

NEW WAVE

NUMBER AND ALGEBRA (YEAR 6)

STUDENT WORKBOOK ANSWERS

N&PV – 1

Page 2 Fun with composite numbers

- Teacher check
- 4, 6, 8, 9, 10
- 12, 14, 15, 16, 18, 20
- 32, 33, 34, 35, 36, 38, 39, 40
- 42, 44, 45, 46, 48, 49, 50
- 51, 52, 54, 55, 56, 57, 58, 60
- 90 – 2, 3, 5, 6, 9, 10, 15, 18, 30, 45
87 – 3, 29
119 – 7, 17
96 – 2, 3, 4, 6, 8, 12, 16, 24, 32, 48
81 – 3, 9, 27
114 – 2, 3, 6, 19, 38, 57
108 – 2, 3, 4, 6, 9, 12, 18, 27, 36, 54

Page 3 Triangular numbers

- $1 + 2 = 3$
 $1 + 2 + 3 = 6$
 $1 + 2 + 3 + 4 = 10$
 $1 + 2 + 3 + 4 + 5 = 15$
 $1 + 2 + 3 + 4 + 5 + 6 = 21$
 $1 + 2 + 3 + 4 + 5 + 6 + 7 = 28$

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

- Teacher check

Page 4 Colour code

Prime – 1, 2, 3, 5, 7, 11, 13, 17, 19, 23
 Composite – 4, 6, 8, 9, 10, 12, 15, 16, 21, 25, 28, 36, 42, 45, 48, 49, 64, 65, 66, 78, 81, 100, 104, 121, 144
 Square – 4, 9, 16, 25, 36, 49, 64, 81, 121, 144
 Triangular – 6, 10, 21, 28, 36, 45, 66, 78
 Numbers that appear more than once:
 4, 6, 9, 10, 16, 21, 25, 28, 36, 45, 49, 64, 66, 78, 81, 121, 144

Page 5 The search for primes

Key	1	2	3	4	5	6	7	8	9	10
Red	(11)	12	(13)	14	15	16	(17)	18	(19)	20
Green	21	22	(23)	24	25	26	27	28	(29)	30
Purple	(31)	32	33	34	35	36	(37)	38	39	40
Blue	(41)	42	(43)	44	45	46	(47)	48	49	50
Prime	51	52	(53)	54	55	56	57	58	(59)	60
	(61)	62	63	64	65	66	(67)	68	69	70
	(71)	72	(73)	74	75	76	77	78	(79)	80
	81	82	(83)	84	85	86	87	88	(89)	90
	91	92	93	94	95	96	(97)	98	99	100

Page 6 Golf anyone?

Key	Hole	Metres	Par	Stroke index	Your score	Partner's score
Prime	1 ▲	(410)	4 ■	(3)	(5)	(7)
Composite	(2)	(359)	4 ■	9 ■	(3)	6 ▲
Square	(3) ▲	(173)	(3)	(13)	(7)	4 ■
Triangular	4 ■	323	4 ■	15 ▲	6 ▲	4 ■
	(5)	451	4 ■	(11)	(5)	(5)
	6 ▲	424	4 ■	1 ▲	4 ■	9 ■
	(7)	441 ■	4 ■	(5)	(7)	4 ■
	8	129	(3)	(17)	9 ■	(2)
	9 ■	501	(5)	(7)	(5)	6 ▲
	Total		35		51	(47)
Key	Hole	Metres	Par	Stroke index	Your score	Partner's score
	10 ▲	166	(3) ▲	8	4 ■	(3) ▲
	(11)	(431)	(5)	4 ■	9 ■	(5)
	12	288	4 ■	14	4 ■	6 ▲
	(13)	220	(3) ▲	(2)	(5)	6 ▲
	14	301	4 ■	10 ▲	6 ▲	6 ▲
	15 ▲	153	(3) ▲	16 ■	(7)	(5)
	16 ■	297	4 ■	18	(3)	4 ■
	(17)	289 ■	4 ■	6	4 ■	4 ■
	18	(419)	(5)	12	8	(5)
	Total		35		46	44

N&PV – 2

Page 7 Addition and subtraction go together

667 + 486 = 1153 789 + 396 = 1185 1938 + 495 = 2433
 337 + 872 = 1209 593 + 985 = 1578 958 + 730 = 1688
 902 – 345 = 557 1120 – 736 = 384 1007 – 225 = 782
 1234 – 558 = 676 912 – 385 = 527 1289 – 447 = 842
 1010 – 374 = 636 1194 – 818 = 376 1310 – 997 = 313

Page 8 Pump price discounts

Price per litre \$	Pump total \$	Litres purchased	4c per litre discount =	You pay \$
\$1.24	\$43.40	35 L	\$1.40	\$42.00
\$1.24	\$64.48	52 L	\$2.08	\$62.40
\$1.24	\$52.08	42 L	\$1.68	\$50.40
\$1.24	\$48.36	39 L	\$1.56	\$46.80
\$1.24	\$59.52	48 L	\$1.76	\$57.76
\$1.24	\$62.00	50 L	\$2.00	\$60.00
\$1.24	\$44.64	36 L	\$1.44	\$43.20
\$1.24	\$57.04	46 L	\$1.84	\$55.20
\$1.24	\$84.32	68 L	\$2.72	\$81.60
\$1.24	\$45.88	37 L	\$1.48	\$44.40

Page 8 Pump price discounts (continued)

Price per litre \$	Pump total \$	Litres purchased	6c per litre discount =	You pay \$
\$1.31	\$60.26	46 L	\$2.76	\$57.50
\$1.31	\$73.36	56 L	\$3.36	\$70.00
\$1.31	\$64.19	49 L	\$2.94	\$61.25
\$1.31	\$91.70	70 L	\$4.20	\$87.50
\$1.31	\$79.91	61 L	\$3.66	\$76.25
\$1.31	\$22.27	17 L	\$1.02	\$21.25
\$1.31	\$37.99	29 L	\$1.74	\$36.25
\$1.31	\$68.12	52 L	\$3.12	\$65.00
\$1.31	\$56.33	43 L	\$2.58	\$53.75
\$1.31	\$79.91	61 L	\$3.66	\$76.25

Page 9 Subtraction with zeros—don't be heroes

$\begin{array}{r} 7000 \\ - 5675 \\ \hline 1325 \end{array}$	$\begin{array}{r} 6000 \\ - 4787 \\ \hline 1213 \end{array}$		
$\begin{array}{r} 10\ 000 \\ - 7\ 649 \\ \hline 2\ 351 \end{array}$	$\begin{array}{r} 4000 \\ - 1267 \\ \hline 2733 \end{array}$		
$\begin{array}{r} 700\ 000 \\ - 78\ 605 \\ \hline 621\ 395 \end{array}$	$\begin{array}{r} 600\ 000 \\ - 22\ 787 \\ \hline 577\ 213 \end{array}$	$\begin{array}{r} 100\ 000 \\ - 84\ 919 \\ \hline 15\ 081 \end{array}$	$\begin{array}{r} 40\ 100 \\ - 22\ 658 \\ \hline 17\ 442 \end{array}$
$\begin{array}{r} 8100 \\ - 5488 \\ \hline 2612 \end{array}$	$\begin{array}{r} 6100 \\ - 3387 \\ \hline 2713 \end{array}$	$\begin{array}{r} 10\ 100 \\ - 3\ 349 \\ \hline 6751 \end{array}$	$\begin{array}{r} 4100 \\ - 1727 \\ \hline 2373 \end{array}$
$\begin{array}{r} 7001 \\ - 3542 \\ \hline 3459 \end{array}$	$\begin{array}{r} 6001 \\ - 4465 \\ \hline 1536 \end{array}$	$\begin{array}{r} 10\ 001 \\ - 2\ 765 \\ \hline 7\ 236 \end{array}$	$\begin{array}{r} 4001 \\ - 3157 \\ \hline 844 \end{array}$
$\begin{array}{r} 7010 \\ - 3485 \\ \hline 3525 \end{array}$	$\begin{array}{r} 6010 \\ - 5697 \\ \hline 313 \end{array}$	$\begin{array}{r} 10\ 010 \\ - 2\ 259 \\ \hline 7751 \end{array}$	$\begin{array}{r} 4010 \\ - 2637 \\ \hline 1373 \end{array}$

