exactly into a whole number with no remainders. An example of a factor of 12 is 6. 12 divided by 6 is 2

A multiple is the product of a number and another number. An example of a multiple of 4 is 8. 4 multiplied by 2 is 8

Real world maths:

Manchester: 8:00, 8:12, 8:24, **8:36**, 8:48, 9:00, **9:12**

Rochdale: 8:00, 8:09, 8:18, 8:27, 8:36, 8:45, 8:54, 9:03, 9:12

8:36 am and 9:12 am

Autumn term Week 7

Let's remember

1 1, 3, 5, 15

2 10,563 + **9,437** = 20,000

3 74,210

4 **7:23** pm

Let's practise

- 1b Answers may vary, for example, they are all one row.
- 1c Prime numbers.

9 is not a prime number because it has more than 2 factors.

All prime numbers have exactly 2 factors.

- 3 2, 3, 5, 7, 11, 13, 19, 23, 31, 37
- 4a $1^2 = 1$
- 1b $4^2 = 16$
- $1c 7^2 = 49$
- 1d $9^2 = 81$

 $3^3 = 3 \times 3 \times 3$ but Dora only multiplied 3×3

$$3 \times 3 \times 3 = 27$$

- 6a $1^3 = 1$
- 6b $2^3 = 8$
- 6c $10^3 = 1,000$
- No, prime numbers can never be square numbers because prime numbers have only 2 factors and square numbers have more than 2 factors.

Crack the code: composite

Talk it out: 1 is not a prime number because a prime number has two factors only, 1 and itself, but 1 has only 1 factor, 1

Real world maths: Answers will vary.

Autumn term Week 8

Let's remember

- 1 $8^2 = 64$
- 2 1, 2 and 4
- 3 3,670
- 4 acute

Let's practise

- When multiplying by 10, the digits move 1 place to the <u>left</u>.
- 1b When multiplying by 100, the digits move **2** places to the left.
- 1c When multiplying by **1,000**, the digits move 3 places to the <u>left</u>.
- 2a 3 × 10 = **30**

$$3 \times 100 = 300$$

2b 74 × 10 = **740**

$$74 \times 100 = 7,400$$

$$860 \times 1,000 = 860,000$$

- When dividing by **10**, the digits move 1 place to the right.
- 3b When dividing by 100, the digits move **2** places to the <u>right</u>.
- When dividing by **1,000** the digits move 3 places to the <u>right</u>.
- 4a 402,000 ÷ 10 = **40,200**
- 4b 402,000 ÷ 100 = **4,020**
- 4c 402,000 ÷ 1,000 = **402**
- 5a 27 × 100 = **2,700** 5c 12,029 × 10 = **120,290**
- 5b $5,200 \div 100 = 52$ 5d $330,000 \div 1,000 = 330$
- 6a $7 \times 500 = 3,500$ 6c $24 \times 200 = 4,800$
- 6b $3,000 \times 15 = 45,000$ 6d $12 \times 50 = 600$
- 7 140 cm

Crack the code: efficient

Talk it out: I would choose £670 x 10 because it equals £6,700. I know that this choice is a greater amount of money because £670,000 divided by 1,000 = £670 which is less than £6,700

Think it out: Answers will vary, for example, 312,200 332,000 301,400

Autumn term Week 9

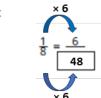
Let's remember

Let's practise

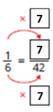
1a



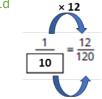
1c



1b



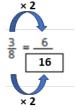
1d



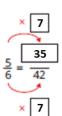
2a



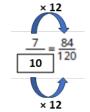
2c



2b



2d



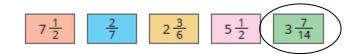
3a
$$\frac{5}{4} = 1\frac{1}{4}$$

3b
$$\frac{13}{5} = 2\frac{3}{5}$$

4a
$$1\frac{4}{5} = \frac{9}{5}$$

4b
$$3\frac{3}{8} = \frac{27}{8}$$

5

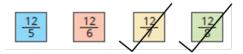


$$3\frac{7}{14} = \frac{49}{14}$$
 or the same as $\frac{7}{2}$

6 No, because
$$5\frac{1}{100} = \frac{501}{100}$$
, not $51\frac{1}{100}$

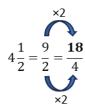
Crack the code: improper

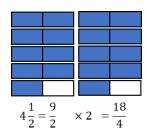
Talk it out:



I know that these two fractions are greater than 1 but less than 2 because the numerator is greater than the denominator but less than twice the denominator.

Think it out: $4\frac{1}{2} = \frac{18}{4}$





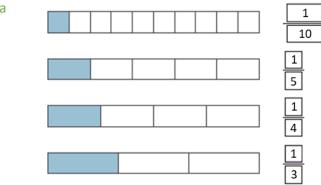
Autumn term Week 10

Let's remember

$$\frac{19}{4} = 4\frac{3}{4}$$

Let's practise

1a



1b $\frac{1}{4}$

 $\frac{1}{3} > \frac{1}{10}$

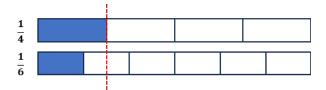
 $\frac{1}{5} \left< \right) \frac{1}{3}$

