



A COMPLETE NUMERACY PROGRAMME FOR PRIMARY SCHOOLS

5th Class Textbook Answers

Let's Look Back Page 5

A.

1.

Venue	Attendance	Nearest 10	Nearest 100	Nearest 1,000
O ₂ Arena	8,454	8,450	8,400	8,000
Olympia Theatre	9,891	9,890	9,900	10,000
T.F. Royal Theatre	3,262	3,260	3,300	3,000
The Black Box	2,777	2,780	2,800	3,000
Odyssey Arena	7,802	7,800	7,800	8,000
Vicar Street	949	950	900	1,000

2. (a) Olympia Theatre
 (b) 5,677
 (c) 223
 (d) Odyssey Arena
 (e) 9,891, 8,454, 7,802, 3,262, 2,777, 949

B.

1. (a) 7, seven
 (b) 150, one hundred and fifty
 (c) 80, eighty
 (d) 400, four hundred
 (e) 1,000, one thousand
 (f) 999, nine hundred and ninety nine
 (g) 70, seventy
 (h) 67, sixty seven
 (i) 4,440, four thousand four hundred and forty
 (j) 621, six hundred and twenty one
 (k) 900, nine hundred
 (l) 32, thirty two
2. €9,002 €9,251 €9,544
 €9,587 €9,991

C.

1. (a) 5,756 (b) 1,993 (c) 3,042
 (d) 4,365 (e) 9,235 (f) 8,440
2. (a) 5,458 (b) 3,055 (c) 7,518
 (d) 9,406 (e) 2,047 (f) 2,588

Let's Look Back Page 6

A.

1. 2, 4, 6, 8, 10, 12
 2. 36, 33, 30, 27, 24, 21
 3. $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$
 4. 6, 12, 18, 24, 30, 36
 5. 2,015, 2,010, 2,005, 2,000, 1,995, 1,990
 6. 240, 200, 160, 120, 80, 40
 7. 10-05, 20-25, 30-45, 40-65, 50-85, 61-05
 8. $1\frac{1}{2}$, $1\frac{1}{3}$, $1\frac{1}{6}$, 1, $\frac{5}{6}$, $\frac{4}{6}$

B.

1. (a) 114 (b) 312 (c) 2,880
 (d) 1,134 (e) 2,429 (f) 9,471
2. (a) 1,924 (b) 8,118
 (c) 1,440 (d) 7,700

C.

1. (a) 12 (b) 8 (c) 56 (d) 71
 2. (a) 50 R8 (b) 29 R2
 (c) 178 R1 (d) 63

D.

1. (a) 5 (b) 6 (c) 10 (d) 40
 (e) 16 (f) 20
2. (a) $\frac{5}{10} = \frac{1}{2}$ (b) $\frac{3}{9} = \frac{1}{3}$
 (c) $\frac{4}{10} = \frac{2}{5}$ (d) $\frac{2}{12} = \frac{1}{6}$
 (e) $\frac{6}{10} = \frac{3}{5}$ (f) $\frac{4}{8} = \frac{1}{2}$

E.


1. (a) €1-59 (b) €2-80 (c) €4-53
 (d) €3-09 (e) €9-56 (f) €8-67
2. (a) 251c (b) 789c (c) 556c
 (d) 300c (e) 607c (f) 899c
3. €2-55
4. €76-48

F.

1. (a) 11hr 57min
 (b) 9hr 14min
 (c) 2hr 21min
 (d) 3hr 46min
2. 9:58pm
3. 48 minutes
4. 4:02pm

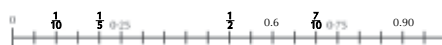
Let's Look Back Page 7

A.

1. (a) $\frac{1}{4}$ (b) $\frac{3}{10}$ (c) $\frac{1}{4}$ (d) $\frac{3}{8}$
 (e) $\frac{3}{4}$ (f) $\frac{1}{3}$ (g) $\frac{1}{6}$
2. 
3. (a) 12 (b) 36 (c) 144 (d) 72
 (e) 30 (f) 24
4. (a) 0-9; $\frac{4}{5}$; 0-3; 0-25; $\frac{1}{5}$
 (b) 1-0; $\frac{3}{4}$; $\frac{3}{5}$; $\frac{1}{2}$; 0-4
 (c) $\frac{7}{8}$; 0-75; 0-6; 0-5; $\frac{1}{4}$
 (d) 0-8; 0-7; 0-2; $\frac{1}{6}$; $\frac{1}{12}$

5. (a) 0-1 (b) 0-9
 (c) 0-6 (d) 0-25
 (e) 0-5 (f) 0-75
6. (a) $\frac{1}{2} < 0-55$ (b) $0-2 < \frac{3}{4}$
 (c) $0-4 < \frac{3}{5}$ (d) $\frac{1}{10} > 0-01$
 (e) $0-25 < \frac{3}{4}$

7.



B.

1. Pentagon
 Circle
 Triangle

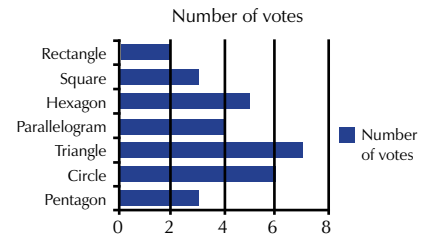
Parallelogram

Hexagon

Square

Rectangle

2. Favourite 2D Shapes in 5th Class bar chart



3. (a) Isosceles (b) Rhombus
 (c) Scalene (d) Hexagon
 (e) Octagon

Let's Look Back Page 8

A.

1. (a) A quarter to six
 (b) Ten past four
 (c) Five to eight
 (d) Twenty-five to three
 (e) Five past twelve
2. (a) Ten past six
 (b) Twenty-five to five
 (c) Twenty past eight
 (d) Three o'clock
 (e) Half past twelve
3. (a) Twenty past five
 (b) A quarter to four
 (c) Half past seven
 (d) Ten past two
 (e) Twenty to twelve
4. (a) Obtuse (b) Acute
 (c) Acute (d) Obtuse
 (e) Acute

B.

1. 35km, 175km
2. 170 litres
3. (a) 5kg (b) 25kg
 (c) 50kg (d) 75kg
4. (a) 2,300ml (b) 8,400ml
 (c) 5,200ml (d) 3,500ml
 (e) 1,250ml (f) 5,750ml
 (g) 700ml (h) 6,300ml
5. (a) 2-46 litres (b) 8-9 litres
 (c) 0-45 litres (d) 0-21 litres
6. (a) $\frac{1}{2}$ litre (b) $\frac{3}{4}$ litre
 (c) $\frac{3}{10}$ litre (d) $\frac{9}{10}$ litre
 (e) $\frac{1}{10}$ litre

C.

1. Second grid – b
 2. (a) 24m (b) 32m (c) 26m

B.

1. (i) 2. (a) 3. (g) 4. (c)
 5. (h) 6. (e) 7. (j) 8. (b)
 9. (d) 10. (f)

C.

2. 3 thousands + 7 hundreds + 6 tens + 8 units

Th	H	T	U
3	7	6	8

3. 8 thousands + 6 hundreds + 4 tens + 3 units

Th	H	T	U
8	6	4	3

4. 9 hundreds + 8 tens + 7 units

Th	H	T	U
0	9	8	7

5. 9 thousands + 0 hundreds + 8 tens + 7 units.

Th	H	T	U
9	0	8	7

6. 8 thousands + 0 hundreds + 0 tens + 4 units

Th	H	T	U
8	0	0	4

7. 9 thousands + 0 hundreds + 4 tens + 0 units

Th	H	T	U
9	0	4	0

8. 6 thousands + 8 hundreds + 0 tens + 0 units

Th	H	T	U
6	8	0	0

D.

- Four hundred and fifty
- One thousand eight hundred and nine
- Seven hundred and ninety four
- Four thousand eight hundred and six
- Six thousand and eighty one
- Nine thousand and nine

A.

1. 2 ten thousands + 1 thousand + 8 hundreds + 7 tens + 9 units

T th	Th	H	T	U
2	1	8	7	9

2. 6 ten thousands + 7 thousands + 4 hundreds + 0 tens + 0 units

T th	Th	H	T	U
6	7	4	0	0

3. 5 ten thousands + 4 thousands + 0 hundreds + 6 tens + 5 units

T th	Th	H	T	U
5	4	0	6	5

4. 2 ten thousands + 0 thousands + 1 hundred + 2 tens + 2 units

T th	Th	H	T	U
2	0	1	2	2

5. 7 ten thousands + 0 thousands + 8 hundreds + 9 tens + 9 units

T th	Th	H	T	U
7	0	8	9	9

6. 7 ten thousands + 8 thousands + 0 hundreds + 0 tens + 0 units

T th	Th	H	T	U
7	8	0	0	0

B.

- Eleven thousand eight hundred and seventy-seven
 - Twenty-seven thousand seven hundred
 - Ninety-four thousand and fifteen
 - Thirty thousand one hundred and thirty-two
 - Eighty thousand eight hundred and eighty-nine
 - Thirty-eight thousand
- Fifty-three thousand sixty-eight
 - Fifty thousand and eight
 - Seventy thousand four hundred and eight
 - Forty thousand four hundred and four
 - Sixty thousand four hundred and sixty-seven
 - Ten thousand

C.

- 10,000; ten thousand
 - 600; six hundred
 - 45; forty-five
 - 130; one hundred and thirty
 - 50; fifty
 - 48,000; forty-eight thousand
- 3010; three thousand and ten
 - 20,000; twenty thousand
 - 909; nine hundred and nine
 - 50,000; fifty thousand
 - 717; seven hundred and seventeen
 - 45,040; forty-five thousand and forty

D.

- 14,178, 14,780, 14,871, 41,001, 41,708
 - 41,990, 49,109, 49,190, 49,901, 49,909
- 34,766; 34,398; 34,367; 34,233; 34,124
 - 76,289; 76,266; 76,234; 76,199; 76,156

Challenge Yourself

- 50 = 5 tens
 - 700 = 70 tens
 - 1,000 = 100 tens
 - 60,000 = 6,000 tens
 - 330 = 33 tens

- 2,000 = 20 hundreds
 - 8,000 = 80 hundreds
 - 38,000 = 380 hundreds
 - 1,700 = 17 hundreds
 - 57,100 = 571 hundreds
- 4,000 = 4 thousands
 - 20,000 = 20 thousands
 - 80,000 = 80 thousands
 - 60,000 = 60 thousands
 - 94,000 = 94 thousands

A.

- 73,754, seventy-three thousand seven hundred and fifty-four.
- 41,509, Forty-one thousand five hundred and nine.
- 81,069, Eighty-one thousand and sixty-nine.
- 73,922, Seventy-three thousand nine hundred and twenty-two.

B.

- Really Strange Siblings*: 98,559
High School Choir: 77,666
Water Girl: 55,732
Lord of the Masters: 45,732
Girls of NYC: 44,212
Ghosts: 39,945
Hannah Botanica: 38,833
Attack of the Killer Bees: 23,888
Mean Boys: 23,788
Shallow Dave: 10,657
- High School Choir*
- Lord of the Masters*
- Mean Boys* had 100 more than *Attack of the Killer Bees*
- 39,955
- Lord of the Masters* 46,732
Attack of the Killer Bees 24,888
Shallow Dave 11,657
Ghosts 40,945
Mean Boys 24,788
Hannah Botanica 39,833
Girls of NYC 45,212
High School Choir 78,666
Really Strange Siblings 99,559
Water Girl 56,732

C.

- Toyota 90,426km
 Ford 78,700km
 BMW 63,700km
 Range Rover 24,688km
 Beetle 21,344km
 Fiat 19,944km
 Mini 12,344km
- Range Rover has twice as many kilometres as the Mini
- Mini
- 20,044 km
- Ford 79,700
 Toyota 91,426
 Mini 13,344
 Beetle 22,344

Range Rover 25,688
 BMW 64,700
 Fiat 20,944

Topic: Place Value Page 12

- A.**
 1. (a) 20 (b) 30 (c) 160
 (d) 2,450 (e) 10,390 (f) 26,550
 2. (a) 100 (b) 100 (c) 800
 (d) 1,500 (e) 76,200 (f) 88,400
 3. (a) 1,000 (b) 1,000 (c) 8,000
 (d) 27,000 (e) 90,000 (f) 94,000

- B.**
 1. 170km 2. 240km
 3. 210km 4. 190km
 5. 250km 6. 160km
 7. 290km 8. 80km
 9. 90km 10. 230km

C.

Amount Won	Nearest €10	Nearest €100	Nearest €1,000
€26,678	26,680	26,700	27,000
€58,477	58,480	58,500	58,000
€87,800	87,800	87,800	88,000
€32,500	32,500	32,500	33,000
€21,399	21,400	21,400	21,000
€19,900	19,900	19,900	20,000

Topic: Place Value Page 13

- B.**
 1. (a) Twenty-three thousand nine hundred and eighty-seven
- | T th | Th | H | T | U |
|------|----|---|---|---|
| 2 | 3 | 9 | 8 | 7 |

- (b) Eighteen thousand six hundred and fifty-eight

T th	Th	H	T	U
1	8	6	5	8

- (c) Forty-five thousand six hundred and twenty-one

T th	Th	H	T	U
4	5	6	2	1

- (d) Eighty-seven thousand six hundred and forty-three

T th	Th	H	T	U
8	7	6	4	3

2. (a) 3 ten thousands + 2 thousands + 1 hundred + 4 tens + 5 units
 (b) 5 ten thousands + 4 thousands + 2 hundreds + 9 tens + 9 units
 (c) 2 ten thousands + 1 thousand + 1 hundred + 1 ten + 0 units
 (d) 3 ten thousands + 0 thousands + 9 hundreds + 8 tens + 5 units
 (e) 2 ten thousands + 9 thousands + 7 hundreds + 4 tens + 4 units
 (f) 3 ten thousands + 9 thousands + 0 hundreds + 5 tens + 5 units

3. (a) Seven thousand, 7,000
 (b) Thirty, 30
 (c) Nine hundred, 900
 (d) Eight, 8
 (e) Sixty-four, 64
 (f) Eight thousand seven hundred, 8,700
 (g) Four hundred and thirty, 430

4. 57,453 54,753 46,754
 46,753 46,573 45,673

- C.**
 1. Christchurch 18,940
 Melbourne 17,235
 Perth 14,903
 Santiago 11,477
 Kuala Lumpur 10,909
 Bangkok 9,896
 Tokyo 9,596
 Rio de Janeiro 9,202
 Los Angeles 8,316
 New York 5,116
 2. New York 10,232
 Los Angeles 16,632
 Bangkok 19,792
 Melbourne 34,470
 Rio de Janeiro 18,404
 Perth 29,806
 Christchurch 37,880
 Tokyo 19,192
 Kuala Lumpur 21,818
 Santiago 22,954

3. To the nearest 100km
 New York 10,200
 Los Angeles 16,600
 Bangkok 19,800
 Melbourne 34,500
 Rio de Janeiro 18,400
 Perth 29,800
 Christchurch 37,900
 Tokyo 19,200
 Kuala Lumpur 21,800
 Santiago 23,000

4. To the nearest 1,000km
 New York 10,000
 Los Angeles 17,000
 Bangkok 20,000
 Melbourne 34,000
 Rio de Janeiro 18,000
 Perth 30,000
 Christchurch 38,000
 Tokyo 19,000
 Kuala Lumpur 22,000
 Santiago 23,000

5. 27,648km
D.
 1. 5 2. 7 3. 4
 4. 100 5. 47,000, rounded

- E.**
 There are 120 possible lock combinations.

Topic: Operations Page 14

- B.**
 1. 51,265 2. 77,313
 3. 44,879 4. 26,661
 5. 68,717 6. 61,354
 7. 40,563

- C.**
 1. (a) 15,542 (b) 6,949
 2. (a) 77,382 (b) 9,022
 3. (a) 48,478 (b) 90,915
 4. (a) 49,412 (b) 65,569

- D.**
 Kirsty – Hrog – Zax – Jules

Topic: Operations Page 15

- A.**
 1. 55,478 2. 21,752
 3. 11,880 4. 41,534
 5. 10,122 6. 52,464
 7. 64,345

- B.**
 1. (a) 24,373 (b) 81,136
 (c) 64,765
 2. (a) 68,844 (b) 31,981
 (c) 80,795
 3. (a) 71,881 (b) 13,894

- C.**
 1. (a) 59,940 (b) 47,070
 (c) 12,870
 2. (a) 4,140 (b) 6,780
 3. 7,371

Topic: Operations Page 16

- A.**
 1. 1,536 2. 879
 3. 9,581 4. 6,550
 5. 8,786

- B.**
 1. 94,000 2. 67,823
 3. 56,003 4. 9,907
 5. 67,907

- C.**
 1. 96,600
 2. 5,833
 3. €61,532
 4. 2 hours 7 minutes
 5. Yes – you would have 1 minute to spare.

Topic: Operations Page 17

- A.**
 1. 504 2. 524
 3. 9,594 4. 4,637

- B.**
 1. (a) 12 (b) 28 (c) 44
 (d) 3 (e) 27 (f) 14
 2. (a) 56 (b) 78 (c) 423
 (d) 253 (e) 247 (f) 391
 3. (a) 17 (b) 15 (c) 18
 (d) 17 (e) 33 (f) 19

- C.**
 1. (a) 9 (b) 31 (c) 43
 2. (a) 280 (b) 350
 3. (a) 26 (b) 40

D.
There can be multiple answers.

- (a) $\div 4$ (b) $\times 50$ (c) $- 15$
(d) $\times 10$ (e) $\div 9$
- (a) $\times 6$ (b) $+ 42$ (c) $+ 83$
(d) $\div 10$ (e) $\times 20$
- (a) $+ 2$ (b) $\times 5$ (c) $\times 4$
(d) $\times 12$ (e) $\times 9$

Topic: Operations Page 18

- B.**
- (a) 13,726 (b) 44,281 (c) 45,201
 - (a) 30,790 (b) 94,686 (c) 38,311
 - (a) 32,950 (b) 63,274 (c) 61,490
(d) 41,540 (e) 24,636 (f) 623

- C.**
- Muncher 95,665
Livingstone 90,007
Harton 99,754
Lipper 83,585
Knockon 43,528
Clipper 65,319
Redivil 92,121
Leaner 53,900
Yeller 84,217
 - Harton; Muncher; Redivil;
Livingstone; Yeller; Lipper; Clipper;
Leaner; Knockon
 - 4,089
 - 56,226
 - Clipper

- D.**
- Sum 2. Difference
 - Sum 4. Difference
 - Estimate

- E.**
- 15, 5 2. 19, 5

Topic: Data 1 Page 19

- B.**
- (b) 2. (e) 3. (d) 4. (a)
 - (f) 6. (c) 7. (g)

- C.**
- Flowers planted in the school.
 - Hours worked in Daly's shop.
 - 1:5
 - 1:20
 - Graph A
 - No, it would not have been a good choice because it would have made the smaller amounts more difficult to read.
 - Types of flowers
 - Week
 - A
 - B

Topic: Data 1 Page 20

- A.**
- 5 years old 2. 3 kg
 - 6°C 4. 75c
 - €4

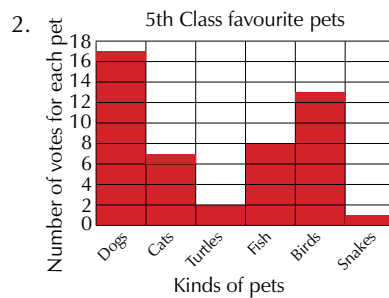
- B.**
- (a) Week 4
(b) €20

- (c) €46
(d) Perhaps they had visitors staying in week 4.
- (a) 7 hours (b) 2 hours
(c) 7 hours (d) 5 hours
(e) Australia. Ireland would have the greatest number of hours of sunshine during the summer, not the winter.

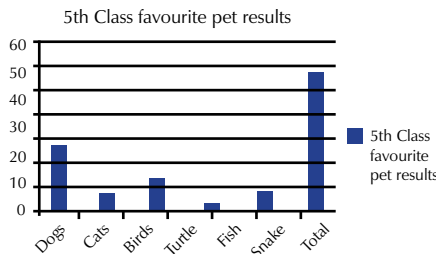
Topic: Data 1 Page 21

A.

- | Animal | Results |
|---------|---------|
| Dogs | 17 |
| Cats | 7 |
| Birds | 13 |
| Turtles | 2 |
| Fish | 8 |
| Snakes | 1 |
| Total | 48 |

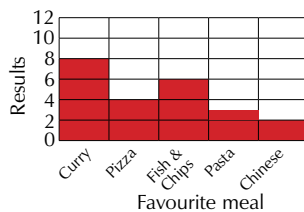


- 48 people
- Most = dogs, least = snakes
- 24 people
- 8 on average
- A scale interval of 1:10 is not suitable. A scale of 1:2 or 1:3 would make the graph easier to read.