Page 10 Addition, addition, addition

$\begin{array}{r} 3999 \\ + 1431 \\ \hline 5430 \end{array}$	$\begin{array}{r} 4999 \\ + 4323 \\ \hline 9322 \end{array}$	$\begin{array}{r} 19\ 999 \\ + 3\ 441 \\ \hline 23\ 440 \end{array}$	$\begin{array}{r} 4999 \\ + 1243 \\ \hline 6242 \end{array}$
$\begin{array}{r} 37\ 777 \\ + 32\ 471 \\ \hline 70\ 248 \end{array}$	$\begin{array}{r} 47\ 777 \\ + 22\ 323 \\ \hline 70\ 100 \end{array}$	$\begin{array}{r} 177\ 777 \\ + 24\ 111 \\ \hline 201\ 888 \end{array}$	$\begin{array}{r} 4\ 717 \\ + 22\ 412 \\ \hline 27\ 129 \end{array}$
$\begin{array}{r} 2188 \\ + 1422 \\ \hline 3610 \end{array}$	$\begin{array}{r} 5864 \\ + 3323 \\ \hline 9187 \end{array}$	$\begin{array}{r} 21\ 189 \\ + 3\ 341 \\ \hline 24\ 530 \end{array}$	$\begin{array}{r} 4167 \\ + 1323 \\ \hline 5490 \end{array}$
$\begin{array}{r} 3991 \\ + 3142 \\ \hline 7133 \end{array}$	$\begin{array}{r} 8991 \\ + 4441 \\ \hline 13\ 432 \end{array}$	$\begin{array}{r} 13\ 491 \\ + 2\ 341 \\ \hline 15\ 832 \end{array}$	$\begin{array}{r} 5891 \\ + 3113 \\ \hline 9004 \end{array}$
$\begin{array}{r} 22\ 919 \\ + 3\ 421 \\ \hline 26\ 340 \end{array}$	$\begin{array}{r} 6459 \\ + 1413 \\ \hline 7872 \end{array}$	$\begin{array}{r} 21\ 319 \\ + 2\ 211 \\ \hline 23\ 530 \end{array}$	$\begin{array}{r} 6319 \\ + 2433 \\ \hline 8752 \end{array}$

Page 11 Multiplication with zeros

$\begin{array}{r} 3981 \\ \times 700 \\ \hline 2\ 786\ 700 \end{array}$	$\begin{array}{r} 7485 \\ \times 400 \\ \hline 2\ 994\ 000 \end{array}$		
$\begin{array}{r} 19\ 549 \\ \times 300 \\ \hline 5\ 864\ 700 \end{array}$	$\begin{array}{r} 4999 \\ \times 600 \\ \hline 2\ 999\ 400 \end{array}$		
$\begin{array}{r} 36\ 165 \\ \times 4\ 000 \\ \hline 144\ 660\ 000 \end{array}$	$\begin{array}{r} 65\ 499 \\ \times 7\ 000 \\ \hline 458\ 493\ 000 \end{array}$	$\begin{array}{r} 13\ 345 \\ \times 3\ 000 \\ \hline 40\ 035\ 000 \end{array}$	$\begin{array}{r} 6719 \\ \times 2000 \\ \hline 13\ 438\ 000 \end{array}$
$\begin{array}{r} 2449 \\ \times 40 \\ \hline 97\ 960 \end{array}$	$\begin{array}{r} 6619 \\ \times 50 \\ \hline 330\ 950 \end{array}$	$\begin{array}{r} 15\ 567 \\ \times 30 \\ \hline 467\ 010 \end{array}$	$\begin{array}{r} 4883 \\ \times 80 \\ \hline 390\ 640 \end{array}$
$\begin{array}{r} 3561 \\ \times 300 \\ \hline 1\ 068\ 300 \end{array}$	$\begin{array}{r} 4281 \\ \times 400 \\ \hline 1\ 712\ 400 \end{array}$	$\begin{array}{r} 12\ 351 \\ \times 700 \\ \hline 8\ 645\ 700 \end{array}$	$\begin{array}{r} 30\ 451 \\ \times 5\ 000 \\ \hline 152\ 255\ 000 \end{array}$
$\begin{array}{r} 3219 \\ \times 80 \\ \hline 257\ 520 \end{array}$	$\begin{array}{r} 46\ 833 \\ \times 40 \\ \hline 1\ 873\ 320 \end{array}$	$\begin{array}{r} 14\ 519 \\ \times 60 \\ \hline 871\ 140 \end{array}$	$\begin{array}{r} 78\ 819 \\ \times 20 \\ \hline 1\ 576\ 380 \end{array}$

Page 12 Addition and subtraction—the same sum or different?

1. (a) $\begin{array}{r} 93\ 832 \\ - 56\ 784 \\ \hline 37\ 048 \end{array}$	$\begin{array}{r} 93\ 832 \\ + 56\ 784 \\ \hline 150\ 616 \end{array}$		
(b) $\begin{array}{r} 14\ 509 \\ - 7\ 882 \\ \hline 6\ 627 \end{array}$	$\begin{array}{r} 14\ 509 \\ + 7\ 882 \\ \hline 22\ 391 \end{array}$		
(c) $\begin{array}{r} 64\ 551 \\ - 32\ 114 \\ \hline 32\ 437 \end{array}$	$\begin{array}{r} 64\ 551 \\ + 32\ 114 \\ \hline 96\ 665 \end{array}$	(h) $\begin{array}{r} 21\ 399 \\ - 15\ 010 \\ \hline 6\ 389 \end{array}$	$\begin{array}{r} 21\ 399 \\ + 15\ 010 \\ \hline 36\ 409 \end{array}$
(d) $\begin{array}{r} 77\ 023 \\ - 41\ 596 \\ \hline 35\ 427 \end{array}$	$\begin{array}{r} 77\ 023 \\ + 41\ 596 \\ \hline 118\ 619 \end{array}$	(i) $\begin{array}{r} 38\ 923 \\ - 11\ 778 \\ \hline 27\ 145 \end{array}$	$\begin{array}{r} 38\ 923 \\ + 11\ 778 \\ \hline 50\ 701 \end{array}$
(e) $\begin{array}{r} 39\ 282 \\ - 29\ 023 \\ \hline 10\ 259 \end{array}$	$\begin{array}{r} 39\ 282 \\ + 29\ 023 \\ \hline 68\ 305 \end{array}$	(j) $\begin{array}{r} 52\ 066 \\ - 23\ 887 \\ \hline 28\ 179 \end{array}$	$\begin{array}{r} 52\ 066 \\ + 23\ 887 \\ \hline 75\ 953 \end{array}$
(f) $\begin{array}{r} 61\ 993 \\ - 38\ 827 \\ \hline 23\ 166 \end{array}$	$\begin{array}{r} 61\ 993 \\ + 38\ 827 \\ \hline 100\ 820 \end{array}$	(k) $\begin{array}{r} 26\ 209 \\ - 9\ 846 \\ \hline 16\ 363 \end{array}$	$\begin{array}{r} 26\ 209 \\ + 9\ 846 \\ \hline 36\ 055 \end{array}$
(g) $\begin{array}{r} 77\ 309 \\ - 38\ 936 \\ \hline 38\ 373 \end{array}$	$\begin{array}{r} 77\ 309 \\ + 38\ 936 \\ \hline 116\ 245 \end{array}$	(l) $\begin{array}{r} 31\ 663 \\ - 24\ 409 \\ \hline 7\ 254 \end{array}$	$\begin{array}{r} 31\ 663 \\ + 24\ 409 \\ \hline 56\ 072 \end{array}$

2. Pair of equations with the wider range in answers is (a)

N&PV – 3

Page 13 The Great TV Quiz – 1

- 5
- 2
- 7
- 2
- 7
- 0
- 3

Page 14 The Great TV Quiz – 2

8. 2
9. -1
10. -2
11. 3
12. Jackson -5, Susan -2, Sam -7, Nigel -7, Gavin -3, Freddie -2, Wendy 1
13. Ana 2, Warren 2, Ivan 3
14. Ivan 3
15. Nigel -7 and Sam -7

Page 15 What's their range?

	Mon	Tue	Wed	Thur	Fri
Freezeville	24	23	30	22	24
Chilltown	18	20	22	30	24
Imafrozen	25	21	22	23	22
Blizzard	27	24	26	23	24
Fridgetown	29	30	28	33	24
Polarville	12	19	15	17	20

Page 16 Select the spot

Teacher check

Page 17 It can get cold!

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Coldville	25	22	23	24	19	21	17	21	23	23	29	22
Chilltown	22	16	17	16	18	17	17	17	19	18	16	15
Freezertown	19	19	20	20	19	18	17	19	15	14	15	16

Teacher check number lines

Page 18 Name the spot

1. -4
2. -3
3. -9
4. 0
5. 3
6. -4
7. -1
8. -5
9. 1

Page 19 Two dice, please roll

Teacher check

Page 20 Using Scootle—Scale matters

Teacher check

F&D – 1

Page 21 Pick the equivalent fractions

- | | | |
|-----------------------------------|----------------------------------|--|
| $\frac{4}{5}$ and $\frac{8}{10}$ | $\frac{3}{8}$ and $\frac{6}{16}$ | Largest = $\frac{4}{5}$ and $\frac{8}{10}$ |
| $\frac{9}{10}$ and $\frac{3}{5}$ | $\frac{3}{9}$ and $\frac{1}{3}$ | Largest = $\frac{9}{10}$ and $\frac{3}{5}$ |
| $\frac{2}{3}$ and $\frac{6}{9}$ | $\frac{6}{8}$ and $\frac{3}{4}$ | Largest = $\frac{6}{8}$ and $\frac{3}{4}$ |
| $\frac{2}{3}$ and $\frac{8}{12}$ | $\frac{3}{4}$ and $\frac{9}{12}$ | Largest = $\frac{3}{4}$ and $\frac{9}{12}$ |
| $\frac{2}{3}$ and $\frac{10}{15}$ | $\frac{9}{12}$ and $\frac{3}{4}$ | Largest = $\frac{9}{12}$ and $\frac{3}{4}$ |
| $\frac{2}{8}$ and $\frac{1}{4}$ | $\frac{2}{3}$ and $\frac{4}{6}$ | Largest = $\frac{2}{3}$ and $\frac{4}{6}$ |

- | | | |
|----------------------------------|-----------------------------------|--|
| $\frac{6}{8}$ and $\frac{3}{4}$ | $\frac{5}{7}$ and $\frac{10}{14}$ | Largest = $\frac{6}{8}$ and $\frac{3}{4}$ |
| $1\frac{1}{2}$ and $\frac{3}{2}$ | $\frac{2}{3}$ and $\frac{6}{9}$ | Largest = $1\frac{1}{2}$ and $\frac{3}{2}$ |
| $\frac{2}{9}$ and $\frac{4}{18}$ | $\frac{9}{12}$ and $\frac{3}{4}$ | Largest = $\frac{9}{12}$ and $\frac{3}{4}$ |

Page 22 On this line

Teacher check

Page 23 Between zero and two

Teacher check

Page 24 How well do you know your fractions?