 $\frac{1}{4}$ < $\frac{1}{3}$

 $\frac{1}{10} \left(< \right) \frac{1}{5}$

 $\frac{2}{5}$ $\left\langle \frac{2}{3} \right\rangle$

2



 $\frac{1}{4}$ is greater than $\frac{1}{6}$

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



4b



5a $\frac{5}{2}$ < $\frac{5}{2}$

 $\frac{200}{150} = \frac{100}{75}$

 $\frac{20}{9} > \frac{10}{9}$

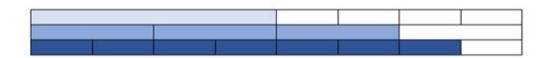
 $\frac{73}{73} = \frac{74}{74}$

 $6 \qquad \quad \frac{2}{5} \ \, \frac{3}{5} \ \, \frac{3}{4} \ \, \frac{3}{3} \ \, \frac{3}{2}$

Crack the code: convert

Think it out: Answers can vary, for example, $\frac{5}{5}$, $\frac{8}{10}$, $\frac{9}{15}$, $\frac{2}{5}$ or $\frac{4}{5}$, $\frac{6}{10}$, $\frac{1}{5}$ or $\frac{5}{5}$, $\frac{8}{10}$, $\frac{9}{15}$, $\frac{1}{5}$ or $\frac{5}{5}$, $\frac{8}{10}$, $\frac{6}{15}$, $\frac{1}{5}$ or $\frac{5}{5}$, $\frac{6}{10}$, $\frac{6}{15}$, $\frac{1}{5}$

Real world maths:



Autumn term Week 11

Let's remember

$$\frac{8}{17} + \frac{3}{17} = \frac{11}{17}$$

$$\frac{3}{7} = \frac{15}{35}$$

Let's practise

$$\frac{1}{5} + \frac{3}{5} = \frac{4}{5}$$

$$\frac{4}{7} + \frac{2}{7} = \frac{6}{7}$$

1b
$$\frac{3}{10} + \frac{3}{10} = \frac{7}{10}$$

1d
$$\frac{2}{9} + \frac{7}{9} = \frac{9}{9}$$
 or 1

2a
$$\frac{2}{9} + \frac{1}{3} = \frac{5}{9}$$

$$2c \qquad \frac{1}{3} + \frac{5}{9} = \frac{8}{9}$$

2b
$$\frac{2}{3} + \frac{1}{9} = \frac{7}{9}$$

2d
$$\frac{2}{3} + \frac{3}{9} = \frac{9}{9}$$
 or 1

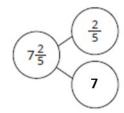
3 They ate
$$\frac{3}{8}$$
 of the cake.

4a
$$\frac{2}{3} + \frac{5}{6} = \frac{9}{6} = 1\frac{3}{6} \text{ or } 1\frac{1}{2}$$
 4c $\frac{9}{10} + \frac{4}{5} = \frac{17}{10} = 1\frac{7}{10}$

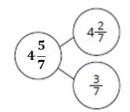
4c
$$\frac{9}{10} + \frac{4}{5} = \frac{17}{10} = 1\frac{7}{10}$$

4b
$$\frac{1}{2} + \frac{3}{4} + \frac{3}{8} = \frac{13}{8} = 1\frac{5}{8}$$

5a



5b



6a
$$5\frac{1}{2} + 2\frac{1}{4} = 7\frac{3}{4}$$

6b
$$2\frac{1}{5} + \frac{3}{15} = 2\frac{6}{15}$$

$$\frac{2}{5} + \frac{7}{15} + \frac{3}{5} + \frac{8}{15} = \frac{30}{30} = 2$$

Ron can add these fractions without converting them because he can add the fractions with the same denominator.

$$\frac{2}{5} + \frac{3}{5} = 1$$
 $\frac{7}{15} + \frac{8}{15} = 1$ $1 + 1 = 2$

Crack the code: ascending

Think it out: Answers will vary, for example,
$$1\frac{3}{5} + \frac{1}{5} = 1\frac{4}{5}$$
, $1\frac{12}{20} + \frac{4}{20} = 1\frac{16}{20}$ or $\frac{32}{20} + \frac{4}{20} = \frac{36}{20}$

Real world maths: Mrs White will need $26\frac{2}{3}$ m of fencing.

Autumn term Week 12

Let's remember

$$3\frac{2}{5} + \frac{4}{5} = 4\frac{1}{5}$$

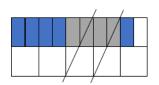
$$\frac{7}{12} + \frac{1}{3} = \frac{11}{12}$$

Let's practise

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



1b
$$\frac{9}{10} - \frac{2}{5} = \frac{5}{10}$$
 or $\frac{1}{2}$



$$2a 2\frac{5}{6} - \frac{2}{3} = 2\frac{1}{6}$$

$$2c 4\frac{7}{9} - \frac{2}{3} = 4\frac{1}{9}$$

2b
$$5\frac{3}{4} - \frac{3}{8} = 5\frac{3}{8}$$

2d
$$10\frac{11}{12} - \frac{5}{6} = 10\frac{1}{12}$$

$$3\frac{2}{5} = 1 + \frac{12}{5}$$

3b
$$4\frac{1}{4} = 2 + \frac{9}{4}$$

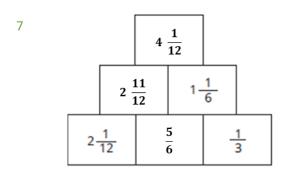
Tiny has taken the wholes away then taken $\frac{1}{4}$ away from $\frac{1}{2}$ instead of $\frac{1}{2}$ away from $\frac{1}{4}$

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

5a
$$3\frac{1}{3} - \frac{5}{6} = 2\frac{1}{2}$$

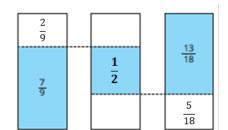
5b
$$5\frac{2}{5} - 2\frac{7}{10} = 2\frac{7}{10}$$