B.

Favourite meal	Results
Curry	8
Pizza	4
Fish & Chips	6
Pasta	3
Chinese	2



C.

Results Table
Children late for School

Monday	30
Tuesday	10

Wednesday	15
Thursday	10
Friday	20
Total	85

- Tues and Thurs
- 20
- Monday
- Perhaps they are tired after the weekend; perhaps there is a lot of traffic on a Monday which has led to a large number of children being late; perhaps one of the school buses was late and this caused a lot of children to be late.

D.
Teacher Check

Topic: Data 1 Page 22

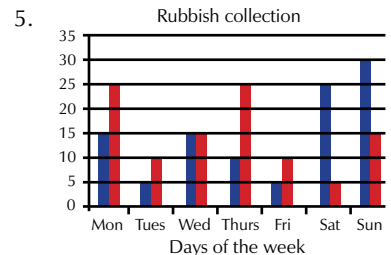
A.

Years	Boys	Girls	Total
Year 1	8	4	12
Year 2	10	6	16
Year 3	10	6	16
Year 4	12	8	20
Year 5	12	8	20
Total	52	32	84

- B.**
- Rubbish collected by Scouts and Girl Guides

	Week 1	Week 2	Total
Monday	15	25	40
Tuesday	5	10	15
Wednesday	15	15	30
Thursday	10	25	35
Friday	5	10	15
Saturday	25	5	30
Sunday	30	15	45
Total	105	105	210

- (a) 105 (b) 105
- 210 4. 15

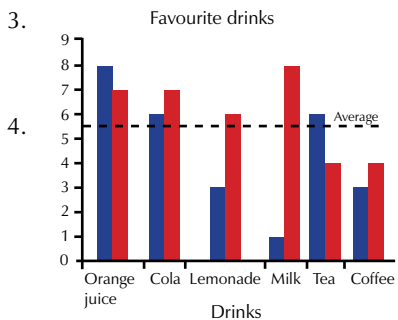


Rubbish collected by Scouts and Girl Guides in October

C.

- | Favourite Drink | 5 th | 6 th | Total |
|-----------------|-----------------|-----------------|-------|
| Orange Juice | 10 | 8 | 18 |
| Cola | 7 | 8 | 15 |
| Lemonade | 3 | 7 | 10 |
| Milk | 1 | 9 | 10 |
| Tea | 7 | 4 | 11 |
| Coffee | 3 | 5 | 8 |
| Total | 31 | 41 | 72 |

- Average votes is 6.



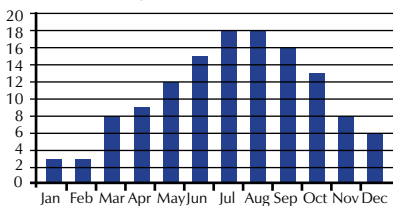
Favourite drinks of 5th and 6th Class

Topic: Data 1 Page 23

B.

1. (a) 4 (b) 5 (c) 7
 (d) 12 (e) €6 (f) 20cm
 (g) 9kg (h) 30g

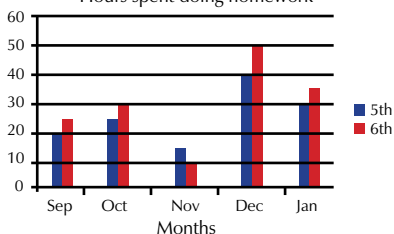
2. Average temperature



3. Hours spent doing homework

	5th	6th	Total
September	20	25	45
October	25	30	53
November	15	10	25
December	40	50	90
January	30	35	65
Total	130	150	280

Hours spent doing homework



Hours spent doing homework

C.

1. Schools are closed in July and August.
 2. 6th Class. 2 hours more.
 3. April, May, November.
 4. January and December.
 5. (a) February 7 hours average.
 (b) May 6 hours average.
 (c) September 7 hours average.
 (d) December 9 hours average.

D.

Teacher Check

E.

Teacher Check

Shopping Online Pages 24 and 25

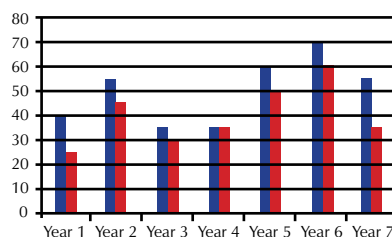
1. (a) 73,954 = 7 ten thousands + 3 thousands + 9 hundreds + 5 tens + 4 units.
 (b) 54,756 = 5 ten thousands + 4 thousands + 7 hundreds + 5 tens + 6 units.

- (c) 93,378 = 9 ten thousands + 3 thousands + 3 hundreds + 7 tens + 8 units.
 (d) 74,771 = 7 ten thousands + 4 thousands + 7 hundreds + 7 tens + 1 units.
 (e) 17,137 = 1 ten thousands + 7 thousands + 1 hundred + 3 tens + 7 units.
 (f) 45,354 = 4 ten thousands + 5 thousands + 3 hundreds + 5 tens + 4 units.

2. (a) 40,000, forty thousand

- (b) 90, ninety
 (c) 5,000, five thousand
 (d) 9,300, nine thousand three hundred
 (e) 110, one hundred and ten
 (f) 27,000, twenty-seven thousand
 (g) 35, thirty-five
 (h) 0, zero
 (i) 9,130, nine thousand, one hundred and thirty

3. Renault John Deere



4. Fertiliser Spreader

- Cattle Trailer
 Slurry Tanker
 Silage Trailer
 Round Bailer
 Bale Wrapper
 John Deere
 Massey Ferguson
 Renault
 Landini Stockman
 New Holland
 Lamborghini

5. Renault = €60,000

- Massey Ferguson = €60,000
 Landini Stockman = €72,000
 New Holland = €80,000
 John Deere = €59,000
 Lamborghini = €84,000

6. Fertiliser Spreader = €500

- (Nearest 100)
 €470 (Nearest 10)
 Round Baler = €8,300
 Bale Wrapper = €8,270
 Slurry Tanker = €9,400
 Silage Trailer = €9,440
 Round Bailer = €7,800
 Slurry Tanker = €7,820
 Slurry Tanker = €5,600
 Cattle Trailer = €5,510
 Cattle Trailer = €4,700
 Cattle Trailer = €4,670

7. (a) €72,974 (b) €88,781

(c) €98,501

8. €1,570.75 One thousand five hundred and seventy euro seventy-five cent.

Mental Maths 1 Pages 26 and 27

A.

1. 1
 2. 9:45am
 3. True
 4. 32:04
 5. Parallelogram
 6. $\frac{10}{12}$
 7. €1.26
 8. 80g
 9. 11:49am
 10. $\frac{1}{2}$
 11. $\frac{37}{100}$
 12. 16,000
 13. 31
 14. Triangular prism
 15. 60

B.

1. 29:21
 2. False
 3. 8
 4. 90°
 5. One horizontal and one vertical.
 6. The second shape.
 7. $\frac{6}{10}$
 8. 17,300
 9. 20
 10. 200g
 11. 1 hour 51 min
 12. 48
 13. Oblique
 14. 28,631
 15. 1.98, 2.00, 2.02

C.

1. 90, 75, 60
 2. True
 3. John
 4. $\frac{1}{3}$
 5. 4 pens at 44c
 6. 0-78
 7. False
 8. 1:5
 9. True
 10. Thirteen thousand and eighty-five
 11. 2,100
 12. A
 13. 15,050
 14. Obtuse
 15. 3

D.

1. 536-64
 2. Obtuse
 3. 14
 4. Millimetres
 5. $\frac{10}{16}$
 6. Square
 7. 16
 8. Zero tenths
 9. 0.45
 10. 3

Topic: Multiplication 1 Page 28

B.

- Give Mike 1 out of 6
 1. 2,619 1
 2. 5,682 0
 3. 7,992 0
 4. 1,176 0
 5. 3,740 0
 6. 4,715 0

C.

1. (a) 70 (b) 140 (c) 850
 (d) 1,100 (e) 4,800 (f) 10,010
 (g) 99,000
 2. (a) 100 (b) 1,000 (c) 3,600
 (d) 10,000 (e) 34,000 (f) 90,900
 (g) 99,000
 3. (a) 100 (b) 400 (c) 2,400
 (d) 6,000 (e) 8,400 (f) 16,000
 (g) 20,000
 4. (a) 2,000 (b) 6,300 (c) 5,500
 (d) 9,000 (e) 27,000 (f) 35,000
 (g) 48,000 (h) 66,000

D.

No. Total 13,867

Topic: Multiplication 1 Page 29

- A.**
 1. 4,980 2. 7,412
 3. 4,906 4. 4,779
 5. 15,266 6. 16,236
 7. 32,500 8. 16,317
 9. 73,242 10. 66,584
 11. 35,288 12. 83,700

- B.**
 1. 2,304 2. 3,667
 3. 5,850 4. 9,486
 5. 15,036 6. 19,380
 7. 23,722 8. 32,500
 9. 36,354 10. 85,272
 11. 62,468 12. 78,210

- C.**
 1. (a) 40,000 (b) 40,000
 (c) 120,000 (d) 200,000
 (e) 250,000 (f) 360,000
 (g) 490,000 (h) 720,000
 (i) 240,000 (j) 180,000
 (k) 720,000 (l) 720,000
 2. Estimate Real Answer
 (a) 80,000 96,316
 (b) 120,000 106,400
 (c) 420,000 407,293
 (d) 480,000 422,296

- D.**
 1. €16,000 2. €10,000
 3. €9,000 4. €20,000
 5. €40,000 6. €10,000
 7. €80,000 8. €30,000
 9. €150,000 10. €15,000
 11. €20,000 12. €20,000

Topic: Multiplication 1 Page 30

- A.**
 1. €2 2. €3 3. €1 4. €1
 5. €2 6. €1 7. €4 8. €3
 9. €1 10. €2 11. €1 12. €5
 13. €3 14. €1

- B.**
 1. 2m 2. 5m 3. 1m 4. 3m
 5. 2m 6. 4m 7. 4m

- C.**
 1. 1kg 2. 1kg 3. 2kg 4. 1kg
 5. 1kg 6. 1kg 7. 3kg

Topic: Multiplication 1 Page 31

- A.**
 1. Real Answer
 (a) 104.96 (b) 470.7
 (c) 212 (d) 169.45
 (e) 194.4 (f) 453
 2. Real Answer
 (a) 44.94 (b) €546.94
 (c) €113.56 (d) 400.76kg
 (e) 557.46km (f) €591.75
 3. Real Answer
 (a) 1,408.2 (b) 900.2
 (c) 13,644 (d) €4,892.88
 (e) €11,918.34 (f) 1,486.44

- B.**
 1. Dogs = €12.40 per month
 Parrots = €4.34 per month
 Rabbits = €8.37 per month
 Goldfish = €38.75 per month
 2. €14
 3. Most time = Dogs & Rabbits
 Least time = Goldfish & Parrots

Topic: Multiplication 1 Page 32

- B.**
 1.
- | | | | |
|---|--------|--------|---------|
| | ×10 | ×20 | ×100 |
| a | 40 | 80 | 400 |
| b | 760 | 1,520 | 7,600 |
| c | 1,250 | 2,500 | 12,500 |
| d | 2,080 | 4,160 | 20,800 |
| e | 3,300 | 6,600 | 33,000 |
| f | 6,570 | 13,140 | 65,700 |
| g | 10,060 | 20,120 | 100,600 |
2. (a) 42 (b) 168 (c) 623 (d) 2,002
 (e) 6,293 (f) 15,666 (g) 33,397
 3. (a) 80,000 (b) 180,000
 (c) 1,120 (d) 3,780
 4. (a) 279,204 (b) 35.53
 (c) 1,045.76 (d) 3,707.74
 5. (a) 511,329 (b) 491,976
 (c) 1,196.75 (d) 3,942.96

- C.**
 1. 54.6 metres
 2. 137.55 million
 3. (a) 25.32 (b) 29.54 (c) 27.43
 4. 43 minutes
 5. 0.9168 metres
 6. €13.35

- D.**
 1. Estimation
 2. 2
 3. 16
 4. One
 5. Two places

Topic: 2D Shapes Page 33

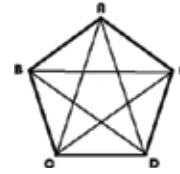
- B.**
 1. Rectangle
 2. (a) 4
 (b) 4
 (c) Right angles
 (d) 360°
 (e) 2 pairs
 (f) 1 vertical line of symmetry
 1 horizontal line of symmetry

C.

Name of shape	Number of sides	Number of angles	Pairs of parallel lines	Lines of symmetry
Oval	0	0	0	2-1 vertical 1 horizontal
Equilateral triangle	3	3	0	3 lines
Square	4	4	2	4
Parallelogram	4	4	2	0
Hexagon	6	6	3	6

Challenge Yourself

1. A line between two vertices that are not next to each other.
 2.

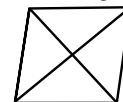


Topic: 2D Shapes Page 34

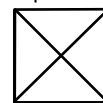
- A.**
 1. Scalene 2. Equilateral
 3. Isosceles 4. Equilateral
 5. Scalene 6. Scalene
 7. Equilateral 8. Isosceles
- B.**
 1. (a) Rectangle (b) Parallelogram
 (c) Square (d) Rhombus
 (e) Trapezium
 2. A quadrilateral is a shape with four sides and four angles. All the angles add up to 360°.
- C.**
 1. Teacher Check
 2. a and e
 3. b
 4. Teacher Check

Topic: 2D Shapes Page 35

- A.**
 1. Square
 2. Squares, rectangles, parallelograms, rhombus
 3. Square, rectangle
 4. Parallelogram, rhombus
 5. (a) Rectangle
 (b) Parallelogram



(c) Square



(d) Rhombus



(e) Trapezium



6. Each shape has 2 diagonals.
 7. Square
 8. (a) True (b) False
 (c) False (d) True

Challenge Yourself

The first three shapes are irregular quadrilaterals.
 The last shape has more than 4 sides and angles so it is not a parallelogram.

- B.**
- Equilateral triangle
 - Pentagon
 - Hexagon
 - Octagon
 - Trapezium
 - Rhombus
 - Parallelogram

C.
Teacher Check

Topic: 2D Shapes Page 36

Teacher Check

Topic: 2D Shapes Page 37

- B.**
- Isosceles triangle
 - Trapezium
 - Rhombus
 - Parallelogram
 - Right-angled triangle
 - Pentagon

Shape	1.Number of Sides	2.Number of Angles	3.Types of Angles
(a) Isosceles triangle	3	3	Acute
(b) Trapezium	4	4	2 obtuse 2 acute
(c) Rhombus	4	4	2 acute 2 obtuse
(d) Parallelogram	4	4	2 acute 2 obtuse
(e) Right-angled triangle	3	3	1 right angle 2 acute angles
(f) Pentagon	5	5	Obtuse

Shape	4. Pairs of Parallel Lines	5.Lines of Symmetry	6.Diagonal Lines
(a) Isosceles triangle	No	Yes – 1	No
(b) Trapezium	Yes – 1 pair	No	Yes – 2
(c) Rhombus	Yes – 2 pairs	Yes – 2	Yes – 2
(d) Parallelogram	Yes – 2 pairs	No	Yes – 2
(e) Right-angled triangle	No	No	No
(f) Pentagon	No	Yes – 5	Yes – 5

- C.**
- (a) Scalene (b) Equilateral
(c) Right-angled (d) Isosceles
(e) Equilateral (f) Isosceles
 - (a) 74° (b) 10° (c) 70° (d) 62°
(e) 90° (f) 40°
 - (a) Parallelogram (b) Hexagon
(c) Rhombus
(d) Right-angled triangle
(e) Irregular pentagon

- D.**
- Diagonal 2. 3
 - Parallel 4. Tessellate
 - Scalene 5. Scalene

E.
Teacher Check

Topic: Division 1 Page 38

- B.**
- (a) 9 (b) 4 (c) 6 (d) 10
(e) 8
 - (a) 12 (b) 11 (c) 7 (d) 12
(e) 0
 - (a) 9 (b) 5 (c) 3 (d) 5
(e) 9
- C.**
- (a) 15 (b) 6 R 1
(c) 13 R 2 (d) 32 R 1
(e) 7 R 5
 - (a) 11 R 1 (b) 10 R 1
(c) 3 R 4 (d) 3 R 2
(e) 1 R 1
 - (a) 8 R 2 (b) 3 R 3
(c) 4 R 6 (d) 5 R 5
(e) 8 R 5

- D.**
- (a) 32 (b) 23 R 5
(c) 24 R 3 (d) 113 R 2
(e) 149 R 1
 - (a) 12 R 4 (b) 105
(c) 71 (d) 31
(e) 77 R 3
 - (a) 108 R 2 (b) 178 R 3
(c) 19 R 5 (d) 51
(e) 82 R 4
- E.**
- (a) 1 R 6 (b) 14 R 3
(c) 17 (d) 27 R 9
 - (a) 10 (b) 28 R 4
(c) 20 R 7 (d) 30
 - (a) 40 R 4 (b) 70 R 5
(c) 11 (d) 45 R 9

- F.**
- (a) 10 (b) 10 (c) 14
 - (a) 12 (b) 6 (c) 10
 - (a) 22 (b) 30
 - (a) €1.00 each (b) €7 each
(c) €10 each
 - (a) 120ml (b) 80g
(c) 80cm

Topic: Division 1 Page 39

- A.**
- (a) 10 (b) 8 (c) 8 (d) 9
 - (a) 19 (b) 18 (c) 21 (d) 16
 - (a) 18 (b) 23 (c) 16 (d) 24
 - (a) 26 (b) 22 (c) 26 (d) 28

- B.**
- (a) 9 (b) 5 (c) 14 (d) 11
 - (a) 10 (b) 11 (c) 12 (d) 9
 - (a) 11 (b) 13 (c) 13 (d) 12
 - (a) 8 (b) 22 (c) 14 (d) 8
 - (a) 11 (b) 19 (c) 12 (d) 13

- C.**
- 9 days
 - 14 groups. 17 children not in a group.
 - 15, 7 not in a packet.
 - 24 days
 - 10 buses

6. 54 days

Topic: Division 1 Page 40

- A.**
- | | | | |
|--------|-----|-----|-----|
| 1. 21 | 42 | 63 | 84 |
| 2. 24 | 48 | 72 | 96 |
| 3. 29 | 58 | 87 | 116 |
| 4. 33 | 66 | 99 | 132 |
| 5. 38 | 76 | 114 | 152 |
| 6. 44 | 88 | 132 | 176 |
| 7. 47 | 94 | 141 | 188 |
| 8. 50 | 100 | 150 | 200 |
| 9. 56 | 112 | 168 | 224 |
| 10. 69 | 138 | 207 | 276 |

- B.**
- | | | | |
|--------|-----|-----|-----|
| 1. 17 | 34 | 51 | 68 |
| 85 | 102 | 119 | 136 |
| 153 | 170 | | |
| 2. 25 | 50 | 75 | 100 |
| 125 | 150 | 175 | 200 |
| 225 | 250 | | |
| 3. 32 | 64 | 96 | 128 |
| 160 | 192 | 224 | 256 |
| 288 | 320 | | |
| 4. 48 | 96 | 144 | 192 |
| 240 | 288 | 336 | 384 |
| 432 | 480 | | |
| 5. 53 | 106 | 159 | 212 |
| 265 | 318 | 371 | 424 |
| 477 | 530 | | |
| 6. 64 | 128 | 192 | 256 |
| 320 | 384 | 448 | 512 |
| 576 | 640 | | |
| 7. 78 | 156 | 234 | 312 |
| 390 | 468 | 546 | 624 |
| 702 | 780 | | |
| 8. 80 | 160 | 240 | 320 |
| 400 | 480 | 560 | 640 |
| 720 | 800 | | |
| 9. 85 | 170 | 255 | 340 |
| 425 | 510 | 595 | 680 |
| 765 | 850 | | |
| 10. 94 | 188 | 282 | 376 |
| 470 | 564 | 658 | 752 |
| 846 | 940 | | |

- C.**
- (a) 52 (b) 42 (c) 19 (d) 21
(e) 23
 - (a) 15 (b) 21
(c) 10 R 38 (d) 12 R 12
(e) 12 R 49
 - (a) 12 R 49 (b) 27 R 8
(c) 19 R 13 (d) 27 R 11
(e) 16 R 44
 - (a) 12 R 5 (b) 11 R 45
(c) 11 R 46 (d) 12 R 17
(e) 11 R 10