1. $\frac{1}{9}, \frac{3}{16}, \frac{3}{8}, \frac{4}{10}, \frac{5}{12}$
2. $\frac{5}{8}, \frac{3}{10}, \frac{1}{4}, \frac{2}{9}, \frac{2}{11}$
3. $\frac{5}{16}, \frac{1}{3}, \frac{7}{15}, \frac{6}{10}, \frac{5}{8}$
4. $\frac{3}{11}, \frac{4}{10}, \frac{3}{7}, \frac{5}{9}, \frac{5}{8}$
5. $\frac{4}{7}, \frac{3}{8}, \frac{4}{11}, \frac{5}{16}, \frac{2}{9}$
6. $\frac{3}{10}, \frac{3}{7}, \frac{4}{9}, \frac{9}{16}, \frac{5}{8}$
7. $\frac{7}{11}, \frac{6}{10}, \frac{1}{3}, \frac{5}{16}, \frac{1}{4}$
8. $\frac{8}{10}, \frac{4}{7}, \frac{9}{16}, \frac{1}{2}, \frac{7}{15}$
9. $\frac{9}{14}, \frac{11}{16}, \frac{3}{4}, \frac{12}{15}$

F&D – 2

Page 25 Fabulous fractions

1. (a)

	$\frac{3}{10}$	$\frac{9}{10}$	$\frac{5}{10}$	$\frac{6}{10}$
$\frac{4}{5}$	$1\frac{1}{10}$	$1\frac{7}{10}$	$\frac{9}{10}$	$1\frac{4}{10}$
$\frac{1}{5}$	$\frac{5}{10}$	$1\frac{1}{10}$	$\frac{7}{10}$	$\frac{8}{10}$
$\frac{2}{5}$	$\frac{7}{10}$	$1\frac{3}{10}$	$\frac{9}{10}$	1
$\frac{3}{5}$	$\frac{9}{10}$	$1\frac{5}{10}$	$1\frac{1}{10}$	$1\frac{2}{10}$

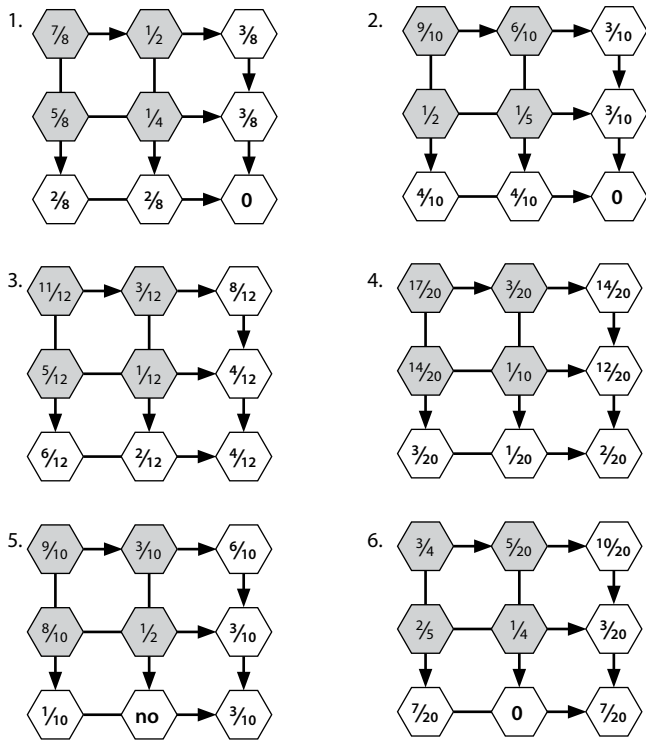
 (b)

	1	$\frac{3}{4}$	$\frac{1}{4}$	$\frac{1}{2}$
1	2	$1\frac{3}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$
$\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{1}{2}$	1	$1\frac{1}{4}$
$\frac{1}{4}$	$1\frac{1}{4}$	1	$\frac{1}{2}$	$\frac{3}{4}$
$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{4}$	$\frac{3}{4}$	1
- (c)

	1	$\frac{1}{6}$	$\frac{3}{6}$	$\frac{5}{6}$
1	2	$1\frac{1}{6}$	$1\frac{3}{6}$	$1\frac{5}{6}$
$\frac{1}{6}$	$1\frac{1}{6}$	$\frac{2}{6}$	$\frac{4}{6}$	1
$\frac{3}{6}$	$1\frac{3}{6}$	$\frac{4}{6}$	1	$1\frac{2}{6}$
$\frac{5}{6}$	$1\frac{5}{6}$	1	$1\frac{2}{6}$	$1\frac{4}{6}$

2. (a) $\frac{4}{8}$ or $\frac{2}{4}$ or $\frac{1}{2}$ (b) $\frac{19}{30}$ (c) $\frac{1}{20}$
 (d) $\frac{6}{12}$ or $\frac{1}{2}$ (e) $\frac{3}{16}$ (f) $\frac{6}{20}$ or $\frac{3}{10}$
 (g) $\frac{1}{10}$ (h) $\frac{1}{8}$ (i) $\frac{4}{10}$ or $\frac{2}{5}$
 (j) $\frac{3}{8}$
3. (a) $\frac{4}{9}$ (b) $\frac{7}{9}$ (c) $\frac{7}{12}$
 (d) $\frac{5}{12}$ (e) $\frac{7}{16}$ (f) $\frac{4}{20}$ or $\frac{1}{5}$
 (g) $\frac{7}{10}$ (h) $1\frac{7}{8}$ (i) $1\frac{3}{20}$
 (j) $1\frac{2}{16}$ or $1\frac{1}{8}$
4. (a) 3 (b) $1\frac{1}{2}$ (c) $\frac{7}{8}$
 (d) $1\frac{3}{8}$ (e) $1\frac{9}{10}$ (f) $\frac{3}{4}$

Page 26 Fraction subtract



Page 27 Fraction spaceships

- (a) $1\frac{1}{2}$ (b) $1\frac{5}{6}$
 (c) $5\frac{1}{2}$ (d) $15\frac{1}{10}$ or $1\frac{1}{2}$
 (e) $19\frac{3}{8}$ or $2\frac{3}{8}$ (f) $4\frac{5}{6}$
 (g) $29\frac{1}{10}$ or $2\frac{3}{5}$ (h) $19\frac{1}{10}$

Page 28 Adding fractions

1. (a) $\frac{5}{4}$ and $1\frac{1}{4}$ (b) $\frac{6}{4}$ and $1\frac{3}{4}$ or $1\frac{1}{2}$
 (c) $\frac{4}{3}$ and $1\frac{1}{3}$ (d) $\frac{5}{4}$ and $1\frac{1}{4}$
 (e) $\frac{6}{5}$ and $1\frac{1}{5}$ (f) $\frac{8}{7}$ and $1\frac{1}{7}$
 (g) $\frac{9}{8}$ and $1\frac{1}{8}$ (h) $13\frac{1}{10}$ and $13\frac{3}{10}$
 (i) $\frac{7}{4}$ and $1\frac{3}{4}$ (j) $\frac{7}{5}$ and $1\frac{2}{5}$
 (k) $20\frac{1}{16}$ and $1\frac{1}{16}$ or $1\frac{1}{4}$ (l) $17\frac{1}{13}$ and $14\frac{1}{13}$
 (m) $20\frac{1}{4}$ and $19\frac{1}{4}$ or $13\frac{3}{4}$ (n) $27\frac{1}{5}$ and $11\frac{2}{5}$ or $14\frac{2}{5}$
2. (a) $\frac{8}{6}$ or $1\frac{2}{3}$ or $1\frac{1}{3}$ (b) $\frac{5}{6}$
 (c) $\frac{9}{6}$ or $1\frac{3}{6}$ or $1\frac{1}{2}$ (d) $\frac{8}{10}$ or $\frac{4}{5}$
 (e) $\frac{10}{10}$ or 1 (f) $\frac{17}{10}$ or $1\frac{7}{10}$
 (g) $\frac{10}{8}$ or $1\frac{2}{8}$ or $1\frac{1}{4}$ (h) $\frac{5}{8}$
 (i) $\frac{7}{8}$ (j) $\frac{5}{12}$
 (k) $\frac{7}{12}$ (l) $\frac{7}{12}$
 (m) $13\frac{1}{5}$ (n) $11\frac{1}{10}$ or $1\frac{1}{10}$
 (o) $22\frac{2}{30}$ or $11\frac{1}{15}$ (p) $13\frac{1}{12}$ or $1\frac{1}{12}$
 (q) $14\frac{1}{12}$ or $1\frac{2}{12}$ or $1\frac{1}{6}$ (r) $13\frac{1}{16}$
 (s) $17\frac{1}{12}$ or $1\frac{5}{12}$ (t) $\frac{6}{16}$ or $\frac{3}{8}$