6
$$12\frac{1}{4} - 6\frac{1}{2} = 5\frac{3}{4} \text{kg}$$



Crack the code: descending

Think it out:



$$\frac{2}{9} = \frac{4}{18}$$

$$\frac{5}{18} - \frac{4}{18} = \frac{9}{18} = \frac{1}{2}$$

Talk it out: The top row of bars represents the fraction $2\frac{1}{2}$. The bottom row of bars represents the fraction $1\frac{2}{3}$. The diagram represents the calculation $2\frac{1}{2}-1\frac{2}{3}=\frac{5}{6}$

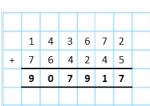
Autumn term Self-assessment

1 Place value: 796,452

Seven hundred and ninety-six thousand, four hundred and

fifty-two

2 Addition and subtraction:



8 3 4 0 9 - 5 7 2 3 6 2 6 1 7 3		Q	2	1	0	۵
2 6 1 7 3	-					
		2	6	1	7	3

3 Multiplication and division:

	Square number	Not a square number
Multiple of 4	4 36	20
Not a multiple of 4	9	34

4 Fractions:

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

4b
$$4\frac{2}{6} + 5\frac{3}{12} = 9\frac{7}{12}$$

Spring term Week 1

Let's remember

$$1 12\frac{19}{20} - 11 = 1\frac{19}{20}$$

$$4\frac{5}{7} + \frac{6}{7} = 5\frac{4}{7}$$

$$\frac{23}{3}$$

4 92,006

Let's practise

1

×	30	2
10	300	20
4	120	8

$$32 \times 14 = 448$$

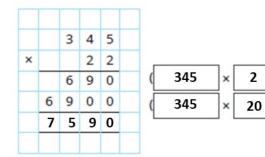
2a

×	400	20	3
50	2,000	1,000	150
7	2,800	140	21

3a

	9	4	5	
	6	3	0	(63 × 10)
	3	1	5	(63 × 5)
×		1	5	
		6	3	

3b



		2	7	4
×				6
	1	6	4	4

4c
$$365 \times 7 = 2,555$$

		3	6	5	
×				7	
	2	5	5	5	

			4	3	
×			3	2	
			8	6	
	1	2	9	0	
	1	3	7	6	

		5	1	3	
x			2	4	
	2	0	5	2	
1	0	2	6	0	
1	2	3	1	2	

5
$$139 \times 7 = 973$$
 days

Crack the code: exchange

Talk it out:

Method 1

×	400	90	7
6	2,400	540	42

d 2	Metho
-----	-------

4 9 7

2 9 8 2

6

					Ī
		4	9	7	İ
		4	9	7	
		4	9	7	
		4	9	7	
		4	9	7	
+		4	9	7	
	2	9	8	2	Ī

Explanations will vary.

It would not be appropriate to use Method 3 to work out 46×54 because there would be too many repeated additions.

Real world maths: $165 \times £4$ (profit) = £660

Spring term Week 2

Let's remember

$$4\frac{5}{7} - \frac{6}{7} = 3\frac{6}{7}$$

$$\frac{1}{5} + \frac{8}{15} = \frac{11}{15}$$

Let's practise

1a

		3	2	3	4	
×				2	4	
	1	2	9	3	6	
	6	4	6	8	0	
	7	7	6	1	6	
		1	1			

1b

			5	2	3	2	
×					3	3	
		1	5	6	9	6	
	1	5	6	9	6	0	
	1	7	2	6	5	6	
		1	1	1			

- Yes, Dora will collect enough stickers. There are 52 weeks in a year. With 4 stickers per week (52×4) , Dora will collect **208**, which is more than the 195 she needs.
- 3 $12 \times 7 \text{ days} = 84 \text{ days}$ $84 \times 1,300 = 109,200 \text{ planes}$

4a

	0	5	9	
3	1	¹ 7	² 7	

4b

	1	9	2
4	7	³6	8

- No, the calculation on the left gives a greater answer (376 \div 4 = 94 > 385 \div 5 = 77). Although 385 is larger than 376, it is being divided by a bigger number, 5. It is being divided into more parts and so each part is smaller.
- 6 $2,472 \div 6 = 412g$

Crack the code: integer

Talk it out:

The operation this represents a division.

The counters are split into groups of 3

The red arrows show an exchange being made.

$$732 \div 3 = 244$$

Real world maths: Answers will vary.

Spring term Week 3

Let's remember

$$8\frac{1}{5} + 4\frac{2}{5} = 12\frac{3}{5}$$

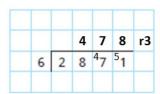
4 63,000

Let's practise

1a

	1	0	9	9	r1
5	5	4	⁴ 9	⁴ 6	

1c



1b

				8	r3
4	3	5	3 5	³ 5	

1d

	1	6	4	2	r1
3	4	¹ 9	¹ 2	7	

2a 9: 1, 3, 9

2c 12: 1, 2, 3, 4, 6, 12

- 2b 8: 1, 2, 4, 8
- 3a $2,936 \div 8 = 367$ Divide by 4, and then 2
- 3b $5,508 \div 9 = 612$ Divide by 3 and then 3
- 3c $3,444 \div 12 = 287$ Divide by 2 and then divide by 3 then 4 (or 4 then 3)
- 4 $162 \div 6 = 27 \text{ cm}$
- **29** tables
- 5b There are **3** empty seats.
- 6 14 kg
- 7 £48.30

Crack the code: remainder

Talk it out:

Remainder of 1	Remainder of 2	Remainder of 3	Remainder of 4
2,366 ÷ 5	5,642 ÷ 5	1,863 ÷ 5	3,494 ÷ 5
5,551 ÷ 5			

Answers will vary but notice that the difference between the last digit and 5 will indicate what the remainder will be.

Real world maths:

There are 24 hours in 1 day.