- D.**
- 36 days
 - 29 pieces
 - 23 lengths

Topic: Division 1 Page 41

- A.**
 1. (a) 4 (b) 30 (c) 12 (d) 5
 2. (a) 8 (b) 8 (c) 7 (d) 7
 3. (a) 5 (b) 4 (c) 9 (d) 6
- B.**
 1–12: Teacher Check

Topic: Division 1 Page 42

- A.**
 1. 13 R 18 2. 15 R 36
 3. 15 R 2 4. 10 R 55
 5. 38 R 3 6. 15 R 41
 7. 21 R 8 8. 12 R 27
 9. 12 R 19 10. 28 R 17
 11. 18 R 4 12. 43 R 17
 13. 25 R 3 14. 11 R 24
 15. 11 R 52
- B.**
 1. 34 2. 62
 3. 24 4. 51
 5. 31 6. 11
 7. 49 8. 11 R 9
 9. 19 R 33 10. 32 R 13
 11. 13 R 25 12. 33 R 16
 13. 22 R 8 14. 17 R 15
 15. 12
- C.**
 1. (a) 5 (b) 3 (c) 9 (d) 6
 2. (a) 7 (b) 8 (c) 6 (d) 6
 3. (a) 6 (b) 17 (c) 5 (d) 9

- D.**
 1. (a) 26 (b) 22 (c) 21
 2. (a) 26 (b) 19 (c) 13
 3. (a) 19 (b) 37 (c) 11
 4. (a) 11 (b) 9 (c) 76
 5. (a) 52 (b) 21 (c) 29

Topic: Division 1 Page 43

- A.**
 1. (a) 16 R 30 (b) 17 R 21
 (c) 12 R 57 (d) 17 R 32
 (e) 15 R 6 (f) 27
 (g) 13 R 35 (h) 33 R 1
 2. (a) 30 R 19 (b) 8 R 14
 (c) 6 R 45 (d) 23 R 19
 (e) 43 R 14 (f) 13
 (g) 33 R 24 (h) 4 R 24
- B.**
 1. Adults = 36
 Over 12s = 45
 Under 12s = 58
 2. €2,903
 3. €2,694.50
 4. (a) Cups : 90
 T-shirts: 53
 Hats: 65
 Key ring: 159
 Lunch box: 48

Flask: 35
 Watch: 40
 (b) €5,742

Challenge Yourself

1. 24
 2. 19
 3. 952

Topic: Division 1 Page 44

- B.**
 1. (a) 63 (b) 12 (c) 21 (d) 13
 2. (a) 17 (b) 26 (c) 12 (d) 11
 3. (a) 28 (b) 12 (c) 32 (d) 15
 4. (a) 15 R 42 (b) 3 R 46
 (c) 16 R 18 (d) 8 R 63
- C.**
 1. €22
 2. 15
 3. 27
 4. 89
 5. 29 teams 2 were not
 6. 12 7. No
 8. (a) No (b) €10 more
- D.**
 1. Subtraction 2. Sharing
 3. Multiple 4. Dividend
 5. 40 6. Remainder
 7. Quotient
- E.**
 1. Tommy
 2. Tommy, Joe, Michael, Leanne,
 Joanne, Anne, Jack

Topic: Fractions 1 Page 45

- B.**
 1. Whole/Unit, equal
 2. Halves
 3. Quarters
 4. $\frac{1}{6}$
 5. Equivalent

- C.**
 1. (a) > (b) > (c) =
 (d) < (e) =
 2. (a) = (b) < (c) <
 (d) = (e) >

- D.**
 1. (a) $\frac{1}{12}, \frac{1}{10}, \frac{1}{4}, \frac{1}{2}$
 (b) $\frac{7}{12}, \frac{2}{3}, \frac{7}{10}, \frac{3}{4}$
 (c) $\frac{1}{9}, \frac{2}{11}, \frac{1}{5}, \frac{3}{10}$
 2. (a) $\frac{5}{11}, \frac{1}{2}, \frac{3}{5}, \frac{5}{7}$
 (b) $\frac{3}{5}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}$
 (c) $\frac{3}{4}, \frac{4}{5}, \frac{9}{10}, \frac{11}{12}$

Topic: Fractions 1 Page 46

- A.**
 1. (a) $\frac{1}{6}$
 (b) Two of the twelve parts should be shaded.

2. (a) $\frac{3}{4}$
 (b) One half and two of the eighths should be shaded.
3. (a) $\frac{2}{5}$
 (b) Four of the ten parts should be shaded.
4. (a) $\frac{9}{12} = \frac{3}{4}$
 (b) Three of the four parts should be shaded.
5. (a) $\frac{6}{9} = \frac{2}{3}$
 (b) Two out of the three parts should be shaded.
6. (a) $\frac{9}{12} = \frac{3}{4}$
 (b) Three of the four parts should be shaded.
7. (a) $\frac{9}{12} = \frac{3}{4}$
 (b) Three of the four parts should be shaded.
8. (a) $\frac{4}{10} = \frac{2}{5}$
 (b) Two of the five parts should be shaded.

- B.**
 1. (a) 2 (b) 3 (c) 2 (d) 3
 2. (a) 6 (b) 2 (c) 2 (d) 10
 3. (a) $\frac{6}{12} = \frac{5}{10} = \frac{4}{8} = \frac{1}{2}$
 (b) $\frac{9}{12} = \frac{6}{8} = \frac{3}{4}$
 (c) $\frac{2}{3} = \frac{8}{12} = \frac{6}{9} = \frac{4}{6}$

Topic: Fractions 1 Page 47

- A.**
 Teacher Check
- B.**
 1. (a) Proper fraction
 (b) Proper fraction
 (c) Improper fraction
 (d) Proper fraction
 (e) Mixed number
 (f) Proper fraction
 2. (a) Improper fraction
 (b) Mixed number
 (c) Improper fraction
 (d) Improper fraction
 (e) Mixed number
 (f) Proper fraction

Topic: Fractions 1 Page 48

- A.**
 1. (a) $\frac{4}{3}$ (b) $\frac{9}{5}$ (c) $\frac{9}{4}$
 2. (a) $\frac{28}{9}$ (b) $\frac{29}{10}$ (c) $\frac{11}{2}$
 3. (a) $\frac{15}{4}$ (b) $\frac{35}{12}$ (c) $\frac{39}{20}$
 4. (a) $\frac{23}{4}$ (b) $\frac{13}{5}$ (c) $\frac{17}{9}$
- B.**
 1. (a) $1\frac{1}{10}$ (b) $2\frac{2}{5}$ (c) $1\frac{3}{4}$
 2. (a) $1\frac{9}{10}$ (b) $2\frac{3}{4}$ (c) $4\frac{2}{3}$
 3. (a) $1\frac{1}{2}$ (b) $1\frac{1}{4}$ (c) $1\frac{1}{9}$
 4. (a) $2\frac{1}{12}$ (b) $3\frac{2}{5}$ (c) $2\frac{5}{9}$

C.

- $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}, 1\frac{1}{4}, \frac{3}{2}, 1\frac{3}{4}, 2$
- $\frac{3}{8}, \frac{3}{4}, \frac{9}{8}, \frac{3}{2}, 1\frac{7}{8}, \frac{9}{4}, 2\frac{7}{8}$

D.

- (a) > (b) = (c) > (d) <
- (a) = (b) < (c) > (d) >
- (a) > (b) = (c) < (d) =

Topic: Fractions 1 Page 49

B.

Teacher Check

C.

- Teacher Check
- Teacher Check
- $\frac{2}{3} = \frac{4}{6} = \frac{8}{12} = \frac{16}{24}$
- $\frac{80}{100} = \frac{40}{50} = \frac{20}{25} = \frac{4}{5}$
- $\frac{7}{4} = 1\frac{3}{4}$
- $\frac{19}{2} = 9\frac{1}{2}$
- $\frac{32}{10} = 3\frac{1}{5}$
- $\frac{35}{12} = 2\frac{11}{12}$
- $\frac{3}{4} = \frac{27}{4}$
- $4\frac{1}{2} = \frac{9}{2}$
- $3\frac{5}{8} = \frac{29}{8}$
- $2\frac{7}{8} = \frac{23}{8}$

D.

- Value
- $\frac{2}{3} = \frac{4}{6}$
(or any other equivalent)
- Denominator
- Numerator
- Numerator, Denominator
- Mixed

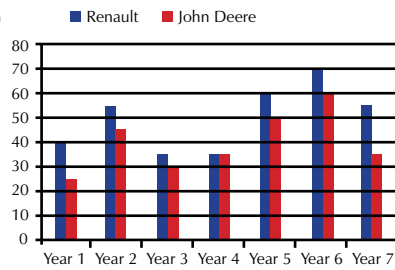
Bright Star Pizza Pages 50 and 51

- (a) 36g (b) 28g (c) 31g
(d) 26g (e) 25g (f) 14g
(g) 29g (h) 21g (i) 9g
(j) 12g (k) 8g (l) 25g

	Pete	Dave	Total
wk 1	110km	100km	210km
wk 2	150km	120km	270km
wk 3	125km	135km	260km
wk 4	190km	200km	390km
wk 5	100km	80km	180km
Total	675km	635km	1,310km

- (a) Total distance travelled was 1,310km
(b) (i) Pete = 675km
(ii) Dave = 635km

(c)



(d) Average for Pete = 135km;
Average for Dave = 127km

- (a) Delivery 1 €19.50
Delivery 2 €27.00
Delivery 3 €26.00
Delivery 4 €26.00
- (b) 1 €30.50
2 €23.00
3 €24.00
4 €24.00
- (c) Delivery 1 3 Slices
Delivery 2 5.5 Slices
Delivery 3 13 Slices
Delivery 4 9 Slices

Mental Maths 2 Pages 52 and 53

A.

- Obtuse
- $\frac{9}{12}$
- Trapezium
- 3.41
- 51.75
- False
- $\frac{2}{3}$
- 4 tenths
- $4\frac{3}{8}$
- Perpendicular
- Square-based pyramid
- $\frac{7}{3}$
- 6
- Horizontal multiple bar graph
- Remainder should be 10

B.

- Polygon
- $\frac{11}{12}$
- False
- False
- €120
- 19
- True
- 12 with 6 left over
- 64m
- 36,869
- Right
- 86
- $1\frac{1}{3}, 1\frac{2}{3}, 2$
- $\frac{1}{3}$
- Teacher check

C.

- 10.03
- 11
- 126 minutes
- Acute Angle
- $\frac{1}{5}$
- 132.72
- $\frac{1}{9}$
- 200
- 1 hour 16 minutes
- Parallel
- Same
- 5
- Square
- 6
- True

D.

- 100°
- 8
- 4.90
- 5
- 11,560
- 2.25

- $\frac{1}{3}$
- 8.25
- Tally sheet
- $\frac{1}{2}$

Topic: Fractions 2 Page 54

B.

- (a) $\frac{3}{5}$ (b) $\frac{4}{5}$ (c) $\frac{6}{7}$
(d) $\frac{1}{2}$ (e) $\frac{3}{5}$ (f) $\frac{7}{10}$
- (a) $\frac{2}{3}$ (a) $\frac{4}{5}$ (c) $\frac{19}{20}$
(d) $\frac{3}{5}$ (e) $\frac{2}{5}$ (f) $\frac{5}{9}$
- (a) $\frac{1}{2}$ (b) $\frac{3}{4}$ (c) $\frac{3}{4}$
(d) $\frac{7}{8}$ (e) $\frac{9}{10}$ (f) $\frac{1}{10}$

C.

- (a) $1\frac{1}{6}$ (b) $1\frac{1}{3}$ (c) $1\frac{1}{4}$
(d) $2\frac{1}{5}$ (e) $1\frac{1}{4}$ (f) $2\frac{1}{2}$
(g) $2\frac{3}{5}$
- (a) $2\frac{2}{3}$ (b) $2\frac{1}{6}$ (c) $3\frac{1}{5}$
(d) $4\frac{1}{2}$ (e) $5\frac{2}{3}$ (f) $7\frac{1}{2}$
(g) $1\frac{1}{2}$

Challenge Yourself

- $\frac{32}{40}$
- $\frac{6}{60}$
- $\frac{6}{60}, \frac{24}{120}, \frac{15}{50}, \frac{100}{200}, \frac{12}{20}, \frac{21}{30}, \frac{32}{40}$

Topic: Fractions 2 Page 55

A.

- (a) $\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$
(b) $\frac{3}{10} + \frac{2}{10} = \frac{5}{10} = \frac{1}{2}$
(c) $\frac{1}{7} + \frac{3}{7} = \frac{4}{7}$
- (a) $\frac{2}{6} + \frac{2}{6} = \frac{4}{6} = \frac{2}{3}$
(b) $\frac{1}{2} + \frac{1}{2} = 1$
(c) $\frac{3}{4} + \frac{2}{4} = \frac{5}{4} = 1\frac{1}{4}$
- (a) $\frac{2}{3} + \frac{2}{3} = \frac{4}{3} = 1\frac{1}{3}$
(b) $\frac{6}{10} + \frac{7}{10} = \frac{13}{10} = 1\frac{3}{10}$
(c) $\frac{9}{10} + \frac{8}{10} = \frac{17}{10} = 1\frac{7}{10}$

B.

- (a) $\frac{2}{3}$ (b) $\frac{7}{10}$ (c) $\frac{2}{3}$
(d) $\frac{4}{5}$ (e) $\frac{3}{8}$
- (a) $\frac{2}{3}$ (b) $1\frac{1}{5}$ (c) $1\frac{3}{8}$
(d) $1\frac{1}{12}$ (e) $1\frac{1}{2}$
- (a) $1\frac{5}{9}$ (b) $1\frac{2}{3}$ (c) $1\frac{1}{3}$
(d) $1\frac{1}{2}$

Topic: Fractions 2 Page 56

A.

- (a) $\frac{1}{4} + \frac{2}{8} = \frac{1}{2}$
(b) $\frac{1}{4} + \frac{1}{2} = \frac{3}{4}$

$$(c) \frac{1}{3} + \frac{1}{2} = \frac{5}{6}$$

$$2. (a) \frac{3}{10} + \frac{4}{10} = \frac{7}{10}$$

$$(b) \frac{3}{9} + \frac{4}{9} = \frac{7}{9}$$

$$(c) \frac{5}{12} + \frac{4}{12} = \frac{9}{12}$$

B.

$$1. (a) \frac{3}{10} \quad (b) \frac{5}{6} \quad (c) 1\frac{5}{12}$$

$$(d) 1\frac{1}{4} \quad (e) \frac{3}{4}$$

$$2. (a) 1\frac{1}{9} \quad (b) 1\frac{1}{5} \quad (c) \frac{11}{12}$$

$$(d) 1\frac{1}{3} \quad (e) 1\frac{4}{9}$$

$$3. (a) \frac{9}{10} \quad (b) 1\frac{5}{8} \quad (c) \frac{7}{8}$$

$$(d) 1\frac{7}{12} \quad (e) 1\frac{2}{5}$$

C.

$$1. (a) \frac{3}{16} \quad (b) \frac{3}{20} \quad (c) \frac{4}{15}$$

$$(d) \frac{3}{10} \quad (e) \frac{7}{18}$$

$$2. (a) \frac{5}{6} \quad (b) \frac{7}{12} \quad (c) \frac{11}{15}$$

$$(d) \frac{2}{3}$$

Topic: Fractions 2 Page 57

A.

$$1. (a) \text{Sixths} \quad (b) \frac{5}{6}$$

$$2. (a) \text{Eighths} \quad (b) \frac{7}{8}$$

$$3. (a) \text{Fifths} \quad (b) \frac{4}{5}$$

$$4. (a) \text{Halves} \quad (b) \frac{1}{2}$$

$$5. (a) \text{Sevenths} \quad (b) \frac{6}{7}$$

$$6. (a) \text{Quarters} \quad (b) \frac{3}{4}$$

$$7. (a) \text{Tenths} \quad (b) \frac{9}{10}$$

$$8. (a) \text{Eighths} \quad (b) \frac{7}{8}$$

$$9. (a) \text{Quarters} \quad (b) \frac{3}{4}$$

$$10. (a) \text{Twelfths} \quad (b) \frac{11}{12}$$

$$11. (a) \text{Elevenths} \quad (b) \frac{10}{11}$$

B.

$$1. (a) \frac{2}{3} \quad (b) \frac{1}{4} \quad (c) \frac{1}{2}$$

$$(d) 0 \quad (e) \frac{1}{2}$$

$$2. (a) \frac{1}{2} \quad (b) \frac{4}{5} \quad (c) 1\frac{5}{8}$$

$$(d) 1\frac{1}{4} \quad (e) 1\frac{1}{2}$$

C.

$$1. (a) \frac{3}{8} \quad (b) \frac{4}{9} \quad (c) \frac{3}{10} \quad (d) \frac{1}{6}$$

$$2. (a) \frac{1}{12} \quad (b) \frac{2}{9} \quad (c) \frac{1}{2} \quad (d) \frac{1}{4}$$

$$3. (a) \frac{1}{3} \quad (b) \frac{1}{3} \quad (c) \frac{1}{8} \quad (d) \frac{3}{10}$$

Topic: Fractions 2 Page 58

A.

$$1. (a) 2\frac{3}{4} \quad (b) 2\frac{4}{5} \quad (c) 3\frac{1}{2} \quad (d) 5\frac{5}{6}$$

$$2. (a) 2\frac{1}{2} \quad (b) 4\frac{9}{10} \quad (c) 7\frac{5}{8} \quad (d) 4\frac{5}{12}$$

$$3. (a) 6\frac{11}{12} \quad (b) 5 \quad (c) 3 \quad (d) 4\frac{7}{9}$$

B.

$$1. (a) 4\frac{1}{3} \quad (b) 3\frac{3}{10} \quad (c) 4\frac{1}{2} \quad (d) 4\frac{1}{6}$$

$$2. (a) 4\frac{2}{5} \quad (b) 7\frac{2}{5} \quad (c) 8\frac{1}{12} \quad (d) 6\frac{1}{2}$$

C.

$$1. (a) 4\frac{1}{4} \quad (b) 3\frac{3}{10} \quad (c) 4\frac{1}{2} \quad (d) 4\frac{1}{6}$$

$$2. (a) 5\frac{1}{60} \quad (b) 8\frac{4}{9} \quad (c) 4\frac{3}{10} \quad (d) 8\frac{3}{8}$$

$$3. (a) 10\frac{7}{12} \quad (b) 10\frac{9}{10} \quad (c) 12\frac{1}{4} \quad (d) 14\frac{1}{9}$$

Topic: Fractions 2 Page 59

A.

$$1. (a) 1\frac{3}{5} \quad (b) 1\frac{1}{2} \quad (c) 1\frac{1}{2} \quad (d) \frac{3}{5}$$

$$2. (a) 1\frac{1}{2} \quad (b) \frac{1}{2} \quad (c) 1\frac{5}{8} \quad (d) 1\frac{3}{8}$$

$$3. (a) \frac{1}{6} \quad (b) 3\frac{1}{4} \quad (c) 5\frac{2}{9} \quad (d) 6\frac{1}{6}$$

B.

$$1. (a) \frac{5}{6} \quad (b) \frac{1}{2} \quad (c) 2\frac{1}{5}$$

$$2. (a) \frac{1}{2} \quad (b) 1\frac{5}{12} \quad (c) \frac{2}{3}$$

$$3. (a) 2\frac{5}{9} \quad (b) \frac{5}{8} \quad (c) \frac{7}{10}$$

C.

$$1. \frac{3}{4} \quad 2. \frac{1}{2} \quad 3. \frac{1}{3} \quad 4. \frac{5}{12}$$

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

Topic: Fractions 2 Page 60

A.

$$1. \frac{2}{3} = \text{full}$$

$$\frac{1}{3} = \text{empty}$$

2. 1 whole pizza

B.

$$1. (a) 1 \quad (b) \frac{5}{8} \quad (c) 1 \quad (d) \frac{9}{10}$$

$$2. (a) \frac{11}{12} \quad (b) \frac{10}{11} \quad (c) \frac{9}{10} \quad (d) \frac{3}{4}$$

C.

$$1. (a) 2\frac{1}{2} \quad (b) 2\frac{1}{3} \quad (c) 2 \quad (d) 2\frac{1}{5}$$

$$2. (a) 1\frac{1}{2} \quad (b) 1\frac{1}{6} \quad (c) 1\frac{1}{10} \quad (d) 1\frac{1}{4}$$

D.

$$1. (a) 3 \quad (b) 2\frac{3}{4} \quad (c) \frac{5}{6}$$

$$(d) 1\frac{3}{13} \quad (e) 7\frac{5}{13} \quad (f) 3\frac{1}{3}$$

$$2. (a) 2\frac{2}{9} \quad (b) 5\frac{5}{6} \quad (c) 2\frac{1}{2}$$

$$(d) 7\frac{7}{8} \quad (e) 1\frac{1}{3} \quad (f) 1\frac{5}{9}$$

$$3. (a) 6\frac{5}{12} \quad (b) 2\frac{2}{5} \quad (c) 2$$

$$(d) 1\frac{3}{7} \quad (e) 1\frac{1}{3} \quad (f) 2\frac{1}{10}$$

Topic: Fractions 2 Page 61

B.

$$1. (a) \frac{2}{3} \quad (b) \frac{7}{10} \quad (c) \frac{1}{4} \quad (d) 0$$

$$2. (a) \frac{1}{2} \quad (b) \frac{7}{8} \quad (c) \frac{1}{12} \quad (d) \frac{7}{10}$$

$$3. (a) 1\frac{1}{2} \quad (b) 1\frac{1}{4} \quad (c) \frac{3}{10} \quad (d) \frac{1}{4}$$

$$4. (a) 2\frac{2}{3} \quad (b) 4 \quad (c) 1\frac{1}{6} \quad (d) 1\frac{3}{5}$$

C.