F&D – 3

Page 29 Expensive name plates

Malachite	Amazonite	Alexandrite
vowels \$22.00	vowels \$27.50	vowels \$27.50
consonants \$37.50	consonants \$30.00	consonants \$45.00
cost of word \$59.50	cost of word \$57.50	cost of word \$72.50

Morganite
vowels \$22.00
consonants \$37.50
cost of word \$59.50

Melanite
vowels \$22.00
consonants \$30.00
cost of word \$52.00

Andalusite
vowels \$27.50
consonants \$37.50
cost of word \$65.00

Moldavite
vowels \$22.00
consonants \$37.50
cost of word \$59.50

Nuumite
vowels \$22.00
consonants \$22.50
cost of word \$44.50

Amber
vowels \$11.00
consonants \$22.50
cost of word \$33.50

Aquamarine
vowels \$33.00
consonants \$30.00
cost of word \$63.00

Moonstone
vowels \$22.00
consonants \$37.50
cost of word \$59.50

Bloodstone
vowels \$22.00
consonants \$45.00
cost of word \$67.00

Axinite
vowels \$22.00
consonants \$22.50
cost of word \$42.50

Beryl
vowels \$5.50
consonants \$30.00
cost of word \$35.50

Orthoclase
vowels \$22.00
consonants \$45.00
cost of word \$67.00

Page 30 Almost 1 but not quite!

- | | |
|---|--|
| $\frac{5}{7}$ of 49 is 35
because $\frac{1}{7}$ of 49 = 7 | $\frac{3}{4}$ of 44 is 33
because $\frac{1}{4}$ of 44 = 11 |
| $\frac{7}{8}$ of 32 is 28
because $\frac{1}{8}$ of 32 = 4 | $\frac{7}{9}$ of 63 is 49
because $\frac{1}{9}$ of 63 = 7 |
| $\frac{2}{3}$ of 18 is 12
because $\frac{1}{3}$ of 18 = 6 | $\frac{5}{8}$ of 64 is 40
because $\frac{1}{8}$ of 64 = 8 |
| $\frac{3}{4}$ of 36 is 27
because $\frac{1}{4}$ of 36 = 9 | $\frac{7}{9}$ of 99 is 77
because $\frac{1}{9}$ of 99 = 11 |
| $\frac{2}{3}$ of 45 is 30
because $\frac{1}{3}$ of 45 = 15 | $\frac{6}{7}$ of 21 is 18
because $\frac{1}{7}$ of 21 = 3 |
| $\frac{3}{4}$ of 60 is 45
because $\frac{1}{4}$ of 60 = 15 | $\frac{5}{7}$ of 35 is 25
because $\frac{1}{7}$ of 35 = 5 |
| $\frac{2}{3}$ of 39 is 26
because $\frac{1}{3}$ of 39 = 13 | $\frac{4}{5}$ of 125 is 100
because $\frac{1}{5}$ of 125 = 25 |
| $\frac{3}{4}$ of 56 is 42
because $\frac{1}{4}$ of 56 = 14 | $\frac{6}{7}$ of 72 is 54
because $\frac{1}{7}$ of 72 = 9 |
| $\frac{4}{9}$ of 81 is 36
because $\frac{1}{9}$ of 81 = 9 | $\frac{8}{9}$ of 96 is 72
because $\frac{1}{9}$ of 96 = 12 |
| $\frac{6}{8}$ of 48 is 36
because $\frac{1}{8}$ of 48 = 6 | $\frac{5}{7}$ of 84 is 60
because $\frac{1}{7}$ of 84 = 12 |
| $\frac{3}{5}$ of 50 is 30
because $\frac{1}{5}$ of 50 = 10 | $\frac{5}{6}$ of 36 is 30
because $\frac{1}{6}$ of 36 = 6 |

Page 31 And so that leads to this!

- | | |
|----------------------------|-------------------------------|
| $\frac{1}{3}$ of 24 = 8 | so $\frac{2}{3}$ of 24 = 16 |
| $\frac{1}{5}$ of 35 = 7 | so $\frac{3}{5}$ of 35 = 21 |
| $\frac{1}{4}$ of 48 = 12 | so $\frac{3}{4}$ of 48 = 36 |
| $\frac{1}{6}$ of 42 = 7 | so $\frac{4}{6}$ of 42 = 28 |
| $\frac{1}{8}$ of 56 = 7 | so $\frac{3}{8}$ of 56 = 21 |
| $\frac{1}{9}$ of 27 = 3 | so $\frac{5}{9}$ of 27 = 15 |
| $\frac{1}{3}$ of 51 = 17 | so $\frac{2}{3}$ of 51 = 34 |
| $\frac{1}{5}$ of 60 = 12 | so $\frac{4}{5}$ of 60 = 48 |
| $\frac{1}{4}$ of 76 = 19 | so $\frac{3}{4}$ of 76 = 57 |
| $\frac{1}{6}$ of 84 = 14 | so $\frac{4}{6}$ of 84 = 56 |
| $\frac{1}{8}$ of 48 = 6 | so $\frac{5}{8}$ of 48 = 30 |
| $\frac{1}{9}$ of 63 = 7 | so $\frac{4}{9}$ of 63 = 28 |
| $\frac{1}{10}$ of 120 = 12 | so $\frac{5}{10}$ of 120 = 60 |
| $\frac{1}{12}$ of 72 = 6 | so $\frac{3}{12}$ of 72 = 18 |
| $\frac{1}{3}$ of 96 = 32 | so $\frac{2}{3}$ of 96 = 64 |
| $\frac{1}{5}$ of 85 = 17 | so $\frac{4}{5}$ of 85 = 68 |

- $\frac{1}{4}$ of 92 = 23 so $\frac{3}{4}$ of 92 = 69
 $\frac{1}{6}$ of 126 = 21 so $\frac{5}{6}$ of 126 = 105
 $\frac{1}{8}$ of 248 = 31 so $\frac{6}{8}$ of 248 = 186
 $\frac{1}{9}$ of 117 = 13 so $\frac{4}{9}$ of 117 = 52
 $\frac{1}{10}$ of 340 = 34 so $\frac{7}{10}$ of 340 = 238
 $\frac{1}{12}$ of 132 = 12 so $\frac{7}{12}$ of 132 = 84
 $\frac{1}{3}$ of 135 = 45 so $\frac{2}{3}$ of 135 = 90
 $\frac{1}{4}$ of 168 = 42 so $\frac{3}{4}$ of 168 = 126
 $\frac{1}{5}$ of 175 = 35 so $\frac{3}{5}$ of 175 = 105
 $\frac{1}{6}$ of 102 = 17 so $\frac{4}{6}$ of 102 = 68
 $\frac{1}{7}$ of 154 = 22 so $\frac{3}{7}$ of 154 = 66
 $\frac{1}{8}$ of 168 = 21 so $\frac{5}{8}$ of 168 = 105

Page 32 That much cash

1. (a) \$24 (n) \$52
 (b) \$18 (o) \$21
 (c) \$6 (p) \$7
 (d) \$13 (q) \$33
 (e) \$32 (r) \$14
 (f) \$16 (s) \$20
 (g) \$3 (t) \$8
 (h) \$80 (u) \$48
 (i) \$39 (v) \$15
 (j) \$31 (w) \$9
 (k) \$45 (x) \$26
 (l) \$54 (y) \$4
 (m) \$28 (z) \$22

2.