There are 366 days in a leap year.

24 × 366 = **8,784** hours

Spring term Week 4

Let's remember

1
$$3,210 \div 5 = 642$$

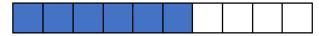
$$9\frac{7}{13} - 5\frac{4}{13} = 4\frac{3}{13}$$

Let's practise

1a
$$3 \times \frac{1}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{3}{6}$$



1b
$$2 \times \frac{3}{10} = \frac{3}{10} + \frac{3}{10} = \frac{6}{10}$$



2 Tiny has multiplied the numerator and the denominator by 3, instead of multiplying only the numerator by 3.

3a
$$5 \times \frac{1}{6} = \frac{5}{6}$$

3b
$$4 \times \frac{1}{9} = \frac{4}{9}$$

$$3x \frac{2}{11} = \frac{6}{11}$$

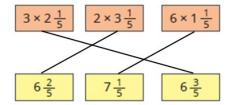
4a
$$3 \times \frac{4}{5} = \frac{12}{5} = 2\frac{2}{5}$$
 4c $\frac{3}{4} \times 4 = \frac{12}{4} = 3$

4c
$$\frac{3}{4} \times 4 = \frac{12}{4} = 3$$

4b
$$5 \times \frac{9}{10} = \frac{45}{10} = 4\frac{5}{10} \text{ or } 4\frac{1}{2}$$
 4d $\frac{6}{7} \times 8 = \frac{48}{7} = 6\frac{6}{7}$

$$\frac{6}{7} \times 8 = \frac{48}{7} = 6\frac{6}{7}$$

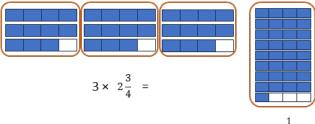
5



- 6a 2 cans
- 6b 3 cans
- 6c $\frac{2}{3}$ of a can

Crack the code: equivalent

Think it out: $3 \times 2\frac{3}{4} = 8\frac{1}{4}$



 $8\frac{1}{4}$

Talk it out: Answers will vary, for example, for $10 \times 4\frac{3}{7}$

To multiply a mixed number by an **integer**, you need to start by **converting** to an improper fraction. To do this you **multiply** the **denominator** by the **integer** and add the **numerator**. $7 \times 4 = 28 + 3 = \frac{31}{7}$

Then **multiply** the **numerator** by the **integer**. 10 $\times \frac{31}{7} = \frac{310}{7}$

Finally, simplify the answer, if possible, $\frac{310}{7} = 44\frac{2}{7}$

Spring term Week 5

Let's remember

$$1 7 \times \frac{1}{15} = \frac{7}{15}$$

2
$$437 \div 8 = 54$$
 remainder 5

Let's practise

1a

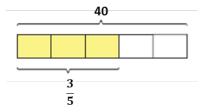


1b





2a



2b
$$\frac{3}{5}$$
 of 40 = **24**

3a
$$\frac{1}{5}$$
 of 50 = **10**

3d
$$\frac{3}{10}$$
 of 100 = **30**

3b
$$\frac{3}{4}$$
 of 24 = **18**

3e
$$\frac{4}{7}$$
 of 35 = **20**

$$\frac{5}{6}$$
 of 42 = **35**

3f
$$\frac{11}{12}$$
 of 72 = **66**

5a
$$\frac{1}{6}$$
 of **30** = 5

$$\frac{4}{5}$$
 of **125** = 100

Crack the code: quantity

Think it out:

a Mo Eva

b 64

Real world maths: 12 litres

Spring term Week 6

Let's remember

1
$$\frac{1}{4}$$
 of 96 = **24**

$$\frac{3}{8} \times 7 = 2\frac{5}{8}$$

4 12 24 36 48 60

Let's practise

1a 0.47 There are **0** ones, **4** tenths and **7** hundredths.

1b 3.04 There are **3** ones, **0** tenths and **4** hundredths.

2 5.92

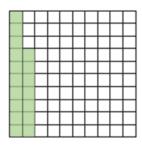
3a 0.6 (or 6 tenths or
$$\frac{6}{10}$$
) 3b 60 3c 0.06 (or 6 hundredths or $\frac{6}{100}$)

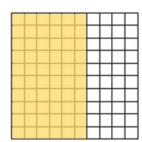
4a
$$0.8 = 8 \text{ tenths} = \frac{8}{10}$$

4b
$$0.9 = 9 \text{ tenths} = \frac{9}{10}$$

4c 0.03 = 3 hundredths =
$$\frac{3}{100}$$

$$\frac{17}{100}$$





6a
$$\frac{23}{100}$$
 = **0.23**

$$\frac{7}{100} = 0.07$$

6b
$$\frac{99}{100} = 0.99$$

6d
$$\frac{56}{100} =$$
0.56

7a 1.3 =
$$1\frac{3}{10}$$

7b
$$3.09 = 3\frac{9}{100}$$

7c
$$2.37 = 2\frac{37}{100}$$

8 No,
$$\frac{1}{5}$$
 is equivalent to $\frac{2}{10}$ which is 0.2 as a decimal.

Crack the code: hundredths

Talk it out:

- a Three-fifths is equivalent to six-tenths $\frac{3}{5} = \frac{6}{10}$
- b I can represent $3\frac{2}{5}$ as 3 and 4 tenths or 34 tenths $3\frac{2}{5} = 3\frac{4}{10} = \frac{34}{10}$

Think it out:



Spring term Week 7

Let's remember

$$\frac{53}{100} = 0.53$$

$$\frac{2}{3}$$
 of **75** = 50

$$3,483 \div 9 = 387$$

4
$$15^2 = 225$$

Let's practise

- 1a 10
- 1b 1
- 1c Ten thousandths is equal to one hundredth.
- 1d 70
- No, Kim has written 43 thousands. She should have written 0.043
- $\frac{43}{1,000}$
- 3a 0.523 3b 0.207

4a 2.413

0 4	Tth	Hth	Thth

4b 0.105

0	Tth	Hth	Thth

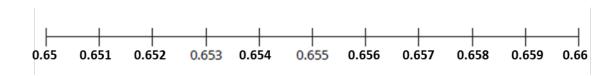
- 5a 0.382 0.438 0.444 0.819
- 5b 0.34 3.04 3.4 34.3
- 6 53.961 < 53.9**9**1

7.858 < 7.85**9**

0.892 > 0.874

Crack the code: decimal

Think it out:



Real world maths:

Florence Griffith-Joyner

32 s

Spring term Week 8

Let's remember

1 0.207

$$\frac{9}{10}$$

$$3\frac{1}{7}\times 5 = 15\frac{5}{7}$$

Let's practise

1



The number 7.4 is between 7 and 8

7.4 is closer to 7 than to 8

7.4 rounds down to the nearest whole number that is 7

2a 5 2b

7

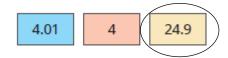
2c

89

2d

3

3



4a 6.8 4c 40.1

4b 36.2 4d 15.9

Fraction = $\frac{63}{100}$ 5

Decimal = 0.63

Percentage = 63 %

6a 31 % = 0.31 =
$$\frac{31}{100}$$

6c 90 % = 0.9 =
$$\frac{90}{100}$$
 or $\frac{9}{10}$

6b
$$72 \% = 0.72 = \frac{72}{100}$$

6d
$$1\% = 0.01 = \frac{1}{100}$$

7a
$$0.57 = \frac{57}{100} = 57 \%$$

7c
$$0.09 = \frac{9}{100} = 9 \%$$

7b
$$0.61 = \frac{61}{100} = 61 \%$$

7d
$$0.8 = \frac{80}{100} \text{ or } \frac{8}{10} = 80 \%$$

8a
$$\frac{3}{4}$$
 is equivalent to 34 % **FALSE**

$$34 \% = \frac{34}{100} = 34 \%$$

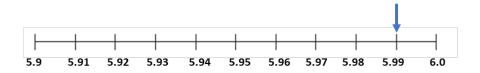
$$\frac{3}{4}$$
 is equivalent to $\frac{75}{100}$ = 75 %

8b 100 % is equivalent to
$$\frac{6}{6}$$
 TRUE

$$\frac{6}{6}$$
 = 1 whole and 1 whole = 100 %

Crack the code: percentage

Talk it out: I think Kim is correct because 5.99 rounded to 1 decimal place is 6.0



Think it out:

b
$$60 \% + 18\% = 78\% = \frac{78}{100} = \frac{39}{50}$$

c
$$\frac{11}{50}$$
 = 22 %

Spring term Week 9

Let's remember

1
$$\frac{4}{5}$$
 = 80 %

$$\frac{4}{5}$$
 of 120 = **96**

$$\frac{3}{4} = \frac{24}{32}$$

Let's practise

1a 52 cm 1b 14 cm 1c 32 mm

2 Rectangles can have the following dimensions:

1 cm x 9 cm 2 cm x 8 cm 3 cm x 7 cm 4 cm x 6 cm 5 cm x 5 cm

- Tiny has missed out 2 measurements, the unmarked sides.
- 3b 42 cm
- 4a Perimeter of square = 80 cm Perimeter of triangle = 60 cm
- 4b 100 cm
- 4c Yes, you can place the triangle along a different side of the square. It would have the same perimeter.

Crack the code: triangle

Talk it out:

An equilateral triangle has three equal sides so each must be 7 cm. The square must have side lengths of 14 cm because two triangles can fit along one side.

Therefore, the perimeter must be 14 + 14 + 14 + 7 + 7 + 7 + 7 = 70 cm

Think it out: The missing lengths are 3.1 cm or 31 mm

Spring term Week 10

Let's remember

- 1 54 cm
- 2 76 % = **0.76**
- $3 0.71 = \frac{71}{100}$
- $\frac{5}{6} + \frac{1}{12} = \frac{11}{12}$

Let's practise

- 1 $A = 7 \text{ cm}^2$
 - $B = 10 \text{ cm}^2$
 - $C = 24 \text{ cm}^2$
- 2 $A = 30 \text{ cm}^2$
 - $B = 30 \text{ cm}^2$
 - $C = 30 \text{ cm}^2$

The rectangles all have the same area. This is because the side lengths are all factors of 30

- 3a 36 cm² and 15 cm²
- 3b 51 cm²
- 4a 40 cm² 4b 262 cm²
- 5 400 cm²

Crack the code: rectilinear

Think it out: Area = 141 cm²

Real world maths: Answers will vary.

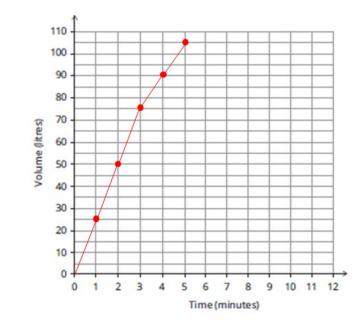
Spring term Week 11

Let's remember

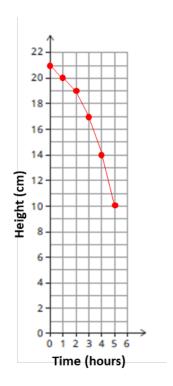
- 1 144 mm²
- 2 22 cm
- $\frac{9}{1000} =$ **0.009**
- 4 $\frac{5}{6} + \frac{5}{12} = 1\frac{3}{12}$ (or $1\frac{1}{4}$)

Let's practise

1



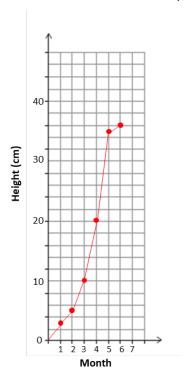
2



- 3a 40 °C
- 3b 20 °C
- 3c The temperature of the liquid does not drop to zero because it cools to the temperature of the environment at 20 $^{\circ}$ C.