1. $2\frac{1}{4}$ pizzas

2. $3\frac{1}{5}$ m. Add $\frac{4}{5} + \frac{4}{5} + \frac{4}{5} + \frac{4}{5}$

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

4. $3\frac{1}{2}$ l. Add $\frac{7}{10} + \frac{7}{10} + \frac{7}{10} + \frac{7}{10} + \frac{7}{10}$

5. $5\frac{1}{4}$ km

D.

1. False

2. True

3. False

4. True

5. False

E.

Possible answers could be as follows:

$\frac{120}{100}$	$\frac{80}{50}$	$\frac{200}{300}$	$\frac{160}{80}$	$\frac{210}{75}$	$\frac{150}{200}$
$\frac{60}{50}$	$\frac{40}{25}$	$\frac{100}{150}$	$\frac{80}{40}$	$\frac{42}{15}$	$\frac{75}{100}$
$\frac{6}{5}$	$\frac{8}{5}$	$\frac{10}{15}$	$\frac{8}{4}$	$\frac{14}{5}$	$\frac{15}{20}$
$1\frac{1}{5}$	$1\frac{3}{5}$	$\frac{2}{3}$	2	$2\frac{4}{5}$	$\frac{3}{4}$

Topic: Lines and Angles Page 62

B.

Acute angle less than 90°

Right angle = 90°

Obtuse angle greater than 90°

and less than 180°

Straight line = 180°

Reflex angle greater than 180°

and less than 360°

Full rotation = 360°

C.

(a) Obtuse

(b) Reflex

(c) Acute

(d) Reflex

(e) Straight line

(f) Acute

(g) Reflex

(h) Acute

(i) Right angle

(j) Reflex angle

(k) Obtuse

(l) Acute

(m) Reflex

(n) Acute

D.

1. Obtuse

2. Obtuse

3. Straight

4. Obtuse

5. Reflex

6. Obtuse

7. Right

8. Reflex

Challenge Yourself

There are 12 possible answers:

1. 6 o'clock

2. 7:05

3. 8:10

4. 9:15

5. 10:20

6. 11:25

7. 12:30

8. 1:35

9. 2:40

10. 3:45

11. 4:50

12. 5:55

Topic: Lines and Angles Page 63

A.

1. Acute 57°

2. Acute 60°

3. Reflex 240°

4. Obtuse 110°

5. Right 90°

6. Obtuse 140°

7. Reflex 255°

8. Obtuse 100°

9. Reflex 330°
 10. Acute 40°
 11. Reflex 250°
 12. Acute 37°

B.

1. (a) Reflex (b) Obtuse
 (c) Acute (d) Acute
 (e) Obtuse (f) Reflex
 2. (a) Obtuse (b) Reflex
 (c) Acute (d) Acute
 (e) Obtuse (f) Acute

C.

1. Equilateral Triangle 60°
 Octagon 135°
 Square 90°
 Pentagon 108°
 Hexagon 120°
 2. Teacher Check

D.

- Trapezium
 A. 90° B. 120°
 C. 90° D. 60°
 Trapezium
 E. 110° F. 120°
 G. 70° H. 60°
 Parallelogram
 I. 120° J. 60°
 K. 60° L. 120°
 Rhombus
 M. 60° N. 120°
 O. 60° P. 120°

You should notice that the angles on each shape add up to 360°.

Topic: Lines and Angles Page 64

A.

- (a) 60° (b) 45° (c) 112°
 (d) 60° (e) 150° (f) 40°
 (g) 60° (h) 75°

B.

- (a) 60° (b) 29° (c) 53°
 (d) 30° (e) 210° (f) 58°
 (g) 45° (h) 130°

C.

Teacher Check

D.

Teacher Check

Topic: Lines and Angles Page 65

A.

1. Obtuse angle 2. Acute
 3. No 4. A straight angle

B.

1. 15 possible answers: DAH, AHG, HGD, GDA, DEG, BHG, HGC, GCB, CBH, HIK, JIK, IKL, KLJ, LJI, BJL.
 2. EDG, DGE, GEF, FCC
 3. EFC, CGE
 4. A straight line
 5. An obtuse angle
 6. Teacher check – there are many possible answers.
 7. Teacher check – there are many possible answers.

Challenge Yourself

5 polygons have been used: 1 isosceles triangle, 1 parallelogram, 2 rectangles, 1 square. All of the polygons used are quadrilaterals with the exception of the isosceles triangle.

Topic: Lines and Angles Page 66

B.

1. (a) Obtuse (b) Acute
 (c) Acute (d) Reflex
 (e) Acute (f) Reflex
 (g) Right (h) Reflex
 (i) Right (j) Straight
 2. (a) 100° (b) 120°
 (c) 110° (d) 20°
 (e) 60° (f) 30°

C.

1. (a) 45° (b) 15° (c) 25°
 (d) 60° (e) 40° (f) 45°
 (g) 100° (h) 80° (i) 100°
 2. (a) Isosceles
 (b) Equilateral
 (c) Scalene
 (d) Right-angled
 (e) Isosceles
 3. (a) 240° (b) 260°
 (c) 30° (d) 300°
 (e) 230° (f) 80°
 (g) 165°

D.

1. Acute 2. Scalene
 3. 180° 4. Right angle
 5. 60° 6. 360°
 7. 180° 8. Reflex

E.

Regular pentagon = 108° each angle
 Regular hexagon = 120° each angle
 Regular octagon = 135° each angle.

Topic: Decimals Page 67

B.

1. = (c) 2. = (e) 3. = (i) 4. = (h)
 5. = (f) 6. = (b) 7. = (d) 8. = (j)
 9. = (a) 10. = (g)

C.

	T	U	$\frac{1}{10}$	$\frac{1}{100}$
1		0	●	2
2		5	●	5
3		9	●	4
4		0	●	6
5		0	●	6
6	3	0	●	0
7		6	●	0
8		0	●	7
9		0	●	1
10	1	2	●	4
11	1	4	●	5
12		7	●	4

Fraction / Mixed No.	
Reading off	Simplified
$\frac{25}{100}$	$\frac{1}{4}$
$5\frac{50}{100}$	$5\frac{1}{2}$
$9\frac{44}{100}$	$9\frac{11}{25}$
$\frac{6}{10}$	$\frac{3}{5}$
$\frac{65}{100}$	$\frac{13}{20}$
$30\frac{5}{100}$	$30\frac{1}{20}$
$6\frac{8}{100}$	$6\frac{2}{25}$
$\frac{75}{100}$	$\frac{3}{4}$
$\frac{18}{100}$	$\frac{9}{50}$
$12\frac{4}{10}$	$12\frac{2}{5}$
$14\frac{5}{10}$	$14\frac{1}{2}$
$7\frac{45}{100}$	$7\frac{9}{20}$

D.

1. $\frac{2}{5}$ or 0.4 2. $\frac{4}{5}$ or 0.8
 3. $\frac{1}{4}$ or 0.25 4. $\frac{1}{2}$ or 0.5
 5. $\frac{3}{10}$ or 0.3 6. $2\frac{3}{4}$ or 2.75

E.

1. (a) = 0.5
 2. (b) = 1.5
 3. (c) = 1.5
 4. (d) = 1.5
 (e) = 1.8

Topic: Decimals Page 68

A.

Cent	Decimal of €	Fraction of €
50c	€0.50	$\frac{1}{2}$
20c	€0.20	$\frac{1}{5}$
10c	€0.10	$\frac{1}{10}$
25c	€0.25	$\frac{1}{4}$
5c	€0.05	$\frac{1}{20}$
40c	€0.40	$\frac{2}{5}$
Cent	Decimal of €	Fraction of €
80c	€0.80	$\frac{4}{5}$
35c	€0.35	$\frac{7}{20}$
99c	€0.99	$\frac{99}{100}$
117c	€1.17	$\frac{117}{100}$
139c	€1.39	$1\frac{39}{100}$

B.

1. $\frac{3}{4}$ 2. 35c 3. 55c
 4. (a) 1c, 2c, 5c, 10c

- (b) €1 Stamp:
 $10 = €0.10$
 $100 = €1.00$
 $1,000 = €10.00$
 €2 Stamp:
 $10 = €0.20$
 $100 = €2.00$
 $1,000 = €20.00$
 €5 Stamp:
 $10 = €0.50$
 $100 = €5.00$
 $1,000 = €50.00$
 €10 Stamp:
 $10 = €1.00$
 $100 = €10.00$
 $1,000 = €100$

- (c) (i) €1 Stamp = 500
 (ii) €2 Stamp = 250
 (iii) €5 Stamp = 100
 (iv) €10 Stamp = 50

C.

1. 0.5
 2. 0.25
 3. (a) = 0.4 (b) = 80
 4. €200
 5. (a) Gerard (b) 0.05
 6. 8 or €1.60 worth

Challenge Yourself

1. 8c
 2. €80
 3. 100,000 cans

Topic: Decimals Page 69

B.

1. (a) 0.008 (b) 0.034
 (c) 0.135 (d) 5.009
 2. (a) 0.005 (b) 0.017
 (c) 7.456 (d) 1.098

C.

1. (a) 0.006 (b) 0.003
 (c) 0.012 (d) 0.067
 (e) 0.166 (f) 0.747
 2. (a) 1.003 (b) 4.008
 (c) 8.076 (d) 2.103
 (e) 32.001 (f) 21.023
 (g) 56.343

D.

The following fractions and mixed numbers are in their simplest form.

1. (a) $\frac{1}{500}$ (b) $\frac{7}{250}$ (c) $\frac{21}{500}$
 (d) $\frac{13}{500}$ (e) $\frac{49}{500}$ (f) $\frac{27}{500}$
 (g) $\frac{39}{40}$
 2. (a) $\frac{92}{125}$ (b) $\frac{63}{500}$ (c) $\frac{7}{10}$
 (d) $\frac{49}{100}$ (e) $\frac{81}{125}$ (f) $\frac{3}{5}$
 (g) $\frac{16}{25}$
 3. (a) $1\frac{1}{500}$ (b) $2\frac{1}{125}$ (c) $9\frac{3}{250}$
 (d) $8\frac{21}{250}$ (e) $6\frac{73}{500}$ (f) $2\frac{53}{250}$
 (g) $7\frac{221}{250}$

E.

1. (a) 5 thousandths
 (b) 4 thousandths
 (c) 2 hundredths
 (d) 22 thousandths
 (e) 1 hundredths
 (f) 8 thousandths
 (g) 26 thousandths
 2. (a) 1 tenth
 (b) 21 hundredths
 (c) 848 thousandths
 (d) 2 tenths
 (e) 30 hundredths
 (f) 7 hundredths
 (g) 3 tenths
 3. (a) 2 hundredths
 (b) 17 thousandths
 (c) 7 hundredths
 (d) 98 hundredths
 (e) 2 units
 (f) 9 tenths
 (g) 11 hundredths
 4. (a) 20 units
 (b) 75 hundredths
 (c) 28 thousandths
 (d) 56 units or 5 tens and 6 units
 (e) 2 units
 (f) 0 units
 (g) 124 units or 1 hundred, 2 tens and 4 units

Topic: Decimals Page 70

A.

1. (a) 15.909 (b) 56.626
 (c) 38.625
 2. (a) 47.225 (b) 676.633
 (c) 211.644
 3. (a) 88.156 (b) 187.416
 (c) 38.259
 4. (a) 935.659 (b) 22.573
 (c) 31.255

B.

1. (a) 3.665 (b) 2.167 (c) 1.676
 2. (a) 3.244 (b) 0.749 (c) 2.466
 3. (a) 1.15 (b) 8.023 (c) 3.804
 4. (a) 1.003 (b) 19.214 (c) 28.487

C.

1. (a) 10.41kg (b) 1.905kg
 (c) 6.555kg (d) 8.755kg
 2. (a) 0.85kg (b) 0.995kg
 (c) 0.145kg (d) 1.8kg
 (e) 4.65kg (f) 4.795kg

Topic: Decimals Page 71

B.

1. (a) 3 tenths and 4 hundredths and 6 thousandths
 (b) 8 thousandths
 (c) 1 unit and 7 hundredths and 7 thousandths
 (d) 2 units and 1 tenth and 8 thousandths
 (e) 1 ten and 2 units and 8 hundredths and 9 thousandths

- (f) 1 hundred and 9 units and 2 thousandths
 (g) 1 hundred and 8 tens and 6 units and 6 tenths and 6 hundredths and 2 thousandths

2. (a) 8 thousandths, $\frac{8}{1000}$

(b) 6 hundredths, $\frac{6}{100}$

(c) 82 thousandths, $\frac{82}{1000}$

(d) 1 ten, 10

(e) 771 thousandths, $\frac{771}{1000}$

(f) 1 ten, 10

3. (a) 0.5 (b) 0.25 (c) 0.2

(d) 0.6 (e) 0.01 (f) 0.001

(g) 0.056

4. (a) 0.017, 0.7, 0.71

(b) 0.611, 16.11, 61.1

(c) 0.101, 10.01, 101.1

5. (a) 28.75 (b) 31.24 (c) 31.23

C.

1. (a) Dog (b) Goldfish (c) Dog
 Rabbit
 Kitten
 Bird
 Hamster
 Goldfish

2. 0.335kg 3. 9.933kg

4. 2.7kg 5. 0.322kg

6. 20

D.

1. False 2. True 3. False
 4. False 5. True

E.

- 0.1111 (repeating)
 0.2222 (repeating)
 0.3333 (repeating)
 0.4444 (repeating)

Topic: Problem-Solving Page 72

A.

1. 500 calories
 2. 34
 3. 8 days – he will have €20 for day 9.
 4. 17,000km
 5. 12

B.

1. $\frac{1}{6}$ 2. 22
 3. $\frac{7}{9}$ 4. $3\frac{1}{2}$ kg
 5. 10 litres

C.

Teacher Check

Topic: Problem-Solving Page 73

A.

There are 92 solutions or 12 unique ones if rotational and reflectional variants are considered the same.



- B.**
 1. Barack Obama
 2. South Africa
 3. An alarm clock

- C.**
 Áine: Tennis
 Gearóid: Basketball
 William: Swimming
 Yvonne: Chess
 Sara: Soccer
 Keith: Hurling

Topic: Problem-Solving Page 74

- A.**
 1. 4
 3. 100
 5. 8
 2. 10
 4. 25

- B.**
 1. 96c
 3. €4.45
 5. $1\frac{1}{10}$ km
 7. 14
 9. 5
 2. 91
 4. 1.975kg
 6. $1\frac{1}{5}$ litres, 1.2 litres
 8. 74.88
 10. 3

- C.**
 1. 10min, 12km
 2. (a) 2,700m (b) 3,600m
 (c) 4,500m
 3. 75min, 1hr 15min, $1\frac{1}{4}$ hr
 4. (a) 72min 1hr 12min
 (b) 140km
 5. 15
 6. 1,080 seconds or 18 minutes

Topic: Problem-Solving Page 75

- A.**
 8,000

- B.**
 $\frac{3}{20}$

- C.**
 1. 27
 2. 81

- D.**
 The German

**Football Fever
 Pages 76 and 77**

1. (a) 0.2 (b) $\frac{1}{4}$
 (c) 0.542
 (d) (i) 48 boys (ii) 32 girls
 2. (a) $\frac{9}{10}$ (b) 0.1
 (c) €10.00 (d) €14.00
 3. (a) Obtuse, reflex (b) Straight
 (c) Acute, reflex
 4. (a) $\frac{1}{3}$ (b) $\frac{1}{6}$, 0.75
 (c) 0.579
 (d) (i) 2.75km (ii) 31.5km

**Mental Maths 3
 Pages 78 and 79**

- A.**
 1. €10
 3. 360°
 5. $\frac{9}{10}$
 2. 90.934
 4. 678m

6. False, 3 thousandths
 7. False
 9. 3,220mm
 11. 135°
 13. 207,211
 15. 2.6
 8. 180°
 10. 1.26
 12. 0.737
 14. 7

- B.**
 1. Trapezium
 3. 25
 5. 12:45pm
 7. 8
 9. 5mm
 11. 168
 13. 1.2km
 15. Equilateral
 2. 12.409
 4. 3.69
 6. 10,101
 8. $2\frac{4}{9}$
 10. $\frac{60}{100}$
 12. True
 14. 0.09

- C.**
 1. $\frac{41}{5}$
 3. 500ml
 5. €2.28
 6. Fifty-two thousandths
 7. $52\frac{1}{2}$ hours
 9. One vertical line
 11. €43.50
 13. €34.02
 15. True
 2. 5 $\frac{3}{4}$
 4. $7\frac{2}{7}$
 8. 2,000m
 10. €546.70
 12. 90°
 14. 0.01

- D.**
 1. Thousandths
 3. 3
 5. 600
 7. Four times
 9. 2
 2. 0 units
 4. 8
 6. $\frac{1}{4}$
 8. 1.1
 10. 9

Topic: Number Theory Page 80

- B.**
 3. 50
 5. Even
 7. 2, 4, 6 or 8
 4. 50
 6. One
 8. 3, 5, 7 or 9

- C.**
 2. Even
 4. Odd
 6. Odd
 8. Odd
 10. Odd
 12. Odd
 3. Odd
 5. Even
 7. Even
 9. Even
 11. Odd

- D.**
 1. 1, 2, 3, 4, 6 and 12.
 2. 1, 2, 7 and 14.
 3. (a) 1, 2, 3, 4, 6, 8, 12 and 24.
 (b) $1 \times 24, 2 \times 12, 3 \times 8, 4 \times 6, 6 \times 4, 12 \times 2, 8 \times 3, 24 \times 1$

Topic: Number Theory Page 81

- A.**
 1. (a) 8
 (b) 2, 4, 6, 18
 (c) 2, 4, 10, 20
 2. (a) 3, 5, 13
 (b) 2, 12, 30
 (c) 2, 4, 20
 3. (a) 3, 4, 13

- (b) 3, 9
 (c) 3, 12, 32

- B.**
 1. 18
 5. 48
 9. 20
 2. 16
 6. 66
 10. 72
 3. 15
 7. 5
 4. 81
 8. 63

- C.**
 1. 5, 10, 15, 20, 25, 30, 35, 40, 45, 50.
 2. 8, 16, 24, 32, 40, 48, 56, 64, 72, 80.
 3. 2, 4, 6, 8, 10, 12, 14, 16, 18, 20.
 4. 7, 14, 21, 28, 35, 42, 49, 56, 63, 70.
 5. 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.
 6. 12, 24, 36, 48, 60, 72, 84, 96, 108, 120.
 7. 20, 40, 60, 80, 100, 120, 140, 160, 180, 200.
 8. 25, 50, 75, 100, 125, 150, 175, 200, 225, 250.
 9. 50, 100, 150, 200, 250, 300, 350, 400, 450, 500.
 10. 100, 200, 300, 400, 500, 600, 700, 800, 900, 1,000.

- D.**
 1. (a) 1, 2, 3
 (b) 1, 3, 20
 (c) 27
 2. (a) 1, 3, 5
 (b) 15, 110
 (c) 15, 145
 3. (a) 10, 20, 45
 (b) 50, 100, 900

Challenge Yourself

1. 12
 2. 24
 3. 20th

Topic: Number Theory Page 82

- A.**
 1. (b) 6: Composite 1, 2, 3, 6
 (c) 10: Composite 1, 2, 5, 10
 (d) 2: Prime 1, 2
 (e) 13: Prime 1, 13
 2. (a) 21: Composite 1, 3, 7, 21
 (b) 9: Composite 1, 3, 9
 (c) 17: Prime 1, 17
 (d) 22: Composite 1, 2, 11, 22
 (e) 23: Prime 1, 23
 3. (a) 31: Prime 1, 31
 (b) 29: Prime 1, 29
 (c) 41: Prime 1, 41
 (d) 51: Composite 1, 3, 17, 51
 (e) 19: Prime 1, 19

- B.**
 1. 2, 3, 5, 7
 2. 4, 6, 8, 9, 10
 3. Prime, it has no factors only 1 and itself.
 4. 13, 17, 19, 23, 29
 5. 12, 18
 6. 1
 7. 14

- C.**
 1. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31,

- 37, 41, 43, 47, 53, 59, 61, 67, 71,
73, 79, 83, 89, 97.
2. 25
3. 2
4. No. It is divisible by 3.