8	80	32
T	H	E

33	48	39	6	45
Q	U	I	C	K

18	14	21	9	52
B	R	O	W	N

16	21	26
F	O	X

31	48	28	7	20
J	U	M	P	S

21	15	32	14
O	V	E	R

8	80	32
T	H	E

54	24	22	4
L	A	Z	Y

13	21	3
D	O	G

Page 33 Cash pigs

- $\frac{1}{3}$ of \$81 = \$27 $\frac{4}{5}$ of \$415 = \$332
 $\frac{3}{5}$ of \$85 = \$51 $\frac{4}{9}$ of \$693 = \$308
 $\frac{2}{7}$ of \$147 = \$42 $\frac{2}{6}$ of \$408 = \$136
 $\frac{2}{6}$ of \$114 = \$38 $\frac{2}{5}$ of \$390 = \$156
 $\frac{1}{3}$ of \$351 = \$117 $\frac{5}{7}$ of \$812 = \$580
 $\frac{3}{5}$ of \$195 = \$117 $\frac{2}{3}$ of \$363 = \$242
 $\frac{6}{7}$ of \$154 = \$132 $\frac{7}{8}$ of \$96 = \$84

Page 34 Fun for fruit pickers – 1

Team A	Aaron 169	Ben 507	Callum 676
Team B	Annie 299	Grace 897	Maddie 1495
Team C	Emma 319	Bea 1276	Danni 638
Team D	Ned 213	James 639	Jensen 426
Team E	Luke 261	Bridget 783	Lola 1305
Team F	Kyle 476	Libby 238	Tommy 952
Team G	Dash 199	Leo 398	Carter 796
Team H	Claudia 406	Zung 1218	Eli 812
Team I	Carl 638	Jack 957	Louis 957
Team J	Kate 342	Fiona 1026	Eliza 648
Team K	Ana 622	Lily 311	Sacha 1244
Team L	Annika 494	Mia 988	Charli 741

Page 35 Fun for fruit pickers – 2

Position	Name	Fraction equation of group	Pieces picked
1st	Maddie	$\frac{5}{9}$	1495
2nd	Lola	$\frac{5}{9}$	1305
3rd	Bea	$\frac{4}{7}$	1276
4th	Sacha	$\frac{4}{7}$	1244
5th	Zung	$\frac{3}{6}$	1218
6th	Fiona	$\frac{3}{6}$	1026
7th	Mia	$\frac{4}{9}$	988
8th	Jack	$\frac{3}{8}$	957
=	Louis	$\frac{3}{8}$	957
10th	Tommy	$\frac{4}{7}$	952
11th	Grace	$\frac{3}{9}$	897
12th	Eli	$\frac{2}{6}$	812
13th	Carter	$\frac{4}{7}$	796
14th	Bridget	$\frac{3}{9}$	783
15th	Charli	$\frac{3}{9}$	741
16th	Eliza	$\frac{2}{6}$	684
17th	Callum	$\frac{4}{8}$	676
18th	James	$\frac{3}{6}$	639
19th	Danni	$\frac{2}{7}$	638
=	Carl	$\frac{2}{8}$	638
21st	Anna	$\frac{2}{7}$	622
22nd	Ben	$\frac{3}{8}$	507
23rd	Annika	$\frac{2}{9}$	494
24th	Kyle	$\frac{2}{7}$	476
25th	Jensen	$\frac{2}{6}$	426
26th	Claudia	$\frac{1}{6}$	406
27th	Leo	$\frac{2}{7}$	398
28th	Kate	$\frac{1}{6}$	342
29th	Emma	$\frac{1}{7}$	319
30th	Lily	$\frac{1}{7}$	311
31st	Annie	$\frac{1}{9}$	299
32nd	Luke	$\frac{1}{9}$	261
33rd	Libby	$\frac{1}{7}$	238
34th	Ned	$\frac{1}{6}$	213
35th	Dash	$\frac{1}{7}$	199
36th	Aaron	$\frac{1}{8}$	169

F&D – 4

Page 36 That's a reasonable throw!

Teacher check estimates and differences

Muscles Maria	Pectoral Petra	Bicep Betty
Actual total 42.35 m	Actual total 44.79 m	Actual total 50.29 m
Placing 11th	Placing 10th	Placing 7th
Abs Allan	Core Colin	Quad Quentin
Actual total 38.57 m	Actual total 59.72 m	Actual total 56.35 m
Placing 12th	Placing 4th	Placing 5th
Weightless Wanda	Strength Sally	Power Polly
Actual total 49.8 m	Actual total 54.54 m	Actual total 47.18 m
Placing 8th	Placing 6th	Placing 9th
Brawny Brian	Thighs Teague	Calves Callum
Actual total 73.39 m	Actual total 74.5 m	Actual total 84.86 m
Placing 3rd	Placing 2nd	Placing 1st

Page 37 Add the roll of the dice

Teacher check

Page 38 With 5 rolls

Teacher check

Page 39 With 5 rolls—your turn

Teacher check

Page 40 The fastest 800 metres ever run!

1.

Fastest	Time – min and sec	Run in seconds	Gap between the top 10
1	1:53.28	113.28	From 1 to 2: 0.15 secs
2	1:53.43	113.43	From 2 to 3: 1.01 secs
3	1:54.44	114.44	From 3 to 4: 0.37 secs
4	1:54.81	114.81	From 4 to 5: 0.04 secs
5	1:54.85	114.85	From 5 to 6: 0.02 secs
6	1:54.87	114.87	From 6 to 7: 0.07 secs
7	1:54.94	114.94	From 7 to 8: 0.11 secs
8	1:55.05	115.05	From 8 to 9: 0.14 secs
9	1:55.19	115.19	From 9 to 10: 0 secs
10	1:55.19	115.19	

2.

Fastest	Time – min and sec	Run in seconds	Gap between the top 10
1	12:16.34	736.34	From 1 to 2: 10.67 secs
2	12:27.01	747.01	From 2 to 3: 4.95 secs
3	12:31.96	751.96	From 3 to 4: 1.78 secs
4	12:33.74	753.74	From 4 to 5: 3.27 secs
5	12:37.01	757.01	From 5 to 6: 4.2 secs
6	12:41.21	761.21	From 6 to 7: 4.53 secs
7	12:45.74	765.74	From 7 to 8: 4.02 secs
8	12:49.76	769.76	From 8 to 9: 6.93 secs
9	12:56.69	776.69	From 9 to 10: 6.19 secs
10	13:02.88	782.88	

Page 41 My list is correct

1.

Tester A	Tester B	Tester C
2.4	1.1	5.8
1.7	1.2	5.7
1.3	0.9	7.6
12.4	4.8	12.3
11.2	6.7	14
16.4	11	19.2
19.1	4.1	15.3
15.2	8.6	18.9
6	5.6	11.5
11.5	0.5	11.5
Total of answers	Total of answers	Total of answers
98.2	44.5	121.8

2.

Tester A	Tester B	Tester C
2.8	3.2	6.8
4.4	2	9
2.5	3.3	4.4
6.9	7.1	7.4
1.68	2.12	7.38
2.2	3	3.7
1.9	9.4	6.5
2.84	9.22	2.59
3.82	3.82	3.78
6.42	8.58	4.91
Total of answers	Total of answers	Total of answers
35.46	51.74	56.46

Page 42 Weather pain

- Correct total for Perth = 730.3 cm
 - over by 25.5 cm
 - over by 4.2 cm
 - over by 5.9 cm
 - under by 0.6 cm
 - over by 25 cm
 - over by 3.4 cm
- Correct total for Hobart = 500.8 cm
 - over by 4.9 cm
 - under by 2.5 cm
 - correct
 - over by 7 cm
 - over by 9.5 cm
 - under by 1.3 cm
- Best was Cloud Claudia for Hobart

Page 43 Tropical rainfall

Note: All totals are the addition of the numbers in the row from January to December

Cairns	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
cm	396.3	455.3	427.7	196.5	90.2	45.5	29.3	27	33.7	46.6	93.8	180.7	2022.6
Rounded to whole number	396	455	428	197	90	46	29	27	34	47	94	181	2024
Rounded to the nearest 10	400	460	430	200	90	50	30	30	30	50	90	180	2040

Innisfail	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
cm	512.7	593.7	665.5	460.3	299.5	186.5	136.1	117.4	86.6	88.3	159.7	264.8	3571.1
Rounded to whole number	513	594	666	460	300	187	136	117	87	88	160	265	3573
Rounded to the nearest 10	510	590	670	460	300	190	140	120	90	90	160	260	3580

Page 44 Estimate these answers first

Teacher check estimations

34.67	55.67	78.01
– 23.28	– 19.65	– 45.98
11.39	36.02	32.03
79.11	133.66	116.76
– 16.89	– 39.78	– 55.99
62.22	93.88	60.77

44.167	111.392	921.017
- 17.228	- 45.165	- 82.087
26.939	66.227	838.93
176.54	235.22	98.41
- 48.97	- 117.28	- 33.17
127.57	117.94	65.24
11.467	138.07	728.01
- 3.428	- 49.112	- 345.66
8.039	88.958	382.35

F&D – 5

Page 45 Some weighty problems

	Broad Bobby	Big Ted	Tall Tom	Fiery Fred
Weight	240 kg	210 kg	180 kg	225 kg
5 years ago $\frac{2}{3}$ of their current weight	160 kg	140 kg	120 kg	150 kg
6 years ago $\frac{1}{2}$ of their current weight	120 kg	105 kg	90 kg	112.5 kg
8 years ago $\frac{1}{3}$ of their current weight	80 kg	70 kg	60 kg	75 kg
As a teenager $\frac{1}{4}$ of their current weight	60 kg	52.5 kg	45 kg	56.26 kg
As a toddler $\frac{1}{8}$ of their current weight	30 kg	26.25 kg	22.5 kg	28.13 kg
At birth $\frac{1}{100}$ of their current weight	2.4 kg	2.1 kg	1.8 kg	2.25 kg

Page 46 A big week at the pump!