Crack the code: plot

Think it out: Answers will vary, for example, the growth of a plant.



Real world maths: Answers will vary.

Spring term Week 12

Let's remember

- 1 Team D
- 2 18 cm²
- 3 2.3
- $2\frac{1}{6} \frac{1}{3} = 1\frac{5}{6}$

Let's practise

1a

Car colour	Number of	cars
Car colour	Tally	Frequency
Red	++++ ++++ 11	18
Silver	++++ ++++	15
Black	### ###	14
White	Ш	4
Blue	++++++111	13

- 1b 64
- 1c red
- 2a **10:30**
- 2b 33 minutes
- 2c **09:15**

3a

	Year 3	Year 4	Year 5	Year 6	Total
Boys	28	31	25	30	114
Girls	34	29	31	29	123
Total	62	60	56	59	237

- 3b 237
- 3c Year 3
- 3d 29

Crack the code: tables

Real world maths: Answers will vary.

Think it out:

	Bus	Car	Walk	Total
Girls	20	10	19	49
Boys	21	14	16	51
Total	41	24	35	100

Spring term Self-assessment

			6		
6	4	5	³ 8	² 4	

		1	5	2	8	
×				2	6	
		9	1	6	8	
	3	0	5	6	0	
	3	9	7	2	8	
			1			

$$5 \times \frac{3}{4} = \frac{15}{4} = 3\frac{3}{4}$$

3a a fraction
$$\frac{25}{100} = \frac{1}{4}$$

Summer term week 1

Let's remember

- 1 10:10
- 2 248
- 3 15 cm
- 4 $32 \times 15 = 480$

Let's practise

- There are 90 degrees in a **quarter** of a full turn.
- 1b There are 360 degrees in a **full** turn.
- 1c There are 180 degrees in **half** of a full turn.
- **90 degrees** or a **quarter** of a turn clockwise, or **270 degrees** or **three-quarters** of a turn anticlockwise.
- Dora measured using the inner scale, not the outer scale. The horizontal is on the 0 of the outer scale so you need to read off the outer scale. The angle measures 70 degrees.
- 4a A right angle is **90** degrees.
- 4b An acute angle is **less** than **90** degrees.
- 4c An obtuse angle is **greater** than **90** degrees but less than **180** degrees.
- 5a 50° 5b 135°
- 6 Answers will vary but should be around
- 6a 55° 6b 160°

Crack the code: degrees

Think it out: Answers may vary, for example,

To find the size of the angle I can subtract 140 $^{\circ}$ – 80 $^{\circ}$ = 60 $^{\circ}$

To find the size of the angle I can subtract $100 \degree - 40 \degree = 60 \degree$

I can count up along the protractor as a number line

Or use another protractor and place it correctly with one arm of the angle on the 0 line.

The angle is 60°

Real world maths: Answers will vary.

Summer term week 2

Let's remember

- 1 acute
- 2 32 minutes
- 3 36 mm
- 4 528 ÷ 4 = **132**

Let's practise

- 1a A correct 40 ° angle drawn 1b A correct 154 ° drawn
- Answers may vary but should include some of the following, that they are both acute angles, that they measure about 37°, and the arms are the same length. They are the same angle but one has been rotated.
- Angles on a straight line add up to 180 degrees and angles around a point add up to 360 degrees. Tiny has got the two facts the wrong way round.

Crack the code: acute

Think it out: the shape is a pentagon.

Summer term week 3

Let's remember

- 1 212°
- 2 45°
- 3 27
- 4 $371 \div 3 = 123$ remainder 2

Let's practise

1
$$x = 90$$
°

2 Shape B is the regular hexagon because all sides are the same length.

3a	faces	5	3b	faces	8
	edges	8		edges	18
	vertices	5		vertices	12

- 4 a cube or cuboid
- 5 600 cm

Crack the code: obtuse

Think it out: Length = 22 cm Area = 396 cm^2

Talk it out: Answers will vary.

Summer term week 4

Let's remember

- 1 90°
- 2 180°
- $\frac{1}{19} \times 15 = \frac{15}{19}$
- 4 09:35

Let's practise

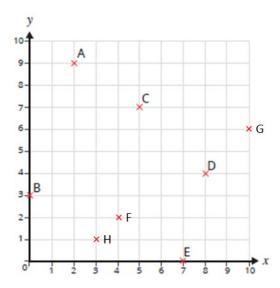
$$B = (0, 3)$$

$$C = (5, 7)$$

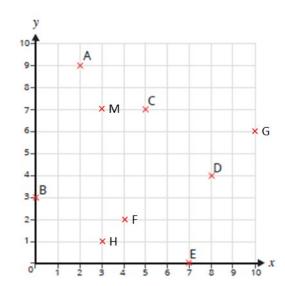
$$D = (8, 4)$$

$$E = (7, 0)$$

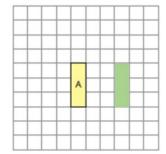
1b



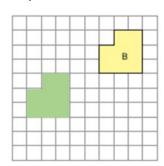
1c



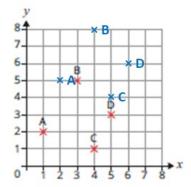
2a Shape A translated 3 right



2b Shape B translated 5 left and 3 down



3a



3b

Point	Coordinates before	Coordinates after
Α	(1, 2)	(2, 5)
В	(3, 5)	(4, 8)
С	(4, 1)	(5, 4)
D	(5, 3)	(6, 6)

- 3c Plot E (1, 8)
- 3d Answers may vary, for example,

Translate C 1 square up.