Challenge Yourself

- 101, 103, 107, 109, 113, 127, 131,
137, 139, 149, 151, 157, 163, 173,
179, 181, 191, 193, 197, 199.

Topic: Number Theory Page 83

- A.
1. 1 2. 9
3. Itself 4. True
5. 81 6. 9
7. 121, 144, 169, 196
8. 25, 36, 49, 64, 81, 100

- B.
- Teacher Check

Topic: Number Theory Page 84

- B.
1. (a) 4: 4, 8, 12, 16, 20, 24, 28, 32.
(b) 6: 6, 12, 18, 24, 30, 36, 42, 48.
(c) 9: 9, 18, 27, 36, 45, 54, 63, 72.
(d) 10: 10, 20, 30, 40, 50, 60, 70, 80.
(e) 12: 12, 24, 36, 48, 60, 72, 84, 96.
(f) 20: 20, 40, 60, 80, 100, 120, 140,
160.
(g) 25: 25, 50, 75, 100, 125, 150,
175, 200.
2. (a) 12: 1,12 2,6 3,4
(b) 24: 1,24 2,12 3,8 4,6
(c) 36: 1,36 2,18 3,12 4,9
(d) 48: 1,48 2,24 3,16 4,12 6,8
(e) 72: 1,72 2,36 3,24 4,18 6,12
8,9
(f) 80: 1,80 2,40 4,20 5,16 8,10
(g) 100: 1,100 2,50 4,25 5,20
10,10
3. (a) 10 (b) 18 (c) 20
(d) 42 (e) 32 (f) 50
(g) 54
4. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29
5. 42, 44, 45, 46, 48, 49, 50, 51, 52,
54, 55, 56, 57, 58
6. 1, 4, 9, 16, 25, 36, 49, 64, 81, 100

- C.
1. 28 March 2. 22 October
3. 8am 4. 1min
5. 36
- D.
1. Factor 2. Multiple
3. Prime 4. Composite
5. Square

- E.
1. $24 \times 24 = 576$
2. $47 \times 47 = 2,209$

3. $62 \times 62 = 3,844$
4. $86 \times 86 = 7,396$
5. $105 \times 105 = 11,025$
6. $120 \times 120 = 14,400$

Topic: Multiplication 2 Page 85

B.

H	T	U	$\frac{1}{10}$	$\frac{1}{100}$	
	0	0	0	8	→
0	0	0	6	9	→
0	0	8	7	9	→
0	6	3	4	8	→
	4	4	1	7	→
	2	4	8		→
	1	5	7		→

H	T	U	$\frac{1}{10}$	$\frac{1}{100}$	
	0	0	8	0	
0	0	6	9	0	
0	8	7	9	0	
6	3	4	8	0	
4	4	1	7	0	
2	4	8			
1	5	7			

- C.
1. (a) 5 (b) 9 (c) 8
(d) 1.6 (e) 3.4 (f) 8.8
(g) 4.5
2. (a) 77 (b) 61 (c) 99
(d) 124 (e) 177 (f) 195
(g) 258
3. (a) 1,764 (b) 2,999
(c) 1,237 (d) 1,558
(e) 2,018 (f) 5,498
(g) 8,763.6
4. (a) 79 (b) 78.5
(c) 29.9 (d) 96.6
(e) 36 (f) 17.8
(g) 47.2
5. (a) 1,356.6 (b) 2,208.7
(c) 2,319.9 (d) 1,198.2
(e) 2,789.9 (f) 4,819
(g) 6,832.2

- D.
1. (a) 8.85 (b) 12.54
(c) 19.52 (d) 41.76
(e) 57.76 (f) 78.96
2. (a) 37.5 (b) 27
(c) 139.3 (d) 77.5
(e) 44.4 (f) 122.4
3. (a) 120.3 (b) 179.4
(c) 152.9 (d) 125.88
(e) 291

Topic: Multiplication 2 Page 86

- A.
1. (a) 1 (b) 1 (c) 1
(d) 4 (e) 4 (f) 8
2. (a) 22 (b) 62 (c) 46
(d) 124 (e) 260 (f) 901

- B.
1. (a) 10.969 (b) 6.297
(c) 194.748 (d) 458.048
2. (a) 20.752 (b) 31.69
(c) 446.994 (d) 3,426.282
3. (a) 16.914 (b) 27.69
(c) 731.608 (d) 6,007.32

- C.
1. (a) 12.756 (b) 25.2
(c) 42.474 (d) 76.869
(e) 64.386 (f) 38.968
(g) 13.848 (h) 61.648

2. (a) 72.771 (b) 494.632
(c) 359.016 (d) 201.005
(e) 701.752 (f) 907.648
(g) 862.752 (h) 530.025

Topic: Multiplication 2 Page 87

- A.
1. (a) 179.752kg (b) 9.62kg
(c) 334.4kg (d) 8.458kg
(e) 0.57kg (f) 24.86kg
2. (c) The order of turnips is heaviest.
The order of strawberries is lightest.
3. Carrots = €85.44
Blueberries = €69.76
Turnips = €79.00
Strawberries = €52.32
Potatoes = €56.43
Apples = €35.64
4. Total = €378.59
5. €190

Topic: Multiplication 2 Page 88

- A.
1. €6,150 Subtract
2. 10,203 Add and subtract
3. 16,599 Add
4. 112 Subtract
5. €16 Divide
6. 78 Multiply
- B.
1. €10.02 Add and subtract
2. 0.693 Subtract
3. 1.79m Divide
4. 11
5. Michael, 80ml Subtract
6. 14 Add and divide
- C.
1. $4\frac{9}{10}$ Add
2. 42 Divide and subtract
3. $2\frac{1}{4}$ hr or 2hr 15min Multiply
4. 49km Multiply
5. 336 Multiply
6. 22 Divide
7. 31 Divide

Topic: Multiplication 2 Page 89

- B.
1. (a) 15 (b) 1.23
(c) 190.17 (d) 8.64
(e) 1,040.65
2. (a) 2 (b) 5
(c) 23 (d) 10
(e) 112
3. (a) 52.5 (b) 152.425
(c) 6.104 (d) 31.735
(e) 61.125 (f) 17.225
4. (a) 43.77 (b) 78.85
(c) 312.849 (d) 104.532
(e) 117.264
5. (a) 15.594 (b) 27.774
(c) 34.58 (d) 543.42

- (e) 2,747-577
 6. (a) 8-61 (b) 797-019
 (c) 3,278-019 (d) 40-608
 (e) 17,554-758

C.

1. 0-784km 2. 2-524km
 3. 15-06km 4. 1-764km
 5. 8-24km

D.

1. 0-08 2. 0-12
 3. 14-56 4. Repeated
 5. 2

E.

684

Topic: Length Page 90

Teacher Check

Topic: Length Page 91

A.

1. 0-2cm 2. 2cm 2mm
 3. $3\frac{1}{10}$ cm 4. 10cm
 5. 13-4cm 6. $\frac{9}{10}$ cm
 7. $\frac{16}{10}$ cm 8. $\frac{55}{100}$ cm
 9. 100cm 10. 0-05cm

B.

1.	122cm	1m 22cm	1-22m	$1\frac{22}{100}$ m
2.	31cm	0m 31cm	0-31m	$\frac{31}{100}$ m
3.	$4\frac{1}{4}$ m	4m 25cm	4-25m	$4\frac{25}{100}$ m
4.	3-75m	3m 75cm	3-75m	$3\frac{75}{100}$ m
5.	101m	101m 0cm	101-0m	101m
6.	245cm	2m 45cm	2-45m	$2\frac{45}{100}$ m
7.	1,100cm	11m	11-00m	$\frac{101}{101}$ m
8.	$\frac{1}{2}$ m	0m 50cm	0-5m	$\frac{50}{100}$ m
9.	65m	65-0m	65m	$\frac{6500}{6500}$ m
10.	7,450cm	74m 50cm	74-5m	$74\frac{50}{100}$ m

Topic: Length Page 92

A.

1.	1,600m	1km 600m	1-6km	$1\frac{6}{10}$ km
2.	3,300m	3km 300m	3-3km	$3\frac{3}{10}$ km
3.	750m	0km 750m	0-75km	$\frac{3}{4}$ km
4.	900m	0km 900m	0-9km	$\frac{9}{10}$ km
5.	200m	0km 200m	0-2km	$\frac{1}{5}$ km

B.

1. 155mm or 15-5cm
 2. 2,457-3cm
 3. 530-4cm

4. 1,003-48cm
 5. 7,008-75m
 6. 6-024km
 7. 85-1km
 8. 5-345km
 9. 3,007-45m
 10. 6-353km
 11. 6-04m
 12. 28m
 13. 7-2cm
 14. 118-4cm
 15. 108cm or 1m 8cm
 16. 57km

C.

- (a) 24m rectangle
 (b) 19cm isosceles triangle
 (c) 36mm square
 (d) 19km trapezium
 (e) 18m hexagon
 (f) 20cm rectangle
 Four quadrilaterals: (a), (c), (d), (f)

Topic: Length Page 93

A.

1. 14cm 2. 20cm
 3. 17cm 4. 14cm
 5. 16cm 6. 14cm
 7. 13cm 8. 24cm
 9. 15cm

Challenge Yourself

1. 24cm, 20cm, 17cm, 16cm, 15cm, 14cm, 14cm, 14cm, 13cm
 2. 240mm, 200mm, 170mm, 160mm, 150mm, 140mm, 140mm, 140mm, 130mm
 3. $\frac{6}{25}$ m, $\frac{1}{5}$ m, $\frac{17}{100}$ m, $\frac{4}{25}$ m, $\frac{3}{20}$ m, $\frac{7}{50}$ m, $\frac{13}{100}$ m
 4. 1. 14cm² 2. 19cm² 3. 18cm²

B.

1. Each side should be 4cm
 2. Yes

Topic: Length Page 94

B.

1. Teacher Check
 2. (a) 0-7cm (b) 1-8cm
 (c) 10-5cm (d) 14-5cm
 3. (a) 50cm (b) 25cm
 (c) 75cm (d) 20cm
 (e) 80cm (f) 11cm
 (g) 9cm (h) 19cm
 4. (a) 0-004km (b) 0-067km
 (c) 0-112km (d) 0-509km
 (e) 1-2km (f) 2-356km

C.

1. 11m 2. 36cm
 3. 8cm 4. €3,720
 5. 40,000m² 6. 88m

D.

1. Perimeter
 2. Trundle wheel
 3. Ruler
 4. Ruler
 5. Trundle wheel

Topic: Division 2

Page 95

B.

1. (a) 29 (b) 12 (c) 25
 (d) 18 (e) 62 (f) 28
 2. (a) 22 (b) 39 (c) 9
 (d) 8 (e) 8 (f) 9
 (g) 12 R 5 (h) 10 R 41 (i) 15 R 19
 (j) 12 R 2 1 (k) 10 R 56 (l) 10 R 40

C.

1. (a) 0-12 (b) 0-234 (c) 1-51
 (d) 2-923 (e) 11-07 (f) 0-045
 (g) 0-03 (h) 66-789 (i) 20-01
 (j) 5-688 (k) 0-008
 2. (a) 0-043 (b) 0-0896 (c) 0-237
 (d) 0-403 (e) 1-1274 (f) 0-12
 (g) 1-20 (h) 1-231 (i) 5-00
 (j) 1-106
 3. (a) 0-001 (b) 0-01 (c) 0-045
 (d) 0-05 (e) 0-106 (f) 0-25
 (g) 0-5 (h) 1-050 (i) 2-002
 (j) 4-567

D.

1. (a) 1 (b) 1 (c) 1
 (d) 5 (e) 3
 2. (a) 7 (b) 11 (c) 14
 (d) 24 (e) 36
 3. (a) 30 (b) 101 (c) 102
 (d) 220 (e) 290
 4. (a) 456 (b) 1,001 (c) 1,235
 (d) 1,127 (e) 7,843

Topic: Division 2

Page 96

A.

1. (a) 8-7 (b) 14-4 (c) 6-9
 (d) 8-4
 2. (a) 5-8 (b) 4-8 (c) 9-2
 (d) 9-4 (e) 8-9 (f) 7-6
 (g) 8-3 (h) 8-6

B.

1. Frederic 2-6 seconds
 Leroy 1-9 seconds
 Michael 1-1 seconds
 Gerard 0-7 seconds
 Brad 0-8 seconds
 Lucien 0-75 seconds
 Matt 2-02 seconds
 2. (a) Frederic: 5-2 seconds.
 (b) Matt: 4-04 seconds.
 3. (a) Gerard: 2-1 seconds.
 (b) Lucien: 2-25 seconds.
 4. Brad
 5. Michael
 6. (a) Frederic: 260 sec
 Leroy: 190 sec
 Michael: 110 sec
 Gerard: 70 sec
 Brad: 80 sec
 Lucien: 75 sec
 Matt: 202 sec

- (b) Frederic: 520
Leroy: 380
Michael: 220
Gerard: 140
Brad: 160 sec
Lucien: 150 sec
Matt: 404 sec

Topic: Division 2
Page 97

- A.**
- 1-8kg margarine
 - 0-5kg caster sugar
 - 1-9kg sultanas
 - 2-7 litres milk
 - 2-4 litres water
 - 3-3kg cooking chocolate
 - 2-1kg flour
 - 0-4kg eggs
 - 0-8kg raisins
 - 2-4ml lemon juice
- B.**
- (a) 1-3 (b) 1-8 (c) 2-6
 - (a) 2-4 (b) 37-6 (c) 2-4
 - (a) 1-7 (b) 1-8 (c) 3-4
 - (a) 1-8 (b) 2-4 (c) 1-4
- C.**
- (a) 0-6 (b) 0-22 (c) 0-55 (d) 9-94
 - (a) 0-25 (b) 0-51 (c) 0-68 (d) 0-24
 - (a) 0-35 (b) 0-26 (c) 0-26 (d) 0-28
 - (a) 0-24 (b) 0-98 (c) 0-75 (d) 0-95

Challenge Yourself

- 0-2
- Full cake

Topic: Division 2
Page 98

- A.**
- Chocolates 20 cent
 - Soft drinks 49 cent
 - Hair Ties 15 cent
 - Paper Clips 9 cent
 - Granola Bar 24 cent
 - Nails 6-25 cent
- B.**
- (a) 0-26 (b) 0-19 (c) 0-28 (d) 0-74
 - (a) 0-47 (b) 0-16 (c) 0-2 (d) 0-27
 - (a) 0-16 (b) 0-09 (c) 0-08 (d) 0-07
 - (a) 0-05 (b) 0-03 (c) 0-06 (d) 0-07
 - (a) 0-04 (b) 0-2 (c) 0-26 (d) 0-02
- C.**
- 14 hours (a) 0-56km (b) 0-84km (c) 0-48km (d) 0-92km
 - 8-53 kilometres
 - Weather, traffic, number of people

- working to complete the job.
5. (a) Galway city to Galway airport €6,528
Galway city to Barna €3,456
Barna to Spiddal €9,216
Oranmore to Clarinbridge €2,304
(b) €21,504

Topic: Division 2
Page 99

- B.**
- (a) 19 (b) 25 (c) 26
 - (a) 8 R 12 (b) 5 R 51 (c) 8-2
 - (a) 7-6 (b) 5-8 (c) 39-6
 - (a) 9-8 (b) 4-6 (c) 8-3
 - (a) 0-14 (b) 0-29 (c) 0-52
 - (a) 0-63 (b) 2-3 (c) 1-9
 - (a) 5-6 (b) 0-52 (c) 0-8
 - (a) 0-7 (b) 0-6 (c) 0-06
 - (a) 0-08 (b) 0-04 (c) 0-08
- C.**
- 15-2 km
 - €1-66
 - €0-05
 - 3-3kg
 - 5 litres
 - 33c
 - (a) €0-86 (b) €7-10
- D.**
- Multiplication
 - Multiplied
 - Divided
 - Thousandth
 - Units
- E.**
- Teacher Check

Christmaths on Ice
Pages 100 and 101

- (a) 210m (b) 0-21km (c) 7 times (d) 0-09 seconds (e) 420 Lengths (f) €5,250
- (a) 150m (b) 170m (c) 138m (d) 240m
- (a) 29-0cm, 28-0cm, 30-5cm (b) (i) 8-4m (ii) 0-0084km
- (a) 52 Tickets (b) €1,430-75 (c) €231,400 (d) 14:30

Mental Maths 4
Pages 102 and 103

- A.**
- Cylinder
 - True
 - Teacher check
 - 28
 - Saoirse
 - True
 - V, VI, VII
 - 9
 - 70°
 - $\frac{87}{1000}$
 - 7hr 40min
 - 30
 - 48
 - 47
 - 9
- B.**
- 12:15
 - 2:15
 - 60°
 - 10
 - 30,000
 - False
 - $\frac{1}{10}$
 - $\frac{1}{52}$
 - $4\frac{3}{4}$

- Jan Feb Mar Apr May Jun
20 12 10 16 16 24
- 120 12. 6
- 5-25, $5\frac{1}{4}$
- Square-based pyramids
- €1-50

- C.**
- Acute
 - 9
 - Cone
 - True
 - 360°
 - 81m²
 - 0-011
 - 20-041
 - 90m
 - $7\frac{1}{72}$
 - 1
 - 1,080g
 - True
 - Five to seven in the evening
 - 6-05kg
- D.**
- 4,600
 - 0
 - $\frac{1}{10}$
 - 84°
 - 48cm
 - €1-80
 - 7
 8. 20
 - Ham
 - 38

Topic: Time **Page 104**

- B.**
- After or post
 - Before or pre
 - Decade
 - Century
 - Millennium
 - 30
 - 92
 - 168
 - Calendar
 - A.D.
- C.**
- (a) 1hr 5min (b) 2hr 5min (c) 1hr 40min (d) 2hr 47min (e) 4hr 47min
 - (a) 69min (b) 90min (c) 165min (d) 195min (e) 285min
- D.**
- 1-5. Teacher Check
- E.**
- Teacher Check
 - (a) 12:20 (b) 6:27 (c) 5:43 (d) 10:40 (e) 3:25 (f) 6:10
 - (a) 12:50 (b) 6:57 (c) 6:13 (d) 11:10 (e) 3:55 (f) 6:40

Topic: Time **Page 105**

A.

12 hr clock	24 hr clock	12 hr clock	24 hr clock
12pm	12:00	12am	00:00
3pm	15:00	3am	03:00
4pm	16:00	4am	04:00
6pm	18:00	6am	06:00
7pm	19:00	7am	07:00
10pm	22:00	10am	10:00
11pm	23:00	11am	11:00

B.

1. (a) 02:45 (b) 17:30
 (c) 13:00 (d) 21:30
 (e) 03:35 (f) 23:50
2. (a) 00:15 (b) 11:55
 (c) 00:05 (d) 20:00
 (e) 08:40 (f) 06:30

C.

1. (a) 10:30 (b) 21:45
 (c) 12:10 (d) 23:25
 (e) 15:20 (f) 17:45
2. (a) 12:00 (b) 07:05
 (c) 11:55 (d) 09:15
 (e) 16:05 (f) 18:20
3. (a) 06:15 (b) 00:00
 (c) 20:20 (d) 22:30
 (e) 04:20 (f) 00:05

D.

1. (a) A quarter to seven in the evening
 6:45pm
 (b) Ten past four in the afternoon
 4:10pm
 (c) Ten to two in the afternoon
 1:50pm
 (d) Twenty to ten at night 9:40pm
 (e) Twenty-five past one in the
 morning 1:25am
2. (a) Ten past twelve in the afternoon
 12:10pm
 (b) A quarter past twelve in the
 morning 12:15am
 (c) Five to one in the morning
 12:55am
 (d) Half past eight in the morning
 8:30am
 (e) Twenty to ten in the morning
 9:40am
3. (a) A quarter to three in the afternoon
 2:45pm
 (b) Three o'clock in the afternoon
 3:00pm
 (c) Five past seven in the evening
 7:05pm
 (d) Twenty past ten at night
 10:20pm
 (e) Twenty-five past nine at night
 9:25pm

Topic: Time Page 106**A.****1. Solicitors**

Monday 08:30–12:00 14:00–19:00
 Tuesday 08:30–12:00 14:00–19:00
 Wed. 08:30–12:00 14:00–19:00
 Thurs. closed 14:00–20:00
 Fri. 08:30–12:00 14:00–19:00
 Sat. 08:30–12:00
 Sun. closed.