1.

Day	Litres	Total	Price per litre	Ranking
Monday	63	\$97.02	\$1.54	5
Tuesday	51	\$72.42	\$1.42	1
Wednesday	59	\$86.14	\$1.46	3
Thursday	48	\$77.76	\$1.62	7
Friday	33	\$47.52	\$1.44	2
Saturday	55	\$81.95	\$1.49	4
Sunday	46	\$72.68	\$1.58	6

2.

Day	Litres	Total	Price per litre	Ranking
Monday	54	\$60.48	\$1.12	3
Tuesday	61	\$73.81	\$1.21	5
Wednesday	59	\$73.75	\$1.25	6
Thursday	48	\$52.32	\$1.09	1
Friday	65	\$74.75	\$1.15	4
Saturday	71	\$78.10	\$1.10	2
Sunday	39	\$49.14	\$1.26	7

3. Teacher check

Page 47 All ties are up!

1.

Shop	Deal	Price per tie	Profit per tie	Profit per deal
A	3 ties for \$59.40	\$19.80	\$11.05	\$33.15
B	4 ties for \$75.40	\$18.85	\$10.10	\$40.40
C	5 ties for \$101.50	\$20.30	\$11.55	\$57.75
D	6 ties for \$106.50	\$17.75	\$9.00	\$54.00
E	7 ties for \$147.70	\$21.10	\$12.35	\$86.45
F	3 ties for \$51.30	\$17.10	\$8.35	\$25.05
G	4 ties for \$74.00	\$18.50	\$9.75	\$39.00
H	5 ties for \$104.25	\$20.85	\$12.10	\$60.50
I	6 ties for \$132.60	\$22.10	\$13.35	\$80.10
J	7 ties for \$118.65	\$16.95	\$8.20	\$57.40
K	3 ties for \$55.05	\$18.35	\$9.60	\$28.80
L	4 ties for \$94	\$23.50	\$14.75	\$59.00
M	5 ties for \$88	\$17.60	\$8.85	\$44.25
N	6 ties for \$125.40	\$20.90	\$12.15	\$72.90
O	7 ties for \$122.15	\$17.45	\$8.70	\$60.90

2. Best deals — J, F and O

Page 48 Buy in bulk ... or not?

Big Red Raspberry	Lemonade Leader	Cola King	Green Dream	The Orange Oracle
6 for \$4.32 1 can @	6 for \$3.96 1 can @	6 for \$4.38 1 can @	6 for \$4.86 1 can @	6 for \$3.48 1 can @
72c	66c	73c	81c	58c
12 for \$9.00 1 can @	12 for \$7.32 1 can @	12 for \$8.16 1 can @	12 for \$8.52 1 can @	12 for \$6.84 1 can @
75c	61c	68c	71c	57c
18 for \$13.32 1 can @	18 for \$11.16 1 can @	18 for \$11.34 1 can @	18 for \$10.98 1 can @	18 for \$10.08 1 can @
74c	62c	63c	61c	56c

1. The Orange Oracle 18 pack

2. Green Dream 6 pack

3–4. Teacher check

5. 6 cans = \$4.44

12 cans = \$8.88

Page 49 Let's try a simpler problem—multiplication

Teacher check

F&D – 6

Page 50 The great powers of 10 search

green = 10^1 , 10×1 , 10, ten

orange = 10^2 , 10×10 , 100, hundred

red = 10^3 , $10 \times 10 \times 10$, 1000, one thousand

yellow = 10^4 , $10 \times 10 \times 10 \times 10$, 10 000, ten thousand

light blue = $10 \times 10 \times 10 \times 10 \times 10$, 100 000, hundred thousand

Page 51 Divide and multiply decimals

1. (a) 14.3 (k) 16.1
 (b) 272 (l) 818
 (c) 447 (m) 661
 (d) 3.65 (n) 1.66
 (e) 45.9 (o) 66.9
 (f) 370 (p) 110
 (g) 49 (q) 69
 (h) 870 (r) 810
 (i) 5230 (s) 6810
 (j) 2045 (t) 7113

Page 51 *Divide and multiply decimals (continued)*

2. (a) 0.34 (k) 0.97
 (b) 0.0456 (l) 0.0755
 (c) 0.129 (m) 0.177
 (d) 0.189 (n) 0.197
 (e) 0.0308 (o) 0.0909
 (f) 2.318 (p) 7.919
 (g) 0.5427 (q) 0.5777
 (h) 0.228 (r) 0.779
 (i) 0.08801 (s) 0.09901
 (j) 28.12 (t) 79.17
3. (a) 2 009 500 (d) 0.6782
 (b) 33.67 (e) 3124
 (c) 1109.1

F&D – 7

Page 52 *The first 100 letters*

Teacher check

Page 53 *I see a flag! – 1*

Teacher check

Page 54 *I see a flag! – 2*

Teacher check

Page 55 *The Aussie cricket team—new colours are needed!*

Teacher check

Page 56 *Your own backyard!*

Teacher check

Page 57 *How creative r u?*

Teacher check

Page 58 *Artistic maths*

1. Teacher check
2. orange — 22%, 0.22, $\frac{11}{50}$
 purple — 0.1, 10%, $\frac{1}{10}$
 light blue — $\frac{11}{25}$, 44%, 0.44
 pink — 9%, 0.09, $\frac{9}{100}$
 white — 0.07, 7%, $\frac{7}{100}$
 black — $\frac{8}{100}$, 8%, 0.08

Page 59 *The Kites—the newest team in Australian Football*

Teacher check

M&FM – 1

Page 60 *Too expensive for me!*

	Cash discount	'New' price
Car 1	\$10 500	\$94 500
Car 2	\$9600	\$86 400
Car 3	\$27 500	\$82 500
Car 4	\$74 000	\$74 000
Car 5	\$34 000	\$102 000
Car 6	\$79 450	\$79 450
Car 7	\$9870	\$88 830
Car 8	\$31 450	\$94 350
Car 9	\$77 800	\$77 800

Page 61 *The wash up is—my new price is!*

\$750 25% off New price: \$562.50	\$660 33% off New price: \$442.20	\$710 10% off New price: \$639
\$690 10% off New price: \$621	\$700 15% off New price: \$595	\$650 5% off New price: \$617.50
\$560 25% off New price: \$420	\$795 20% off New price: \$636	\$820 25% off New price: \$615
\$600 20% off New price: \$480	\$585 10% off New price: \$526.50	\$1000 15% off New price: \$850
	\$720 15% off New price: \$612	

Page 62 *The biggest-ever shirt sale*

Brand A	Brand B	Brand C	Brand D	Brand E	Brand F
\$28	\$36	\$44	\$50	\$32	\$45
Discount: \$7	Discount: \$9	Discount: \$11	Discount: \$12.50	Discount: \$8	Discount: \$11.25
Sale price: \$21	Sale price: \$27	Sale price: \$33	Sale price: \$37.50	Sale price: \$24	Sale price: \$33.75

1. (a) \$174 (b) \$58
 2. (a) \$192 (b) \$64
 3. 4 x Brand B or 1 x Brand B, 1 x Brand C, 2 x Brand E
 4. 4 x Brand A and 1 x Brand B
 5. 4 x Brand A, 1 x Brand B and 1 x Brand E
 6. 1 x Brand C, 1 x Brand D and 1 x Brand F
 7. Brand A new price: **\$10.50**
 Brand B new price: **\$13.50**
 Brand C new price: **\$16.50**
 Brand D new price: **\$18.75**
 Brand E new price: **\$12.00**
 Brand F new price: **\$16.88**

Page 63 *CD-R bargain basement*

CD-R disc deal	Price per disc	Ranking in value
5 pack for \$6.49	\$1.30	13
10 pack for \$8.99	90c	10
10 pack for \$3.99	40c	= 3
50 pack for \$19.99	40c	= 3
25 pack for \$18.49	74c	9
20 pack for \$14.53	73c	8
10 pack for \$4.99	50c	5
30 pack for \$19.99	67c	7
10 pack for \$10.99	\$1.10	12
100 pack for \$28.99	29c	1
50 pack for \$16.49	33c	2
20 pack for \$20.99	\$1.05	11
25 pack for \$12.99	52c	6

2.

CD-R disc deal	Saving	New price
10% off 5 pack for \$6.49	65c	\$5.84
10% off 10 pack for \$8.99	90c	\$8.09
10% off 10 pack for \$3.99	40c	\$3.59
10% off 50 pack for \$19.99	\$2	\$17.99
10% off 25 pack for \$18.49	\$1.85	\$16.64
10% off 20 pack for \$14.53	\$1.45	\$13.08
10% off 10 pack for \$4.99	50c	\$4.49
10% off 30 pack for \$19.99	\$2	\$17.99
10% off 10 pack for \$10.99	\$1.10	\$9.89
10% off 100 pack for \$28.99	\$2.90	\$26.09
10% off 50 pack for \$16.49	\$1.65	\$14.84
10% off 20 pack for \$20.99	\$2.10	\$18.89
10% off 25 pack for \$12.99	\$1.30	\$11.69

Page 64 A meal at any price!