Translate D 1 square left and 2 squares up.

Translate B 2 squares left.

Crack the code: translate

Think it out: B = (0, 3)

Talk it out:

If it is an isosceles trapezium the answer would be (10, 5). If it is not an isosceles trapezium the coordinates are (9, 5).

The coordinates can't be (12, 5) or (13, 5) as this would go past point C.

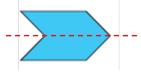
Summer term week 5

Let's remember

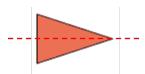
- 1 A = (4, 2)
- 2 irregular
- 3 obtuse
- 4 $\frac{5}{6}$ of 300 = **250**

Let's practise

1a



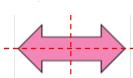
1b



1c

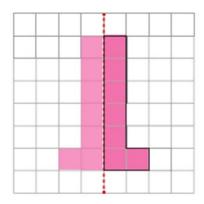


1d

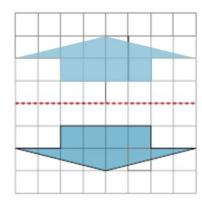


- 2a Answers will vary, for example, no this shape is not symmetrical as it has no line of symmetry.
- 2b Shapes will vary.

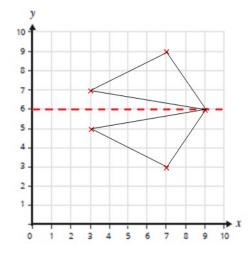
3a



3b



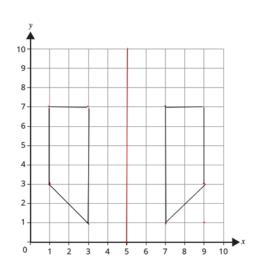
4



(3, 5), (7, 3) and (9, 6)

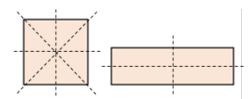
Crack the code: origin

Think it out:



Talk it out:

I know that a square has four lines of symmetry. I know that a rectangle has two lines of symmetry because the diagonals in a rectangle are not lines of symmetry.

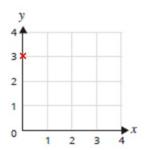


Summer term week 6

Let's remember

1 (6, 11)

2



3 360°

 $\frac{7}{10} = 0.7$

Let's practise

1a 21 + 23 = **44**

21 hundredths + 23 hundredths = 44 hundredths

$$0.21 + 0.23 =$$
0.44

1b 7 + 32 = **39**

7 hundredths + 32 hundredths = **39** hundredths

$$0.07 + 0.32 =$$
0.39

3a

	1
0.3	0.7

3b

	1
0.43	0.57

4c
$$1.5 - 0.5 = 0.9$$

4b
$$0.9 - 0.4 = 0.5$$

5a 3.71 + 2.53 = **6.24**

	2	7	4
	3	/	'
+	2	5	3
	6	• 2	4

5b 92.08 + 4.95 = **97.03**

	9	2	0	8
+		4	9	5
	9	7	• 0	3

6 £5.19

Crack the code: complement

Real world maths: Answers will vary.

Think it out: Perimeter = 106.75 m

Summer term week 7

Let's remember

$$4 0.001 = \frac{1}{1000}$$

Let's practise

	4	. 6	5
-	2	. 3	1
	2	. 3	4

	2	⁶ 7	. 3	¹2	
-	2	1	. 7	7	
	0	5	. 5	5	

	°/1	¹ 2	.57	¹ 3	
-		9	. 5	9	
		3	. 1	4	

	° 1 ⁄	°¹∕Ø	¹ 3	. 7	4	5
-		5	8	. 6	0	3
		4	5	. 1	4	2

$$5.36 - 2.04 = 3.32$$

	3	5 .	3		
+	3	5	. 0	3	
	7	0	. 3	3	
	1				

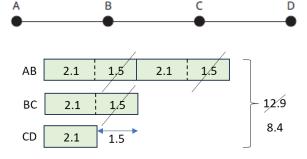
	7.	9	8	2	
-	4.	3	2		
	3.	6	6	2	
					ľ

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

4 £2.21

Crack the code: fraction

Think it out:



B to C = 3.6 m

Real world maths:

0.91 seconds

Answers will vary for second part of question.

Summer term week 8

Let's remember

1
$$0.75 - 0.08 = 0.67$$

4
$$9\% = \frac{9}{100}$$

Let's practise

- 1a 0.3 0.6 0.9 1.2 **1.5**
- 1b 10.05 10.07 10.09 **10.11**
- No, the rule is to add 0.4 (or 4 tenths) each time.
- 3a 3.7 4 4.3 4.6 4.9 **5.2 5.5**

The rule is to add 0.3 (or 3 tenths) each time.

3b 50.09 50.18 50.27 50.36 **50.45 50.54**

The rule is to add 0.09 (or 9 tenths) each time.