Teddy's Store

Monday 08:00–18:00

Tuesday 08:00–18:00
 Wednesday 08:00–18:00
 Thursday 08:00–20:00
 Friday 08:00–18:00
 Saturday 09:00–17:30
 Sunday 10:00–16:00
 Bank Hols. 10:00–16:00

2. Times open Mon.–Fri.

Con's chemist: 46hr 15min
 (Mon. to Fri.)
 Bloomers: 43hr (Mon. to Fri.)
 Solicitors: 40hr (Mon. to Fri.)
 Teddy's: 52hr (Mon. to Fri.)

3. 8 hours 4. 08:35
 5. 19:15 6. 18:07
 7. 08:15 8. €540

B.

1. Mon: 1hr 9min
 Tues: 2hr 52min
 Wed: 3hr 58min
 Thurs: 5hr 15min
 Fri: 1hr 52min
2. 1hr 43min
 3. 4hr 6min
 4. 15hr 06min

C.

1. (a) 14:24 (b) 17:04
 (c) 18:19 (d) 21:04
 (e) 23:14
2. (a) 11:23 (b) 14:33
 (c) 16:38 (d) 19:03

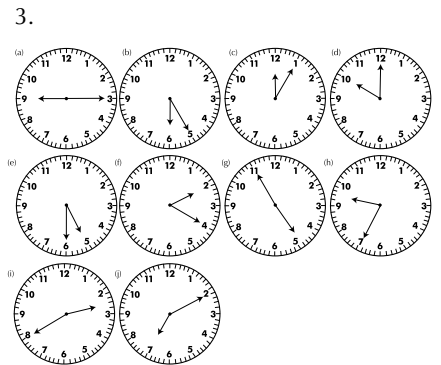
Topic: Time Page 107**A.**

1. Train
 (a) (i) 2hr 45min
 (ii) 2hr 49min
 (iii) 2hr 41min
 (iv) 2hr 40min
 (v) 2hr 26min
 (vi) 2hr 41min
 (vii) 2hr 40min
 (b) It has the least amount of stops
 along the way.
2. (a) 07:10 train
 (b) 55 mins.
3. (a) 07:10 train or 16:50 train
 (b) 07:08 or 16:48
4. She will arrive at the train station
 at 16:49. So she will not make the
 16:50 train as the platform gates close
 2 minutes prior to departure.
5. Athlone.
6. Students' own suggestion.

Topic: Time Page 108**B.**

1. (a) 18:45 (b) 01:00
 (c) 12:00 (d) 21:40

- (e) 15:25 (f) 00:50
 (g) 17:10 (h) 23:45
2. (a) 5hr 27min
 (b) 6hr 45min
 (c) 7hr 49min
 (d) 4hr 59min
 (e) 7hr 35min
 (f) 10hr 27min

**C.**

1. 14A 2. 11:33
 3. 15X
 4. (Students suggestions)
 5. It did not arrive because the 14B does
 not stop at Jamestown Rd.

D.

1. 336 2. 3,600
 3. 24-hour 4. 12-hour
 5. Analogue

E.

Teacher Check

Topic: Percentages 1 Page 109**B.**

1. $\frac{7}{10}$, 0.7, 70%
 2. $\frac{9}{10}$, 0.9, 90%
 3. $\frac{18}{25}$, 0.72, 72%
 4. $\frac{61}{100}$, 0.61, 61%

C.

Teacher Check

Topic: Percentages 1 Page 110**A.**

- 0.04 → 4%
 0.5 → 50%
 0.2 → 20%
 0.1 → 10%
 0.34 → 34%
 0.95 → 95%

B.

- 0.7 = 70%
 0.3 = 30%
 0.97 = 97%
 0.875 = 87.5%
 0.06 = 6%
 0.67 = 67%
 1.7 = 170%
 0.125 = 12.5%

C.

Shaded

- 0.4, 40%
- 0.3, 30%
- 0.7, 70%
- 0.3, 30%
- 0.375, 37.5%
- 0.4, 40%
- 0.4, 40%
- 0.75, 75%

Unshaded

- 0.6, 60%
- 0.7, 70%
- 0.3, 30%
- 0.7, 70%
- 0.625, 62.5%
- 0.6, 60%
- 0.6, 60%
- 0.25, 25%

D.

- 60%
- 35%
- 50%
- 75%
- 85%
- 65%
- 110%
- 200%

Topic: Percentages 1 Page 111

A.

Fraction	Decimal	Percentage
1. Shaded: $\frac{3}{5}$	0.6	60%
Unshaded: $\frac{2}{5}$	0.4	40%
2. Shaded: $\frac{7}{10}$	0.7	70%
Unshaded: $\frac{3}{10}$	0.3	30%
3. Shaded: $\frac{7}{10}$	0.7	70%
Unshaded: $\frac{3}{10}$	0.3	30%
4. Shaded: $\frac{1}{2}$	0.5	50%
Unshaded: $\frac{1}{2}$	0.5	50%
5. Shaded: $\frac{1}{16}$	0.0625	6.25%
Unshaded: $\frac{15}{16}$	0.9375	93.75%
6. Shaded: $\frac{11}{16}$	0.6875	68.75%
Unshaded: $\frac{5}{16}$	0.3125	31.25%
7. Shaded: $\frac{1}{4}$	0.25	25%
Unshaded: $\frac{3}{4}$	0.75	75%
8. Shaded: $\frac{1}{8}$	0.125	12.5%
Unshaded: $\frac{7}{8}$	0.875	87.5%
9. Shaded: $\frac{2}{5}$	0.4	40%
Unshaded: $\frac{3}{5}$	0.6	60%
10. Shaded: $\frac{3}{5}$	0.6	60%
Unshaded: $\frac{2}{5}$	0.4	40%

B.

- (a) $\frac{71}{100}$, 0.7, 17%
(b) 0.23, 21%, $\frac{1}{5}$
(c) 11%, $\frac{1}{10}$, 0.011
(d) 0.40, $\frac{1}{4}$, 24%
- (a) 0.85, $\frac{4}{5}$, 75%
(b) $\frac{3}{5}$, 39%, 0.33
(c) $\frac{19}{20}$, 90%, 0.89
(d) 0.66, $\frac{5}{8}$, 60%

- (a) $\frac{5}{4}$, 1.1, 100%
(b) 5, 0.55, 50%
(c) 11, 0.12, 11%
(d) $\frac{13}{20}$, 0.56, 50%
- (a) 0.2, $\frac{3}{20}$, 10%
(b) 70%, $\frac{2}{3}$, 0.6
(c) 9, 0.9, 9%
(d) 1, 0.11, 10%

C.

- 0, 10%, 0.22, 40%, $\frac{1}{2}$, 0.6, $\frac{72}{100}$, 1
- 0, $\frac{2}{100}$, 0.1, 30%, $\frac{2}{5}$, 0.46, 78%, 1
- 0, $\frac{1}{100}$, 20%, 50%, 0.58, $\frac{3}{5}$, 0.9, 1
- 0, $\frac{1}{10}$, 16%, 0.7, $\frac{4}{5}$, 0.98, 100%

D.

Per cent	Decimal	Fraction
1%	0.01	$\frac{1}{100}$
60%	0.6	$\frac{3}{5}$
10%	0.1	$\frac{1}{10}$
12.5%	0.125	$\frac{1}{8}$
20%	0.2	$\frac{1}{5}$
25%	0.25	$\frac{1}{4}$
70%	0.7	$\frac{7}{10}$
50%	0.5	$\frac{1}{2}$
75%	0.75	$\frac{3}{4}$
80%	0.8	$\frac{4}{5}$
35%	0.35	$\frac{7}{20}$
99%	0.99	$\frac{99}{100}$
100%	1	1
125%	1.25	$\frac{5}{4}$
150%	1.5	$1\frac{1}{2}$
200%	2.0	$\frac{4}{2}$

Topic: Percentages 1 Page 112

A.

- (a) 1 (b) 9 (c) 25
(d) 24 (e) 19
- (a) 150 (b) 5 (c) 72
(d) 213 (e) 9
- (a) 1 (b) 34 (c) 65
(d) 27 (e) 112

B.

- (a) 1l = 30ml – Protein
60ml – Carbohydrates
40ml – Fat
870ml – Water
(b) 2l = 60ml – Protein
120ml – Carbohydrates
80ml – Fat
1,740ml – Water

- (c) $\frac{1}{2}$ l = 15ml – Protein
30ml – Carbohydrates
20ml – Fat
435ml – Water

2. (a) 20 pupils:

- Blue: 5
Red: 4
Green: 3
Black: 1
Purple: 7

(b) 60 pupils:

- Blue: 15
Red: 12
Green: 9
Black: 3
Purple: 21

(c) 100 pupils:

- Blue: 25
Red: 20
Green: 15
Black: 5
Purple: 35

C.

- (a) 40 (b) 45 (c) 20
- (a) 60 (b) 3 (c) 16
- (a) 200 (b) 15 (c) 20

D.

- There will definitely be rain.
- (a) False (b) True (c) False
(d) True (e) True

Topic: Percentages 1 Page 113

B.

- (a) 25% (b) 20% (c) 80%
(d) 66% (e) 55% (f) 122%
- (a) 0.07 (b) 0.35 (c) 0.7
(d) 1.00 (e) 0.625 (f) 3.00
- (a) 7% (b) 75% (c) 20%
(d) 65% (e) 12.5% (f) 62.5%
(g) 33.33%
- (a) $\frac{1}{2}$ (b) $\frac{3}{4}$ (c) $\frac{7}{20}$
(d) $\frac{9}{20}$ (e) $\frac{13}{20}$ (f) 1

C.

- 8
- Justin = €1,600
Leo/Tom = €1,200 each
- 5%
- Elaine = 60%
Karen = 40%
- 105km

D.

- False
- False
- False
- True
- True
- True
- True

E.

Teacher Check

Topic: Money Page 114

B.

- Jane €144.25
Mikhail €216.12

Ciara	€567.42
Sinéad	€673.19
Greg	€485.20
Joe	€334.71
James	€727.26
Louis	€363.63
2. Jane	€105.75
Mikhail	€33.88
Ciara	€32.58
Sinead	€26.81
Greg	€14.80
Joe	€165.29
James	€72.74
Louis	€6.37

C.

Box of tea	€192.50
Bag of coffee	€336.00
Box of crisps	€278.80
Burgers	€309.00
Potatoes	€174.42

Topic: Money Page 115

A.

- (a) 38c (b) €1.90 (c) €3.80
- (a) €3.30 (b) €9.90 (c) €26.40
- (a) €2.40 (b) €3.60 (c) €4.80
- (a) €1.00 (b) €1.50 (c) €2.00

B.

- 94 cent 2. €19
- €3.52 4. €17.50
- €4 6. €5.40
- €20 8. €21.60

C.

- €3.60 2. €9.60
- €2.50 4. €20.00
- €1.50

Topic: Money Page 116

A.

- 7 apples for €2.87
- $1\frac{1}{2}$ litres for €3.75
- 2kg for €8
- 24 pencils for €2.16
- 900 for €5.30
- $\frac{1}{2}$ metre for €0.70

B.

- (a) 6 pencil cases for €9 (b) 5 cent (c) €1
- (a) 12 kiwis for €3 (b) 1 cent (c) €0.72
- 50 cent
- €1.60
- (a) $1\frac{1}{2}$ kg at €6.30 (b) 0.80cent per kg on 750kg at €1 per kg on 500g (c) €2, €8 on 750g and €10 on 500g

Topic: Money Page 117

A.

Paper round.

B.

Murphy Family:
Family Ticket €45.19
Guide Book €4.00
Free route planner
Total: €49.19

Shaw Family:
Family Ticket €45.19
Guide Book €4.00
Free route planner
Total: €49.19

O'Sullivan Family
Family Ticket €45.19
2 x Adults €35.20
2 Children $\frac{1}{2}$ Price €09.30
Guide Book €04.00
Route Planner €2.80
Total: €96.49

McAndrew Family
Family Ticket €45.19
2 x Adults €35.20
Guide Book €4.00
Free Route Planner
Total: €84.39

Topic: Money Page 118

B.

- (a) €0.40 (b) €4.80
- €3 3. €12.60
- €2.40 5. €0.55
- €0.65 7. €5.00
- €0.85 9. €2.40

C.

Lake Como offers the best value.
Florida €1,760. Algarve €1,125. Lake Como €900. EuroDisney €1,190.

D.

- False 2. False 3. False 4. True
- True 6. False

E.

SuperSeller
Oranges: 55c each
Cola: 90c per litre
Toothpaste: 88c per tube
Margarine: €1.44 per kg
Vinegar: €3.40 per kg
Bananas: 29c each
Mince: €5 per kg

CostSaver
Oranges: 54c each
Cola: 92c per litre
Toothpaste: 87c per tube
Margarine: 95c per kg
Vinegar: €1.60 per kg
Bananas: 30c each

Mince: $97\frac{1}{2}$ c per kg
Peter got the best value for money.

Topic: Percentages 2 Page 119

B.

- (a) $\frac{1}{2}$, 30%, 0.25 (b) $\frac{1}{4}$, 0.22, 0.20 (c) 0.35, $\frac{1}{3}$, 30% (d) 50%, 0.35, $\frac{1}{5}$ (e) 12%, 0.11, $\frac{1}{10}$
- (a) $\frac{4}{5}$, 40%, 0.04 (b) 1.1, 100%, $\frac{9}{10}$ (c) $\frac{7}{8}$, 85%, 0.8 (d) 67%, $\frac{2}{3}$, 0.65 (e) $\frac{1}{8}$, 0.12, 10%

C.

- 0.34 2. 0.5 3. 0.11 4. 0.065
- 0.955 6. 1.0 7. 1.08 8. 2.5

D.

- (a) 48 (b) 16 (c) 12 (d) 11
- (a) 18 (b) 34 (c) 66 (d) 42
- (a) 9 (b) 4 (c) 4 (d) 3
- (a) 18 (b) 95 (c) 96 (d) 27

E.

- (a) Fraction (b) Decimal Fractions

$4\frac{1}{5}$ kg flour	0.8kg flour
$1\frac{3}{5}$ kg sugar	1.6kg sugar
$\frac{1}{40}$ l vanilla	0.025l vanilla
$\frac{1}{20}$ kg baking powder	0.05kg baking powder
$\frac{1}{10}$ l water	0.1l water
$\frac{3}{4}$ kg margarine	0.75kg margarine
$\frac{1}{5}$ kg cocoa	0.20kg cocoa
$\frac{3}{5}$ kg chopped nuts	0.6kg chopped nuts
- Cocoa
- Margarine
- Flour
- kg Baking powder
Cocoa
Chopped Nuts
Margarine
Flour
Sugar
Litres
Vanilla
Water

Topic: Percentages 2 Page 120

A.

- (a) 12m (b) €15 (c) 50km (d) 60kg (e) 60m
- (a) €60 (b) 20 (c) 150 (d) €200 (e) 20
- (a) 5 (b) 27 (c) €100 (d) 40 (e) €40
- (a) 4 (b) €20 (c) 8kg (d) 25m (e) €25

- B.**
- 10 jumpers
 - 16 petals
 - 40 socks
 - 18 milk
 - 16 books
 - 20 cars

Topic: Percentages 2 Page 121

- A.**
- (a) $\frac{3}{5}$, 0.6 (b) $\frac{1}{4}$, 0.25
(c) $\frac{3}{10}$, 0.3 (d) $\frac{2}{5}$, 0.4
(e) $\frac{7}{10}$, 0.7
 - (a) $\frac{1}{100}$, 0.01 (b) $\frac{7}{100}$, 0.07
(c) $\frac{1}{5}$, 0.2 (d) $\frac{7}{20}$, 0.35
(e) $\frac{3}{4}$, 0.75
 - (a) $\frac{2}{3}$, 0.66 (b) $\frac{1}{4}$, 0.25
(c) $\frac{1}{20}$, 0.05 (d) $\frac{1}{10}$, 0.1
(e) $\frac{7}{20}$, 0.35

- B.**
- (a) 25% (b) 75% (c) 10%
(d) 25% (e) 30% (f) 25%
 - (a) 33% (b) 20% (c) 60%
(d) 65% (e) 95% (f) 9%
 - (a) 13% (b) 21% (c) 33%
(d) 50% (e) 80% (f) 75%

- C.**
- (a) 33.33% (b) 66.66% (c) 16.66%
(d) 83.33% (e) 28.5% (f) 85.7%
 - (a) 22.22% (b) 77.77% (c) 88.88%
(d) 27.2% (e) 28.5% (f) 6.66%
 - (a) 91.6% (b) 93.3% (c) 95.2%
(d) 98% (e) 85.7% (f) 87.5%

Challenge Yourself

- 125%
- 110%
- 110%
- 133%
- 180%

Topic: Percentages 2 Page 122

- A.**
- Increase red cubes by 1.
Decrease green cubes by 2.
Increase blue cubes by 7.
Decrease yellow cubes by 4.
Increase orange cubes by 6.
Decrease purple cubes by 10.

- B.**
- | | |
|-------------|----------|
| 1. Increase | Decrease |
| (a) 11 | 9 |
| (b) 22 | 18 |
| (c) 21 | 7 |
| (d) 24 | 8 |
| (e) 36 | 24 |
| 2. (a) 75 | 25 |
| (b) 7.5 | 2.5 |
| (c) 10.5 | 3.5 |
| (d) 16 | 8 |
| (e) 18 | 12 |
| 3. Increase | Decrease |
| (a) 20 | 12 |
| (b) 42 | 6 |
| (c) 101 | 99 |

- 204
 - 196
 - 309
 - 291
- C.**
- €17.91
 - €26
 - €18
 - €2

- D.**
- Beach ball: €6.60
Jack in the box: €10.89
Roller Skates: €55.55
Tricycle: €49.50

Topic: Percentages 2 Page 123

- B.**
- (a) $\frac{1}{100}$, 0.01, 1%
(b) $\frac{1}{10}$, 0.1, 10%
(c) $\frac{1}{5}$, 0.2, 20%
(d) $\frac{3}{10}$, 0.3, 30%
(e) $\frac{8}{25}$, 0.32, 32%
(f) $\frac{9}{20}$, 0.45, 45%
(g) $\frac{3}{5}$, 0.6, 60%
 - (a) 16 (b) 20 (c) 7
(d) 60 (e) 5 (f) 40
(g) 12 (h) 6
 - (a) 15 (b) 28 (c) 36
(d) 100 (e) 108 (f) 30
(g) 20
 - (a) €5.50 (b) €6.05
(c) €9.68 (d) €13.53
(e) €20.24 (f) 11c
(g) 22c (h) 55c

- C.**
- (a) €1.52 (b) €4.59
(c) €3.30 (d) 70c
(e) €1.20
 - (a) €75 (b) €510
(c) €95 (d) €2,000
(e) €2,000

- D.**
- 50%
 - 20%
 - 25%
 - 20%
 - 10%
 - 1%
 - 80%

Star Store Pages 124 and 125

- Joe = 08:00
Anita = 12:00
Linda = 16:00
Enda = 09:00
James = 14:00
- Joe = 50hr
Anita = 50hr
Linda = 30hr
Enda = 18hr
James = 16hr
- Joe = 4hr 10min
Anita = 4hr 10min
Linda = 2hr 30min
Enda = 1hr 30min
James = 1hr 20min
- Joe = 8.3%
Anita = 8.3%
Linda = 8.3%

- Enda = 8.3%
James = 8.3%
- Apples – Star Store
Toilet Rolls – Star Store
Blackcurrant – Star Store
Sausages – Central Store
 - (a) €2.50 (b) €6.25
(c) €12.80 (d) €32.00
(e) 60c (f) €3.60
(g) €1.35
(h) 67.5c (we will assume that a shop would round to the nearest cent so 68c)
(i) €13.50

Item	Original	% Decrease	Price Decrease	New Price
Sandwich	€2.40	15%	36c	€2.04
Fries	€1.90	20%	38c	€1.52
Drum-Stick	90c	25%	22.5c	67.5c
Wrap	€3.60	5%	18c	€3.42
Quiche	€4.30	50%	€2.15	€2.15
Panini	€4.00	75%	€3.00	€1.00

Mental Maths 5 Pages 126 and 127

- A.**
- 49m²
 - 23:45
 - 5
 - 12:461
 - $\frac{19}{20}$
 - 8
 - 38
 - 50
 - 6, 12, 18, 24, 30
 - 54m²
 - 36m
 - $\frac{3}{4}$ kg
 - 85%
 - €110
 - 9m