1.

Diners	Discount offered	Their cash discount	What they actually paid	Ranking in \$ saved
The Abbots	10% off \$125	\$12.50	\$112.50	9
The Browns	25% off \$612	\$153	\$459	3
The Cuzzepes	50% off \$678	\$339	\$339	1
The Dusuns	10% off \$198	\$19.80	\$178.20	8
The Edens	25% off \$520	\$130	\$390	4
The Fazios	50% off \$406	\$203	\$203	2
The Gardas	10% off \$367	\$36.70	\$330.30	7
The Homes	25% off \$416	\$104	\$312	6
The Ionas	50% off \$234	\$117	\$117	5

2.

	Friday – 10%		Saturday – 25%		Sunday – 50%	
	Price	Saving	Price	Saving	Price	Saving
Table 1	\$123	\$12.30	\$64.40	\$16.10	\$239	\$119.50
Table 2	\$199	\$19.90	\$154	\$38.50	\$166	\$83
Table 3	\$78	\$7.80	\$112	\$28	\$229	\$114.50
Table 4	\$212	\$21.20	\$182	\$45.50	\$80.90	\$40.45
Table 5	\$306	\$30.60	\$228	\$57	\$91.80	\$45.90
Table 6	\$187	\$18.70	\$113	\$28.25	\$176.30	\$88.15
Table 7	\$208	\$20.80	\$89.80	\$22.45	\$144.60	\$72.30
Table 8	\$117	\$11.70	\$132	\$33	\$161	\$80.50
Table 9	\$96.80	\$9.68	\$178	\$44.50	\$208	\$104
Table 10	\$133	\$13.30	\$216	\$54	\$127	\$63.50
Totals	\$1659.80	\$165.98	\$1469.20	\$367.30	\$1623.60	\$811.80

3. \$278.20

Page 65 The best salesman—could be a close shave!

	Trusting Ted	Saver Sean	Cheaper Charlie
Deal 1	Discount: \$110	Discount: \$322.50	Discount: \$805
	New price: \$990	New price: \$967.50	New price: \$805
Deal 2	Discount: \$300	Discount: \$135	Discount: \$910
	New price: \$900	New price: \$1215	New price: \$910
Deal 3	Discount: \$370	Discount: \$785	Discount: \$111
	New price: \$1110	New price: \$785	New price: \$999
Deal 4	Discount: \$965	Discount: \$133	Discount: \$320
	New price: \$965	New price: \$1197	New price: \$960

Three best deals: Saver Sean – Deal 3
Cheaper Charlie – Deal 1
Trusting Ted – Deal 2

Most expensive deals: Saver Sean – Deal 2
Saver Sean – Deal 4
Trusting Ted – Deal 3

Page 66 A big sale or what?

- (a) \$989 (b) \$1187 (c) \$1780
- (a) \$1156 (b) \$1387 (c) \$2080
- (a) \$1089 (b) \$1307 (c) \$1960
- (a) \$1244 (b) \$1493 (c) \$2240
- (a) \$861 (b) \$1033 (c) \$1550
- Teacher check

P&A – 1

Page 67 The super sided shapes

1.

Pentagons	Hexagons	Octagons	Decagons	Total sides
1	2	3	4	81
2	3	4	5	110
3	4	5	6	139
2	2	2	2	58
3	6	7	1	117
5	2	3	6	121
2	1	5	0	56
7	2	4	4	119
2	10	2	3	116
5	3	6	2	111
5	0	6	3	103
3	4	2	3	65

2.

Pentagons	Hexagons	Octagons	Decagons	Total sides
4	2	1	1	50
5	2	3	4	101
3	3	6	6	141
1	1	4	1	53
1	2	3	1	51
6	5	4	5	142
4	4	3	3	98
2	2	5	6	122
5	6	8	0	125
3	5	4	6	137

Page 68 Solve and extend the rules

Teacher check extension of rules

Rule: $x + 4 + 2$ Rule: $x + 3$ Rule: $x + 5 + 1$
 Rule: $x + 5 - 1$ Rule: $x + 7$ Rule: $x + 8 + 2$
 Rule: $x + 6 - 5$ Rule: $x + 3 + 3$ Rule: $x + 9 - 2$

Teacher check

Page 69 Algebra Moonlander

$a = 2$							
$a \times a$	$a \times a + 3$	$5a$	$3a + 2$	$a + a$	$a + a + a$	$3a + 4$	$4a + 3a$
4	7	10	8	4	6	10	14

Page 69 Algebra Moonlander (continued)

$a = 5$							
$a \times a$	$a \times a - 6$	$7a$	$3a + 7$	$a + a$	$a + a + a$	$3a + 9$	$4a + 5a$
25	19	35	22	10	15	24	45

$a = 10$							
$a \times a$	$a \times a + 7$	$5a$	$3a + 2$	$a + a$	$a + a + a$	$3a - 4$	$4a + 2a$
100	107	50	32	20	30	26	60

Page 70 Make a sequence

Teacher check

Page 71 The rule and next few, please

The pattern	Pattern rule
360, 330, 270, 210, 180, 120, 60, 30, -30	-30, -60, -60
40, 80, 160, 280, 320, 400, 520, 560	+40, +80, +120
-16, -12, -8, -4, 0, 4, 8	+4
121, 132, 124, 135, 127, 138, 130, 141	+11, -8
66, 67, 70, 75, 82, 83, 86, 91, 98	+1, +3, +5, +7
$\frac{2}{3}, 1\frac{1}{3}, 2, 2\frac{2}{3}, 3\frac{1}{3}, 4, 4\frac{2}{3}, 5\frac{1}{3}$	$+\frac{2}{3}$
$1\frac{1}{2}, 3, 4\frac{1}{2}, 6, 7\frac{1}{2}, 9, 10\frac{1}{2}$	$+1\frac{1}{2}$
$16\frac{1}{4}, 17, 18, 18\frac{3}{4}, 19\frac{3}{4}, 20\frac{1}{2}, 21\frac{1}{2}, 22\frac{1}{4}$	$+\frac{3}{4}, +1$
-45, -40, -30, -25, -15, -10, 0, 5	+5, +10
$9\frac{1}{2}, 11, 13, 14\frac{1}{2}, 16\frac{1}{2}, 18, 20, 21\frac{1}{2}$	$+1\frac{1}{2}, +2$
511, 502, 493, 484, 475, 466, 457	-9
-17, -15, -12, -8, -6, -3, 1, 3	+2, +3, +4
$\frac{3}{4}, 1\frac{1}{2}, 2\frac{1}{4}, 3, 3\frac{3}{4}, 4\frac{1}{2}, 5\frac{1}{4}$	$+\frac{3}{4}$

The pattern	Pattern rule
1.01, 1.12, 1.23, 1.34, 1.45, 1.56, 1.67	+0.11
23.6, 24.8, 26, 27.2, 28.4, 29.6, 30.8	+1.2
49.99, 49.9, 48.9, 48.81, 47.81, 47.72, 46.72	-0.09, -1
34.5, 36, 36.6, 37.1, 38.6, 39.2, 39.7, 41.2	+1.5, +0.6, +0.5
166.6, 177.7, 188.8, 199.9, 211, 222.1, 233.2	+11.1
401.1, 399.7, 399.3, 398.9, 398.5, 398.1, 397.7	-0.4
111.01, 111.07, 111.13, 111.19, 111.25, 111.31	+0.06
44.04, 44.13, 44.22, 44.31, 44.4, 44.49, 44.59	+0.09
7.07, 7.20, 7.33, 7.46, 7.59, 7.72, 7.85	+0.13
65.09, 64.08, 63.07, 62.06, 61.05, 60.04, 59.03	-1.01
176.5, 177.1, 177.7, 178.3, 178.9, 179.5, 180.1	+0.6
987.1, 986.3, 985.6, 984.8, 984.1, 983.3, 982.6	-0.8, -0.7
99.1, 98.8, 98.5, 98.2, 97.9, 97.6, 97.3	-0.3

Page 72 Rules and more rules

- 33, 32, 38, 37, 43, 42, 48, 47, 53
- 60, 57, 68, 65, 76, 73, 84, 81, 92
- 113, 118, 111, 116, 109, 114, 107, 112, 105
- 116, 107, 113, 104, 110, 101, 107, 98, 104
- 143, 136, 150, 143, 157, 150, 164, 157, 171
- 88, 99, 94, 105, 100, 111, 106, 117, 112
- 252, 257, 266, 271, 280, 285, 294, 299, 308

- 88, 84, 97, 93, 106, 102, 115, 111, 124
- 211, 206, 213, 208, 215, 210, 217, 212, 219
- 44, 54, 108, 118, 236, 246, 492, 502, 1004
- 104, 100, 111, 107, 118, 114, 125, 121, 132

Page 73 Three-symbol nightmare!