- 4a $0.63 \times 10 = 6.3$
- 4b $0.63 \times 100 = 63$
- 4c $0.63 \times 1,000 = 630$
- 5 $45 \div 100 =$ **0.45**

Н	Т	0	Tth	Hth
			4	5

- 6a 85 ÷ 100 = **0.85**
- 6d 90 ÷ 100 = **0.9**
- 6b 73 ÷ 10 = **7.3**
- 6e 507 ÷ 10 = **50.7**
- 6c 132 ÷ 100 = **1.32**
- 6f 5,400 ÷ 1,000 = **5.4**
- 7 No, it is 100 because the digits have moved two places to the left.
 - $4.4 \times 100 = 440$

Crack the code: sequence

Talk it out: Answers will vary.

Think it out: Answers will vary but both are correct.

Summer term week 9

Let's remember

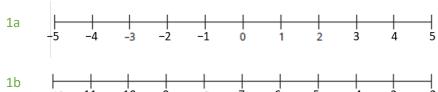
1 0.23 × 1,000 = **230**

0.3 - 0.14 = 0.16

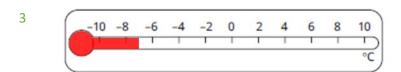
3 4

4 85 mm

Let's practise



2 Eva has counted forwards from 20 to get 25 instead of finding the midpoint between -10 and -20 which is -15



- 4a 3(>)-3 4b -4(>)-5 4c
- 5a 4 5b 4 5c 13

- 6 28 °C
- 7 20 floors

Crack the code: minus

Real world maths:

- a Nitrogen
- b Silicon
- c 32 °C

Think it out: 52, -20, -5, 13 : -20, -5, 13, 52

The difference between -24 and -76 is 52

The even number that is less than -18, but greater than -22 is -20

The number that is halfway between 40 and -50 is -5

The difference between -6 and 7 is 13

In ascending order: -20 -5 13 52

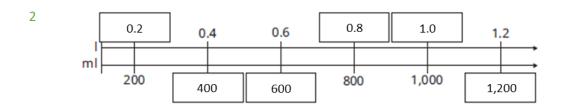
Summer term week 10

Let's remember

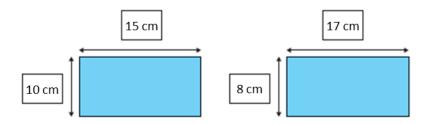
- 1 5-7=-2
- $3 \div 100 =$ **0.03**
- 3 1.2 0.4 =**0.8**
- 4 5 cm

Let's practise

- 1 lkilogram is equal to **1,000** grams.
 - 1 kilometre is equal to 1,000 metres.
 - 1 litre is equal to **1,000** millilitres.
 - 1 metre is equal to **100** centimetres.
 - 1 centimetre is equal to **10** millimetres.
 - 1 metre is equal to **1,000** millimetres.



- 3a 2 kg = 2,000 g 3d 700 g = 0.7 kg
- 3b 5.8 l = **5,800 ml** 3e 15 m = **15,000 mm**
- 3c 7,300 mm = **7.3 m** 3f 12,000 m = **12 km**
- 4a 65 mm 65 cm 651 mm 600 cm
- 4b 2.85 m 2,900 mm 3m 500 cm
- 5a 500 mm
- Answers may vary, for example, and include two lengths than add up to 25 cm



Crack the code: conversion

Real world maths:

$$5 \text{ m} = 500 \text{ cm}$$

$$5 \text{ m} - 1.8 \text{ m} - 2.35 \text{ m} = 0.85 \text{ m}$$

$$500 \text{ cm} - 180 \text{ cm} - 245 \text{ cm} = 85 \text{ cm}$$

There is 0.85 m or 85 cm of ribbon left.

Think it out:

$$13,280 \div 5 = 2,656 \text{ ml}$$

There is 2,656 ml of water in each bucket.

Summer term week 11

Let's remember

$$1-4=-3$$

$$0.5 + 0.16 = 0.66$$

4 Team C Team A Team B Team D Team E

Let's practise

1 1 inch
$$\approx$$
 2.5 cm 1 pint \approx 568 ml 1 kg \approx 2.2 lb

2b
$$5 \text{ kg} \approx 11 \text{ lb}$$
 2d $3 \text{ kg} \approx 6.6 \text{ lb}$

- 3 8 kg \approx **17.6 lb**
- 4 15 cm ≈ **6 inches**
- 5a There are **60** seconds in 1 minute.
- 5b There are 52 **weeks** in 1 year.
- 5c There are 366 days in 1 leap year.
- 1 minute and 12 seconds = **72** seconds
- 4 minutes and 38 seconds = **278** seconds
- 6c 205 seconds = **3** minutes and **25** seconds
- 7a 7 minutes
- 7b 08:20 or 08:50

Crack the code: imperial

Real world maths: Answers will vary.

Talk it out: Answers will vary.

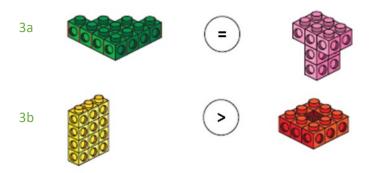
Summer term week 12

Let's remember

- 1 1 kg \approx 2.2 lb 5 kg \approx **11 lb**
- 2.6 km = **2,600 m**
- $71 \div 1,000 = 0.071$
- 4 09:35

Let's practise

- $1a \qquad 3 \text{ cm}^3 \qquad \qquad 1c \qquad 5 \text{ cm}^3$
- 1b 4 cm³ 1d 6 cm³
- 2 I agree with Eva, because Ron has missed counting the corner row of cubes.



- Jack could be correct because we can see and count 9 cubes. Amir could be correct because there may be 4 more cubes hidden from view giving a total of 13 cubes.
- 4b The volume of the shape could also be 10, 11 or 12 cm³

Crack the code: cubic

Think it out: Shapes will vary.

Summer term Self-assessment

1
$$a = 47^{\circ}$$

$$N = (9, 8)$$

6 Annie will need 8 more cubes.