- B.**
- 25
 - 5
 - 7
 - 5 for €1.15
 - $8\frac{3}{8}$, 8.375
 - 70m²
 - 3.33
 - €1.80
 - 28
 - 48
 - 36
 - Philip cannot score $\frac{18}{10}$ in test.
 - 75%
 - €6.60
 - $10\frac{2}{3}$

- C.**
- 6
 - €75
 - 2,200g
 - 45
 - $\frac{7}{20}$
 - 16
 - 1kg for €9
 - €10.78
 - 4 tenths
 - 500g for €2.10
 - 256m²
 - 64
 - false
 - 57
 - €378

- D.**
- €120
 - 4cm
 - 26
 - 9

5. 0.25 6. Right
7. 19 8. €25
9. 20 10. 3,200m

Topic: Area **Page 128**

- B.**
1. False 2. False
3. True 4. False
5. True 6. True
- C.**
1. (a) cm^2 (b) m^2 (c) m^2
(d) Depends on size of desk
(e) cm^2 (f) cm^2 (g) m^2
(h) cm^2 (i) cm^2
2. Teacher Check

Topic: Area **Page 129**

- A.**
(a) 22cm^2 (b) 26cm^2
(c) 10cm^2 (d) 9cm^2
- B.**
(a) $12\frac{1}{2}\text{cm}^2$ (b) 14cm^2
(c) 12cm^2 (d) $9\frac{1}{2}\text{cm}^2$
(e) 10cm^2

Topic: Area **Page 130**

- A.**
1. Length = 4cm
Width = 3cm
There are 3 rows of 4cm
Area = 12cm^2
2. Length = 4cm
Width = 2cm
There are 2 rows of 4cm
Area = 8cm^2
3. Length = 3cm
Width = 3cm
There are 3 rows of 3cm
Area = 9cm^2

- B.**
1. 8cm^2 2. 30cm^2 3. 35cm^2
4. 80cm^2 5. 36cm^2 6. 8cm^2
7. 24cm^2 8. 55cm^2 9. 34cm^2

- C.**
1. Schoolbook = 609cm^2
2. Playing card = 54cm^2
3. Notebook = 486cm^2
4. Envelope = 108cm^2
5. Newspaper = $1,204\text{cm}^2$

- D.**
1. (a) 90cm^2 (b) 144cm^2
(c) 125cm^2
2. (a) 240cm^2 (b) 99cm^2
(c) 202.5cm^2

Topic: Area **Page 131**

- A.**
1. $P = 20\text{m}$ $A = 25\text{m}^2$
2. $P = 32\text{m}$ $A = 64\text{m}^2$
3. $P = 40\text{cm}$ $A = 100\text{cm}^2$
4. $P = 56\text{cm}$ $A = 196\text{cm}^2$
5. $P = 60\text{cm}$ $A = 225\text{cm}^2$
6. $P = 76\text{cm}$ $A = 361\text{cm}^2$
7. $P = 80\text{cm}$ $A = 400\text{cm}^2$
8. $P = 54\text{m}$ $A = 182.25\text{m}^2$
9. $P = 41\text{m}$ $A = 105.0625\text{m}^2$

- B.**
1. $P = 54\text{cm}$, $A = 166\text{cm}^2$
2. $P = 26\text{cm}$, $A = 74\text{cm}^2$
3. $P = 50\text{cm}$, $A = 74\text{cm}^2$

Challenge Yourself

1. 2m
1. Teacher Check

Topic: Area **Page 132**

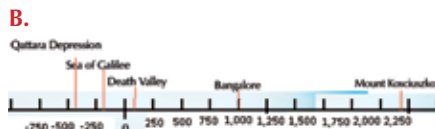
- B.**
1. Area = 45m^2
2. Width = 7cm
3. Sides = 7cm
4. 619.5cm^2
5. (a) 23m^2 (b) 76m^2 (c) 114m^2

- C.**
1. 36cm^2 2. 9m
3. 12cm 4. €57,600
5. 32m^2

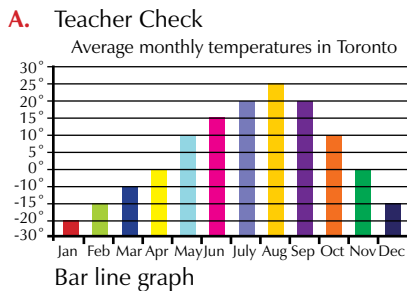
- D.**
1. space, 2D
2. square, metres
3. 1cm^2
4. multiplying, width
5. 42cm^2

- E.**
1. (a) 12m^2 (b) 0.5m^2
(c) 24 (d) €95.76

Topic: Directed Numbers
Page 133



Topic: Directed Numbers
Page 134



- B.**
1. degrees
2. minus
3. -3°
4. Negative four, positive four
5. Kiev, Vienna
6. 2°
7. Cairo
8. 5°
9. 2°

Topic: Directed Numbers
Page 135

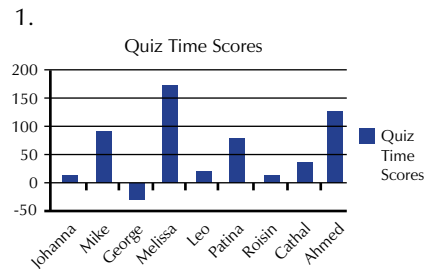
- A.**
1. + €10 2. -€10
3. €60 4. -€17
5. +€33 6. -€7
7. -€17 8. +€83
9. + €83

- B.**
1. Frederick Morecambe
2. George Cuffee
3. 2
4. Maurice Broderick
5. 20

Topic: Directed Numbers
Page 136

- A.**
1. Mike = 95
George = -25
Melissa = 170
Leo = 20
Patina = 80
Roisín = 5
Cathal = 35
Ahmed = 125
2. (a) Melissa (b) Mike
(c) George (d) George
(e) Leo (f) Leo
(g) Ahmed's (h) Mike
(i) Cathal (j) George

Challenge Yourself



2. Teacher Check

Topic: Directed Numbers
Page 137

- B.**
1. +7 2. 15 3. 60 4. -3
5. -20 6. +11 7. +5 8. -24
9. -13 10. -15

- C.**
Teacher Check

- D.**
1. positive
2. negative
3. positive
4. negative
5. negative
6. positive
7. temperature, degrees
8. zero, 0°C
9. debit
10. credit

- E.**
Share it! (Internet work).

Topic: The Circle **Page 138**

- B.**
1. Teacher Check
2. (a) False (b) False
(c) True (d) True

Topic: Rules and Properties
Page 145

A.

- (a) 13 (b) 56, 20 (c) -2, 6
- (a) 78 (b) 20, 6 (c) 40, 108
- (a) 20 (b) 54, 36 (c) 11, 27
- (a) 43, 15 (b) 81, 1 (c) 38, 18
- (a) 7, 67 (b) 240, 2 (c) 56, 29

B.

- (a) 35 (b) 35 (c) 52
- (a) 40 (b) 35 (c) 32
- (a) 350 (b) 504 (c) 120
- (a) 88 (b) 144 (c) 440
- True. 29, 48

C.

- (a) 22 (b) 400 (c) 34
- (a) 5 (b) 84 (c) 5
- (a) 9 (b) 32 (c) 5
- (a) 9 (b) 23 (c) 65
- (a) 164 (b) 1,440 (c) 26

D.

- True 2. True

Topic: Rules and Properties
Page 146

A.

- (a) 65 (b) 68 (c) 145
- (a) 2 (b) 108 (c) 125
- (a) 22 (b) 6 (c) 26
- (a) 0 (b) 142 (c) 32
- (a) 2.25 (b) 3.47 (c) 0

B.

- (a) 580 (b) 0.14 (c) 4,000
- (a) 567 (b) 0.328 (c) 2,000
- (a) 4,290 (b) 897 (c) 2.2
- (a) 39.3 (b) 468 (c) 344
- (a) 15.45 (b) 0.63 (c) 18
- (a) 65.12 (b) 145.75 (c) 113.595

C.

- (a) $2 + 3 + 4 = 9$
(b) $(2 + 3) \times 4 = 20$
(c) $2 + (3 \times 4) = 14$
(d) $2 \times 3 - 4 = 2$
(e) $2 \times 3 \times 4 = 24$
(f) $2 + 3 \div 4 = 1\frac{1}{4}$
(g) $2 \div 3 \times 4 = 2\frac{2}{3}$
(h) $2 \times (3 \div 4) = 1\frac{1}{2}$
(i) $2 \times 3 + 4 = 10$
(j) $2 + 3 - 4 = 1$
- 15, 5
20, 10
50, 15
35, 20
30, 30

Topic: Rules and Properties
Page 147

B.

- (a) 20, 24, 26

- (b) 62, 57, 52
(c) 76, 66, 54
(d) 54, 62, 71
- (a) 98, 91, 84, 77
(b) 64, 72, 80, 88
(c) 96, 112, 129, 147
(d) 21, 22, 24, 25
(e) 17.1, 18.7, 20.3, 21.9
(f) 8.4, 7.55, 6.7, 5.85

- 2, $2\frac{1}{12}$, $2\frac{1}{6}$, $2\frac{1}{4}$
- $\frac{1}{10}$, $\frac{1}{5}$, $\frac{3}{10}$, $\frac{2}{5}$, $\frac{1}{2}$, $\frac{3}{5}$, $\frac{7}{10}$, $\frac{4}{5}$

C.



2.



- New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, Waning Crescent

D.

- False 2. True
- True 4. True
- True 6. False
- False 8. True

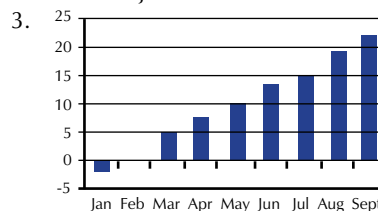
E.

Answer may vary. Example answers:

- = 5 ● = 4 ▲ = 7
■ = 7 ● = 3 ▲ = 6

Bloom's Garden Centre
Pages 148 and 149

- Coldest = January
Warmest = September
- (a) 7°C (b) 10°C (c) 12°C (d) 13°C
(e) 24°C (f) 19°C (g) 11°C (h) 3°C
(i) 14°C (j) 12°C



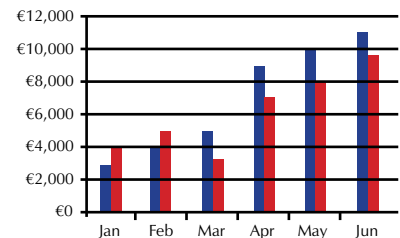
- (a) 8cm (b) Circumference
(c) Quadrant
- (a) (i) 90m² (ii) €2,160
(b) (i) 52m² (ii) €1,248
(c) (i) 51.5m² (ii) €1,236
(d) (i) 116m² (ii) €2,784
(e) (i) 176m² (ii) €4,224
(f) (i) 101.5m² (ii) €2,436
(g) (i) 13m² (ii) €312
(h) (i) 66.75m² (ii) €1,602

- (b) 52m² - 104 planks
(d) 116m² - 232 planks
(g) 101.5m² - 203 planks
- (a) Approximately 12
(b) Approximately 27
(c) Approximately 33
(d) Approximately 15
(e) Approximately 23
(f) Approximately 32

(a)	J	F	M
2010	€3,000	€4,000	€5,000
2011	€4,000	€5,000	€3,000

(a)	A	M	J
2010	€9,000	€10,000	€11,000
2011	€7,000	€8,000	€10,000

(b) Multiple bar chart of profits for 2010 and 2011



(c) €7,000

(d) Teacher Check

(e)

	2009	2010	2011	2012
	€5,000	€5,500	€6,000	€6,500
Water	€1,250	€1,375	€1,525	€1,700
Light	€121.00	€145.20	€169.40	€193.60

	2013	2014	2015	2016
	€7,000	€7,500	€8,000	€8,500
Water	€1,900	€2,125	€2,375	€2,650
Light	€217.80	€242.00	€266.20	€290.40

Mental Maths 6
Pages 150 and 151

A.

- €36
- 4
- 75%
- 225min
- €60
- 35.64
- 40m
- 8
- Radius
- 5.5
- 4.09
- Radius
- (1, 24), (2, 12), (3, 8), (4, 6) (6, 4)
- 2 litres for €2.50
- €18

B.

- 6:35pm
- €6.25
- 20
- $1\frac{9}{10}$
- 12
- 2.08
- Rhombus
- 20%
- $18\frac{1}{3}$
- 22°
- 22.5 litres
- $\frac{39}{8}$
- 1°
- $\frac{3}{5}$

15. 16,800m

C.

- $\frac{9}{10}$
- 15min
- 4
- Pentagonal prism
- 4·652
- 202
- Tetrahedron
- €963
- Square-based pyramid
- $\frac{40}{8}$
- $\frac{5}{8}$
- €36
- 93·75km per hour
- 91- C -8537
- 6

D.

- | | |
|------------------|--------------------|
| 1. Parallelogram | 2. 12,200 |
| 3. 10 | 4. True |
| 5. 24 | 6. $\frac{11}{12}$ |
| 7. 13 | 8. 36 |
| 9. 80 | 10. B |

Topic: Weight Page 152

Teacher Check

Topic: Weight Page 153

A.

- | | |
|-----------------|-----------------|
| 1. Bread 150g | 2. Burger 350g |
| 3. Carrots 450g | 4. Lettuce 800g |

B.

- | | |
|------------|------------|
| 1. 0·01kg | 2. 0·045kg |
| 3. 1·468kg | 4. 0·5kg |
| 5. 0·764kg | 6. 0·006kg |
| 7. 0·225kg | 8. 2·789kg |

C.

Teacher Check

D.

Teacher Check

Topic: Weight Page 154

A.

- Small pencil = 10g
 Grain of sand = 0·1g
 Horse = 540kg
 Jar of coffee = 200g
 Tin of beans = 450g
 1ltr of water = 1kg
 Bag of dried pasta = 500g
 Jar of jam = 450g
 Bag of potatoes = 2·5kg
 Small bar of chocolate = 50g

B.

Teacher Check

Challenge Yourself

Teacher Check

Topic: Weight Page 155

A.

- Dublin €82·40
 Manchester €155·07
 Warsaw €93·96
 New York €320·37

Total Cost = €651·80

Change = €48·20

B.

- Nenagh = €64·35
 Liverpool = €80·89
 Vilnius = €124·35
 Cairo = €174·10
 Rome = €277·46
 Mexico = €391·64

Topic: Weight Page 156

B.

- Teacher Check
- Laptop = 5kg
Dinner fork = 100g
Eraser = 20g
Small car = 1,000kg
5-year-old child = 25kg

C.

- | | |
|--------------|---------------|
| 1. €3·40 | 2. 375g |
| 3. 9·6kg | 4. €7·50 |
| 5. 14kg 100g | 6. 84c, €1·40 |

D.

Teacher Check

E.

Teacher Check

Topic: Number Sentences Page 157

B.

Teacher Check

C.

- | | | |
|--------------|-----------|-----------|
| 1. (a) False | (b) False | (c) False |
| 2. (a) True | (b) False | (c) True |
| 3. (a) False | (b) True | (c) False |
| 4. (a) False | (b) False | (c) False |
| 5. (a) False | (b) False | (c) True |

D.

- | | | |
|----------|-------|-------|
| 1. (a) > | (b) < | (c) = |
| 2. (a) = | (b) < | (c) = |
| 3. (a) = | (b) = | (c) = |
| 4. (a) < | (b) = | (c) = |

E.

- | | | |
|----------|-------|-------|
| 1. (a) × | (b) − | (c) + |
| 2. (a) ÷ | (b) − | (c) ÷ |
| 3. (a) − | (b) × | (c) + |

Topic: Number Sentences Page 158

A.

- (a) $17 - 11 = 6$
(iii) Eleven taken away from seventeen equals six.
(b) $7 \times 8 = 56$
(iv) Seven made eight times greater is fifty-six.
(c) $88 \div 11 = 8$
(v) Eighty-eight made eleven times smaller is eight.
(d) $90 = 52 + 38$
(ii) Ninety is equal to fifty-two plus thirty-eight.
(e) $60 \times 2 = 30 \times 4$
(i) Sixty times two is equal to thirty times four.

2. (a) $2 \times 13 = 26$

(b) $16 + 14 = 30$

(c) $55 - 49 = 6$

(d) $63 \div 7 = 3 \times 3$

(e) $90 = 9 \times 10$

B.

- $50 + 12 = 62$
- $13 + 12 = 25$
- $7 \times 8 = 56$
- $110 - (9 \times 12) = 2$
- $1 \cdot 2 \div 6 = 0 \cdot 2$

C.

Teacher Check

Topic: Number Sentences Page 159

A.

- (a) Fifteen plus seven is equal to twenty-two.
(b) Thirty-two minus eight equals twenty-four.
(c) Twenty-four divided by four equals six.
(d) Nine times eight equals seventy-two.
- (a) Eighty divided by nine equals eight remainder eight.
(b) Twenty-two plus twenty-one plus twenty equals sixty-three.
(c) Thirty times ten euro equals three hundred euro.
(d) Twelve plus nineteen minus eleven equals twenty.
- (a) Fifty-six divided by eight minus five equals two.
(b) Ten times four plus two equals forty-two.
(c) One quarter of twenty-eight equals seven.
(d) Three quarters of forty euro equals thirty euro.

B.

- (a) $\boxed{40} \div 8 = 5$
(b) $32 + \boxed{25} = 57$
- (a) $\boxed{29} + 33 = 62$
(b) $58 - \boxed{11} = 47$
- (a) $21 \div \boxed{7} = 3$
(b) $7 \times \boxed{5} = 35$
- (a) $\boxed{33} + 18 = 51$
(b) $72 - \boxed{60} = 12$
- (a) $\boxed{4} \times 6 = 24$
(b) $55 + \boxed{41} = 96$
- (a) $\boxed{22} \div 11 = 2$
(b) $\boxed{6} \times 3 = 18$
- (a) $72 - \boxed{60} = 12$
(b) $\boxed{4} \times 6 = 24$
- (a) $55 + \boxed{41} = 96$
(b) $\boxed{22} \div 11 = 2$

C.

- $12 \div \boxed{2} = 6$
- $\text{€}22 + \boxed{\text{€}28} = \text{€}50$
- $14 \times 4 = \boxed{56}$
- $50 - 32 = \boxed{18}$
- $(2 + 4 + 5) - 0.5 = \boxed{10.50}$

Topic: Number Sentences
Page 160

A.

- (a) Eighteen + twelve = thirty
(b) Seventy-two = six \times twelve
(c) Fifty – fifteen = thirty-five
(d) Twelve = one hundred and forty-four \div twelve
- (a) Five \times twelve = sixty
(b) Thirty – five + five = twenty
(c) Twenty-nine = fourteen \times two + one
(d) Twelve – seven + six = eleven
- (a) Nine \times nine + fourteen = ninety-five
(b) Sixteen – fifty-four \div nine = six
(c) Five \times five + six = thirty-one
(d) Twenty-one – eighteen \div three = fifteen

B.

- (a) $2 + 3 + 4 - 5 = 4$
(b) $2 + 3 + (4 \times 5) = 25$
(c) $2 + 3 + 4 + 5 = 14$
- (a) $(2 \times 3 - 4) \times 5 = 10$
(b) $(2 + 3) \times (4 \times 5) = 100$
(c) $(2 \times 3 \times 4) - 5 = 19$
- (a) $(2 + 3 + 4) \times 5 = 45$
(b) $(2 \times 3 \times 4) + 5 = 29$
(c) $2 \times 3 \times 4 \times 5 = 120$

C.

- (a) 1 (b) 12 (c) 17 (d) 90
- (a) 10 (b) 50 (c) 35 (d) 20
- (a) 9 (b) 5 (c) 16 (d) 25
- (a) 20 (b) 60 (c) 120 (d) 100
- (a) 9 (b) 12 (c) 65 (d) 190
- (a) 40 (b) 20 (c) 80 (d) 100

D.

- (a) 6 (b) 22.5 (c) 8.47 (d) 13
- (a) 60 (b) 200 (c) 300 (d) 200
- (a) 1 (b) 10 (c) 32 (d) 14
- (a) 200 (b) 60 (c) 80 (d) 40

Challenge Yourself

$$3,500 \times 4 = 14,000$$

$$14,000 \div 14 = 1,000$$

Topic: Number Sentences
Page 161

B.

- (a) = (b) < (c) < (d) <
(e) = (f) > (g) > (h) <
(i) <
- (a) 14 (b) 9 (c) 9 (d) 48
(e) 100 (f) 40 (g) 40 (h) 40
(i) 20

3. (a) 76 (b) 5 (c) 45 (d) 8

- (a) $67 - 9 + 10 = 68$
(b) $11 \times 5 \times 2 - 110$
(c) $20 - 5 - 4 = 11$
(d) $54 \div 9 \times 6 = 36$

C.