- | | | |
|-------------------------|--------------------------|--------------------------|
| 1. = 9
= 5
= 11 | 2. = 4
= 1½
= 9 | 3. = 3½
= ½
= 10 |
| 4. = 20
= 11
= 6 | 5. = 17
= 5
= 19 | 6. = 22
= 13
= 29 |
| 7. = 7
= 1
= 10 | 8. = 11
= 3½
= 4 | 9. = 48
= 7
= 2 |
| 10. = 29
= 6
= 3 | 11. = 25
= 5½
= 7 | 12. = 51
= 13
= 9 |

Page 74 Can you repeat my pattern?

- | | |
|-----------------------------------|-----------------------------------|
| 6, 10, 7, 11, 5 | 219.5, 213.5, 208.5, 204.5, 201.5 |
| 2.5, 3.3, 3.7, 4.5, 4.9 | 45.6, 46.4, 47.3, 48.1, 49 |
| 44.4, 43.9, 43.3, 42.6, 42.1 | 73.1, 74.2, 75.3, 76.4, 77.5 |
| 121.6, 122.8, 124, 125.2, 126.4 | 56, 59, 57, 60, 54 |
| 77.5, 77.6, 77.9, 77.4, 77.5 | 11.9, 12.4, 13, 13.7, 14.5 |
| 277, 279, 281, 283, 285 | 200.8, 199.7, 198.6, 197.5, 196.4 |
| 118, 151, 85, 89, 87 | 71.5, 73, 74.5, 76, 77.5 |
| 122, 125, 119, 123, 121 | 313, 311, 316, 320, 324 |
| 101.2, 101.8, 102.3, 102.5, 103.1 | 616, 627, 636, 643, 648 |
| 56, 59, 67, 71, 79 | 44, 55, 64, 71, 82 |
| 112, 105, 102, 95, 92 | 63, 73, 82, 89, 99 |

P&A - 2

Page 75 The suns and stars come out to play

- | | | | | | | | | | | | | | | | | | |
|------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|------------|--------------|--------------|--------------|--------------|
| = 5
= 7 | = 14
= 17 | = 9
= 14 | = 46
= 48 | = 50
= 51 | = 12
= 36 | = 21
= 23 | = 36
= 36 | = 36
= 84 | = 32
= 51 | = 13
= 50 | = 17
= 33 | = 3
= 19 | = 5
= 7 | = 16
= 23 | = 20
= 27 | = 11
= 18 | = 12
= 25 |
|------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|------------|--------------|--------------|--------------|--------------|

Page 76 Order of calculations

1. (a) $22 - 9 + 3 = 16$ (b) $9 - 7 + 14 = 16$
- (c) $44 - 32 + 5 = 17$ (d) $21 - 13 + 3 = 11$
- (e) $15 - 14 + 6 = 7$ (f) $23 + 7 + 10 - 9 = 31$
- (g) $19 + 12 - 7 - 4 = 20$ (h) $6 \times 4 + 11 = 35$
- (i) $28 \div 7 + 12 = 16$ (j) $5 \times 5 + 13 = 38$
- (k) $9 \times 7 + 8 = 71$ (l) $6 \times 3 + 12 = 30$

Page 77 One of these must be correct!

- | | |
|-------------------------------------|------------------------------------|
| $24 \div (3 + 1) = 6$ | $32 \div (4 + 4) = 4$ |
| $49 \div (11 - 4) = 7$ | $12 \div (3 \times 4) = 1$ |
| $25 \div (3 + 2) = 5$ | $9 + (3 \times 6) = 27$ |
| $72 - (5 \times 6) = 42$ | $28 \div (7 - 3) = 7$ |
| $(15 - 4) \times (3 \times 3) = 99$ | $(8 - 5) \times (5 \times 5) = 75$ |
| $(10 - 4) \times (4 \times 3) = 72$ | $34 - (7 \times 4) = 6$ |
| $21 - (4 \times 4) = 5$ | $54 - 8 + 11 + 6 = 63$ |

Page 78 Just pick the right answer

Equation

$6 + (7 \times 2) =$	<input type="radio"/> 26	<input type="radio"/> 12	<input type="radio"/> 22	<input checked="" type="radio"/> 20
$36 \div (18 - 16) =$	<input type="radio"/> 14	<input checked="" type="radio"/> 18	<input type="radio"/> 16	<input type="radio"/> 12
$54 - (7 \times 3) =$	<input type="radio"/> 141	<input checked="" type="radio"/> 33	<input type="radio"/> 21	<input type="radio"/> 44
$57 - 6 + 11 + 12 =$	<input type="radio"/> 52	<input type="radio"/> 72	<input type="radio"/> 28	<input checked="" type="radio"/> 74
$49 + (4 \times 4) - 9 =$	<input type="radio"/> 46	<input type="radio"/> 40	<input type="radio"/> 65	<input checked="" type="radio"/> 56
$101 - (7 \times 5) + 11 =$	<input type="radio"/> 55	<input type="radio"/> 66	<input checked="" type="radio"/> 77	<input type="radio"/> 76
$72 - (8 \times 4) - 22 =$	<input type="radio"/> 32	<input type="radio"/> 22	<input checked="" type="radio"/> 18	<input type="radio"/> 62
$45 + 7 + (3 \times 6) =$	<input type="radio"/> 28	<input type="radio"/> 15	<input type="radio"/> 75	<input checked="" type="radio"/> 70
$81 - 11 + (7 \times 2) =$	<input type="radio"/> 65	<input type="radio"/> 56	<input checked="" type="radio"/> 84	<input type="radio"/> 80
$64 \div 8 + 10 - (3 \times 2) =$	<input type="radio"/> 18	<input type="radio"/> 16	<input type="radio"/> 6	<input checked="" type="radio"/> 12
$63 - 9 + (5 \times 5) =$	<input type="radio"/> 5	<input type="radio"/> 65	<input checked="" type="radio"/> 79	<input type="radio"/> 40
$54 \div (3 \times 3) - 2 =$	<input checked="" type="radio"/> 4	<input type="radio"/> 14	<input type="radio"/> $7\frac{1}{2}$	<input type="radio"/> 3
$22 - 4 + 6 + 7 =$	<input type="radio"/> 7	<input type="radio"/> 5	<input checked="" type="radio"/> 31	<input type="radio"/> 19

1. Incorrect
2. Incorrect
3. Incorrect

Teacher check working

Page 79 If the answer is, then ...

= 12	= 34	= 10	= 6
= 4	= 22	= 9	= 4
= 12	= 12	= 16	= 26
= 4	= 3	= 13	= 25
= 26	= 3	= 13	= 12
= 18	= 18	= 3	= 5
= 87	= 39	= 12	= 13
= 71	= 27	= 12	= 4

Create your own – Teacher check

Page 80 One is right, one is wrong, two are silly

$32 + 18 \div 3 - 7 =$	6.1	6.3	30	<input checked="" type="radio"/> 31
$19 - 12 \div 6 \times 3 =$	126	<input checked="" type="radio"/> 13	14	122
$(45 - 11) + (32 \div 4) =$	$15\frac{1}{4}$	16	<input checked="" type="radio"/> 42	44
$211 - (2 \times 12) + 50 =$	137	<input checked="" type="radio"/> 237	136	234
$(17 + 3) \div (24 \div 6) =$	49	50	4	<input checked="" type="radio"/> 5
$20 - 2 \times 8 =$	<input checked="" type="radio"/> 4	126	5	120
$58 - 3 \times 7 - (30 \div 3) =$	<input checked="" type="radio"/> 27	716	28	$718\frac{1}{3}$
$112 + (16 \div 4) - 9 =$	106	<input checked="" type="radio"/> 107	23	34
$96 - 6 \times 6 =$	504	540	<input checked="" type="radio"/> 60	58
$(64 \div 8) + (17 \times 4) - 6 =$	-9	<input checked="" type="radio"/> 70	68	-5

2. (a) $(4 \times 4) + 9 - 5 = 20$
- (b) $(3 \times 7) + 8 - 2 = 27$
- (c) $(5 \times 9) + 11 - 6 = 50$
- (d) $(2 \times 5) + 30 - 6 = 34$
- (e) $(6 \times 10) + 8 - 12 = 56$
- (f) $(6 \times 7) + 8 - 20 = 30$
- (g) $(2 \times 11) + 13 - 6 = 29$
- (h) $(3 \times 15) + 4 - 3 = 46$
- (i) $(3 \times 14) + 7 - 10 = 39$

Page 81 Making equations

1. (a) $8 + 5 - 4 = 9$
- (b) $15 \div 5 + 7 = 10$
- (c) $9 \div 3 + 2 = 5$
- (d) $5 + 6 - 4 = 7$
- (e) $9 \div 3 + 8 = 11$
- (f) $9 \times 3 + 3 = 30$
- (g) $8 \div 4 + 5 = 7$
- (h) $2 \times 6 + 5 = 17$
- (i) $15 \div 5 + 12 = 15$
- (j) $4 \times 3 + 9 = 21$
- (k) $6 \times 5 - 9 = 21$
- (l) $7 \times 7 + 8 = 57$
- (m) $18 \div 6 + 2 = 5$
- (n) $9 \times 4 + 5 = 41$

Page 82 Don't be negative about numbers!

1. -27
2. -20
3. 12
4. 20
5. -8
6. -6
7. -6
8. -12
9. 22
10. -30
11. 3