- $40 + 50 = 90$
- $24 - (5 + 6) = 13$
- $63 \div 9 = 7$ – zero scones were left
- $9 \times 8 = 72$
- $108 \div 12 = 9$
- $\text{€}5 \div 2 = \text{€}2.50$
- $\text{€}5 - (0.8 + 1.8 + 1.9) = \text{€}0.50$
- $180 - (30 \times 2) - (20 \times 2) = 80\text{min}$

D.

Teacher Check

E.

Teacher Check

Topic: 3D Shapes Page 162

B.

Name of shape	Number of faces	2D shape of each face	Number of vertices	Number of edges
Cuboid	6	rectangles	8	12
Cylinder	2	circles	0	2
Triangular prism	5	2 triangles 3 rectangles	6	9
Square-based pyramid	5	1 square 4 triangles	5	8
Hemisphere	1	circle	0	1
Cone	1	circle	0	1
Sphere	0	-	0	0
Cube	6	squares	8	12

Topic: 3D Shapes Page 163

A.

- 4
- 6
- 4
- 3
- Triangle
- Teacher Check

B.

Name of shape	Number of faces	2D shape of each face	Number of vertices	Number of edges
Rectangle-based pyramid	5	4 triangles 1 rectangle	5	8
Pentagonal pyramid	6	5 triangles 1 pentagon	6	10
Hexagonal pyramid	7	6 triangles 1 hexagon	7	12
Octagonal pyramid	9	8 triangles 1 octagon	9	16

D.

- Triangular prism
- Cuboid
- Cube
- Hexagonal prism
- Pentagonal prism
- Octagonal prism
- Trapezoidal prism

Topic: 3D Shapes Page 164

A.

Name of shape	Number of faces	2D shape of each face	Number of vertices	Number of edges
Cube	6	Squares	8	12
Pentagonal prism	7	2 pentagons 5 rectangles	10	15
Hexagonal prism	8	2 hexagons 6 rectangles	12	18
Trapezoidal prism	6	2 trapeziums 4 rectangles	8	12
Octagonal prism	10	2 octagons 8 rectangles	16	24

B.

- Regular
- Regular
- Irregular
- Irregular
- Regular

C.

- Triangle
 - Square
 - Pentagon
 - Hexagon
 - Hexagon or Septagon
 - Parallelogram
 - Rhombus
 - Trapezium
 - Octagon
 - Nonagon or Enneagon
- All of these shapes are polygons

Topic: 3D Shapes Page 165

A.

- Cube – Yes
- Cylinder – No
- Square-based pyramid – Yes
- Pentagonal prism – Yes
- Hexagonal pyramid – Yes
- Octagonal prism – Yes
- Cone – No
- Hemisphere – No
- Cuboid – Yes
- Triangular prism – Yes
- Hexagonal prism – Yes
- Rectangle-based pyramid – Yes
- Pentagonal pyramid – Yes

B.

- Regular
- Regular
- Irregular
- Irregular
- Regular

C.

- Yes
- No
- No
- No
- No

D.

- Cube
- Tetrahedron
- Triangular prism
- Cone
- Cylinder

Topic: 3D Shapes Page 166

B.

- 1 and 2

Name of shape	Number of faces	2-D shapes of faces	Number of edges
(a) Cone	1	circle	1
(b) Hexagonal prism	8	2 hexagons 6 rectangles	18
(c) Hexagonal pyramid	7	6 triangles 1 hexagon	12
(d) Cube	6	squares	12
(e) Square-based pyramid	5	1 square 4 triangles	8
(f) Pentagonal prism	7	2 pentagons 5 rectangles	15
(g) Hemisphere	1	circle	1

Name of shape	Number of vertices	Polygon
(a) Cone	0	no
(b) Hexagonal prism	12	yes
(c) Hexagonal pyramid	4	yes
(d) Cube	8	yes
(e) Square-based pyramid	5	yes
(f) Pentagonal prism	10	yes
(g) Hemisphere	0	no

- C.**
- Cube
 - Cuboid
 - Cylinder
 - Triangular prism
 - Square-based pyramid
 - Tetrahedron

- D.**
- Pyramids
 - Tetrahedron
 - Regular prism
 - Polygon
 - Polyhedra
 - Net

- E.**
- A
 - B
 - A

Topic: Data 2 Page 167

- B.**
- 8, 8, 9, 9, 10, 10, 11, 11, 11, 13
 - 8 years and 13 years
 - 11
 - 10

- C.**
- (a) 8 (b) 18
 - (a) 49 (b) 93
 - (a) 95 (b) 357

- D.**
- (a) 4 (b) 9
 - (a) 23 (b) 15
 - (a) 8 (b) 21

- Challenge Yourself**
- 45
 - 68

Topic: Data 2 Page 168

- A.**
- (a) Chicken salad and ham salad
(b) Tuna and sweetcorn
(c) Ham salad
 - (a) Ruby and Olivia

- (b) Sophie
(c) False

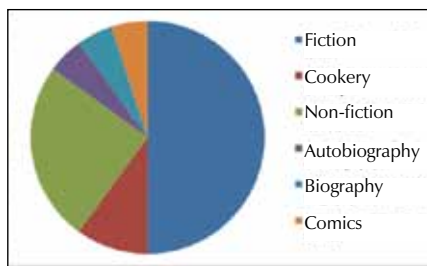
- B.**
- $\frac{1}{2}$
 - $\frac{1}{4}$
 - $\frac{1}{8}$
 - (a) 50% (b) 25%

Topic: Data 2 Page 169

- A.**
Favourite Types of Books

Fiction	Cookery	Non-fiction
50	10	25
$\frac{1}{2}$	$\frac{1}{10}$	$\frac{1}{4}$
180°	36°	90°

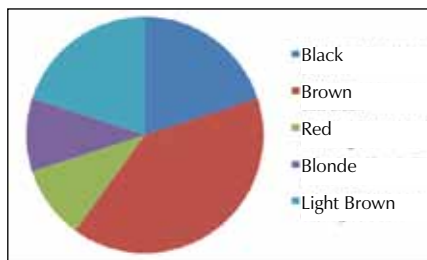
Autobiography	Biography	Comics
5	5	5
$\frac{1}{20}$	$\frac{1}{20}$	$\frac{1}{20}$
18°	18°	18°



Favourite types of books

- B.**
Hair colour of boys in 5th Class

Black	Brown	Red	Blonde	Light Brown
2	4	1	1	2
$\frac{1}{5}$	$\frac{2}{5}$	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{5}$
72°	144°	36°	36°	72°
20%	40%	10%	10%	20%



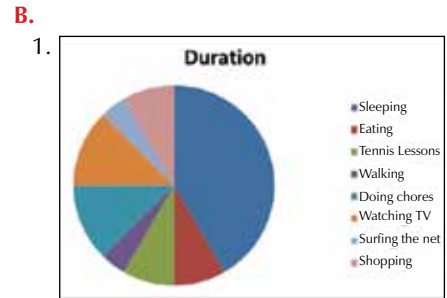
Hair colour of boys in 5th Class

- C.**
- 6
 - $\frac{1}{6}$
 - 18
 - (a) 60° (b) 120°

Topic: Data 2 Page 170

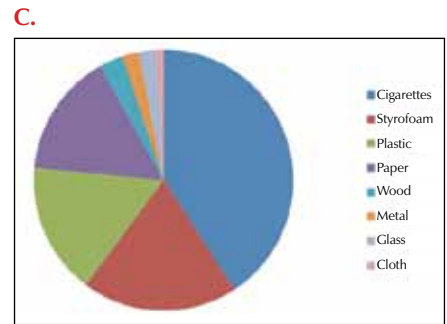
- A.**
- 10 people
 - $\frac{3}{10}$
 - 2

- 4
- 10%
- (a) 144° (b) 72°



A day in the life of Helen

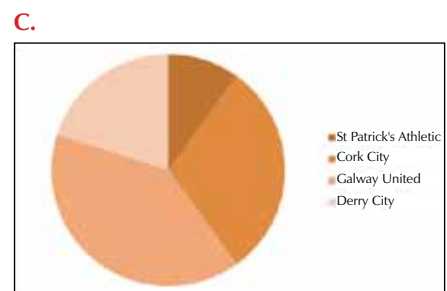
- (a) 15°
(b) (i) 150° (ii) 45° (iii) 30°
(c) (i) 3 hours (ii) 8 hours
(iii) 18 hours (iv) 24 hours
(d) $\frac{5}{12}$ (e) $\frac{1}{24}$
(f) 0.5 (g) 25%



Rubbish found on Brittas Bay

Topic: Data 2 Page 171

- B.**
- $\frac{1}{4}$
 - 90°
 - 6 hours
 - 120°
 - 8 hours
 - 3 hours
 - $\frac{1}{8}$
 - $\frac{1}{24}$
 - 30°
 - 2 hours
 - Watching a film



Favourite League of Ireland Football Team

- D.** Teacher Check
E. Teacher Check

School Tour Pages 172 and 173

- (a) Ann's: 2kg 795g
(b) Emma's: 1.065kg

- (c) 9-025kg
 (d) Ann: 3kg
 Pat: 2kg
 Emma: 1kg
 John: 2kg
 Laura: 1kg
 (e) 1-8kg
 2. (a) 5 Buses
 (b) Teacher check
 3. (a) Teacher check
 (b) $\frac{1}{12}$
 (c) 50%
 (d) 25%
 (e) $\frac{1}{6}$
 4. (a) $63 + 17 = 80$
 (b) $€84 - €16 = €68$
 (c) $€1 \cdot 20 \div 4 = 30c$
 (d) $25\% \text{ of } €12 \cdot 80 = €3 \cdot 20$

Mental Maths 7
Pages 174 and 175

- A.**
 1. 23m
 2. Teacher Check (Shape is inverted)
 3. 63c per week 4. 75%
 5. 4 litres 6. €20-79
 7. $\frac{1}{8}$ 8. $\frac{1}{7}$
 9. 18cm² 10. 17
 11. 22-5 12. $\frac{7}{8}$
 13. Teacher Check 14. 1 in 2
 15. 152
B.
 1. 1
 2. 4 faces 4 vertices
 3. Cylinder 4. 25%
 5. 25c 6. 1 litre 905ml
 7. €41-30 8. 11
 9. 4 10. 1 in 2
 11. 11° 12. 418
 13. 125° 14. 140 mins
 15. $\frac{1}{5}$
C.
 1. 80
 2. 2 (the rest are odd number) or 9 (the rest are prime number)
 3. €168 4. 2
 5. 240 6. $\frac{1}{5}$
 7. 1 out of 3 8. Teacher Check
 9. 74 marks 10. false
 11. 4 girls: 3 boys 12. false
 13. 5 @ €20 14. 21kg 595g
 15. €559-26
D.
 1. Litres 2. 8
 3. Circle 4. 1am
 5. 9-5cm 6. 269
 7. 30c 8. 24,589
 9. $\frac{2}{4}$ 10. 1 out of 2

Topic: Capacity **Page 176**

Teacher Check

Topic: Capacity **Page 177**

- A.**
 Teacher Check
B.
 Drawings – Jugs should show the following:
 1. 500ml full 2. 1 Litre full
 3. 250ml full 4. 750ml full
 5. 400ml full 6. 800ml full
 7. 300ml full 8. 700ml full

- C.**
 Teacher Check

Topic: Capacity **Page 178**

- A.**
 1. A = 900ml B = 600ml
 C = 300ml D = 100ml
 2. A = 700ml B = 500ml
 C = 200ml
 3. A = 800ml B = 600ml
 C = 400ml D = 200ml
 4. A = 180ml B = 130ml
 C = 80ml D = 30ml
 5. A = 150ml B = 120ml
 C = 80ml D = 20ml

- B.**
 1. a=30ml b=70ml c=60ml
 2. a=90ml b=40ml c=50ml
 3. a=100ml b=72ml c=64ml
 4. a=16ml b=18ml c=68ml
 5. a=1ml b=7ml c=4ml
 6. a=54ml b=34ml c=28ml
 7. a= 2ml b=9ml c=94ml

C.

	Fraction	Decimal fraction
1.	$\frac{3}{4}$	0-75
2.	$\frac{1}{10}$	0-1
3.	$\frac{1}{2}$	0-5
4.	$\frac{3}{10}$	0-3
5.	$\frac{9}{20}$	0-45
6.	$\frac{1}{4}$	0-25
7.	2	2-0
8.	$\frac{38}{1000}$	0-038

Topic: Capacity **Page 179**

- A.**
 1. (a) 120c (b) 110c
 2. Full tank €62-64
 Half tank €31-32
 3. 17l
 4. 42l
 5. €1,045
 6. Petrol = 72-01c
 Diesel = 60-35c
 7. Petrol = €3,600-50
 Diesel = €2,715-75
 Total = €6,316-25
 8. Petrol = 37c
 Diesel = 39c

- Heating Oil = 39c
 9. 108 deliveries in a week
 18 per day
 5,616 per year
 10. 81,000l per week
 13,500 per day
 4,212,000l per year
 11. The Shaw family
 Difference = €79-50

Topic: Capacity **Page 180**

- B.**
 1. Teacher Check
 2. Pool = 2-5 million litres
 Coffee Cup = 220ml
 Carton of orange juice = 2l
 Garden Pond = 100l
 Gravy dish = 300ml
 Baby's bottle = 290ml

- C.**
 1. 750l 2. 1-645l
 3. 1,400ml 4. €2-30
 5. 80%

- D.**
 1. Graduated Cylinder
 2. ml, litres
 3. ml
 4. litres

- E.**
 Teacher Check

Topic: Chance **Page 181**

Teacher Check

Topic: Chance **Page 182**

- A.**
 1. Certain 2. Certain
 3. Certain 4. Likely
 5. Unlikely 6. Certain
 7. Impossible 8. Likely
 9. Even 10. Unlikely

- B.**
 1. 1 out of 2, 1 out of 2.
 2. Teacher Check

Topic: Chance **Page 183**

- A.**
 1. (a) 1 chance out of 3
 (b) 1 chance out of 3
 (c) 1 chance out of 3
 (d) 2 chances out of 3
 (e) 2 chances out of 3
 (f) 2 chances out of 3
 2. (a) Yes = $\frac{1}{2}$, No = $\frac{1}{4}$, Maybe = $\frac{1}{4}$
 (b) 1 chance out of 2
 (c) 1 chance out of 4
 (d) 1 chance out of 4
 (e) 1 chance out of 2
 (f) 3 chances out of 4

- B.**
 1. False 2. True
 3. False 4. False
 5. True 6. True
 7. True 8. False

C.

- 1. 1 in 10
- 2. 1 in 10
- 3. 1 in 5
- 4. 3 in 10
- 5. 1 in 2
- 6. 2 in 5
- 7. 1 in 2
- 8. Even
- 9. Even

Topic: Chance Page 184

A.

- 1. (a) 1 in 6 (b) 1 in 2
- (c) 1 in 2 (d) 2 in 3
- 2.-5. Teacher Check

B.

- 1. 52, 13
- 2. Clubs, diamonds, hearts, spades
- 3. (a) 1 in 2 (b) 1 in 13
- (c) 1 in 13 (d) 1 in 4
- (e) 9 in 13 (f) 3 in 13

Topic: Chance Page 185

A.

- 1. Teacher Check
- 2. Most likely = Red
- Least likely = Yellow, Blue, Green
- 3. Teacher Check
- 4. Teacher Check
- 5. (a) 1 in 2 (b) 1 in 6

B.

- 1. Teacher Check
- 2. (a) Purple
- (b) Yellow, green, black
- 3. Teacher Check
- 4. Teacher Check
- 5. (a) 1 in 4 (b) 1 in 3
- (c) No (d) Yellow, black
- (e) (i) 25 (ii) 17 (iii) 8
- (f) 20 times
- (g) Teacher Check

Topic: Chance Page 186

B.

1.

	Tally	Total	Fraction
Lobster		4	$\frac{1}{10}$
Trout		20	$\frac{1}{2}$
Crab		5	$\frac{1}{8}$
Jellyfish		3	$\frac{3}{40}$
Sea bass		8	$\frac{1}{5}$

- 2. Trout
- Sea bass
- Crab
- Lobster
- Jellyfish
- 3. Trout
- 4. (a) Box 3 = Most likely
- (b) Box 2 = Least likely

C.

- 1. 1 in 2
- 2. Black
- 3. Red and white
- 4. 1 in 3
- 5. (a) 1 in 30 (b) 1 in 28

D.

- 1. Unlikely
- 2. Certain
- 3. Even
- 4. Certain
- 5. Unlikely

E.

Teacher Check

Let's Look Back Page 187

A.

- 1. Gorey = 51,256
- Castlebar = 10,564
- Tuam = 21,234
- Dundalk = 98,945
- Men = 51,284
- Women = 70,251
- Children = 60,464
- Total = 181,999
- 2. Gorey = 51,260 51,300 51,000
- Castlebar = 10,560 10,600 11,000
- Tuam = 21,230 21,200 21,000
- Dundalk = 98,950 98,900 99,000
- 3. (a) 40,692 (b) 77,711
- (c) 30,022
- 4. (a) 109,509 (b) 72,490
- (c) 61,820
- 5. Gorey = Fifty-one thousand two hundred and fifty-six.
- Castlebar = Ten thousand five hundred and sixty-four.
- Tuam = Twenty-one thousand two hundred and thirty-four.
- Dundalk = Ninety-eight thousand nine hundred and forty-five.

B.

- 1. Teacher Check
- 2. Teacher Check

C.

- 1. (a) $\frac{3}{4}$ (b) $\frac{1}{2}$ (c) $\frac{5}{6}$ (d) $\frac{4}{9}$
- (e) $\frac{1}{10}$ (f) $\frac{1}{8}$
- 2. (a) 9 (b) $7\frac{5}{6}$ (c) $15\frac{3}{10}$ (d) $3\frac{11}{12}$
- (e) $4\frac{7}{8}$ (f) $2\frac{1}{3}$

Let's Look Back Page 188

A.

- 1. €20
- 2. €15
- 3. 30%
- 4. €5, 10%
- 5. He would have saved €5

B.

- Teacher Check
- 1. 64
- 2. 64
- 3. 128
- 4. Blueberry
- 5. Apple
- 6. 16
- 7. Apple

C.

- 1. 24
- 2. 55 spellings wrong
- 3. $\frac{1}{2}$
- 4. Ate $\frac{8}{15}, \frac{7}{15}$ left
- 5. Reduced by €130, sale price €520
- 6. 60 Daffodils, 50 roses, 90 gardenias

Let's Look Back Page 189

A.

- 1. 20%
- 2. 25%

B.

- 1. (a) 606-9 (b) 804-6
- (c) 471 (d) 47
- 2. (a) 177-94 (b) 373-98
- (c) 820-41 (d) 2,059-88
- 3. (a) 9 (b) 76
- (c) 1-2 (d) 0-9
- 4. (a) 0-138 (b) 0-705
- (c) 0-14 (d) 0-33

C.

- 1. Right
- 2. Straight Line
- 3. Reflex
- 4. Full rotation
- 5. Obtuse
- 6. Acute

D.

- 1. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29
- 2. 3rd 9, 4th 16, 5th 25, 6th 36, 7th 49
- 3. (a) 24: (1,24) (2,12) (3,8) (4,6) (6,4)
- (8,3) (12,2) (24,1)
- (b) 36: (1,36) (2,18) (3,12) (4,9) (9,4)
- (12,3) (18,2) (36,1)
- (c) 45: (3,15) (5,9) (1,45) (9,5) (15,3)
- (45,1)
- 4. (a) 3: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30
- (b) 5: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50
- (c) 8: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80

E.

- 1. -2
- 2. 17 floors
- 3. -2
- 4. 3
- 5. 21 seconds
- 6. 30 seconds
- 7. 55 Seconds

Let's look Back Page 190

A.

- 1. (a) 21 (b) 14 (c) 5 (d) 20
- 2. (a) 126 (b) 77 (c) 34 (d) 1
- 3. (a) 12 (b) 12 (c) 1 (d) 2-75

B.

- 1. Cylinder
- 2. Tetrahedron
- 3. Hexagonal Prism
- 4. Cuboid
- 5. Triangular Prism

C.

- 1. 42km
- 2. 96kg Average = 32kg
- 3. 14-00
- 4. 85km²
- 5. 19-35 litres, €24.38

D.

- 1. 2:8 or 1:4
- 2. 4:8 or 1:2
- 3. 4:8 or 1:2
- 4. 4:8 or 1:2
- 5. 3:8
- 6. 4:8 or 1:2