

Numeracy VPC Unit 1&2 - Coursebook

(Note: Teachers - This is draft version 2 as at July 2024. If you find any errors, or typos please let me know.)

Section 1: Numeracy Skills

1A A world of numbers 3

1. 25.6 million, 7.8b, 1.4b,
81.7, 2.7, \$1,769.80
\$1.08m, \$624,000, \$921,500
30%, 73%, 87%,
14hrs 20 min, 100^0 , 37^0

1B Numbers as pictures 4

1. 30%, 2.7, 921,500, 37^0

1C My world of numbers 5 //applied

1D Numbers at home 6 //applied

1E Numbers at work 7 //applied

1F Applied numeracy 9 //applied visual task

1G My maths toolkit 11 //applied

1H Basic calculations 12

a. 8 b. 4 c. 48 d. 80
e. \$100 f. 84 g. 1hr g. 1,550

1I Check your digits 13

1-2. a. = 30 //incorrect b. more likely about \$15 //incorrect
c. -5 is //correct d. perhaps $\$8 \times 3 = 24$ //so a bit low
e. = 380 //incorrect d. more like \$120 at \$2.20 per litre //incorrect
g. $10 + 10 = 20$ //incorrect h. $\$400 \times 26 = \$10,400$ //incorrect

1J Calculating - Addition 16

a. 15 b. 32 c. 103 d. 97
e. 52 f. 50 g. 50 h. 200
i. 22 j. 45 k. 85 l. 315
m. 53 n. 102 o. 161 p. 70
q. \$49.95 r. \$14.95 s. 9 hours t. 2 hours 45 mins
u. 110 cm v. 3 km w. 1 kg x. \$1 million

1K Applied addition 17 //applied

1L Calculating - Subtraction 20

a. 6 b. 16 c. 69 d. 80
e. 20 f. 55 g. 19 h. 12
i. 0 j. 1 k. 5 l. -10
m. 34 n. 60 o. 39 p. 15
q. \$6 r. \$2.50 s. 2 hours t. 3 hours
u. 25 cm v. 2 km w. 450 g x. \$1 million

1M Applied subtraction 21 //applied

1N Testing time 23

a. 129 b. 27 c. 127 d. 25 e. 13 f. 65 g. 50 h. 110 i. 239 j. 99 k. \$60 l. \$177.50 m. \$53 n. \$250 o. 240 minutes

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Section 2: Time and Place

2A What about time 29

units of time, timetables, diaries, duration, calendars, estimating, rosters, schedule, timesheets, organising

2B It's time 31

week; seconds; minutes;
hours; days; digital;
am; pm; analogue;
24-hour time, wage; ETA;
calendar; duration; appointment;
time zones

2C Telling the time 33

1. 6 o'clock; 12:15; 6.15;
9.40; 9 o'clock; 4 o'clock

2D 24-hour time 34

01:00 PM, 03:30 PM, 09:45 PM, 11:17 PM
07:00 AM, 03:45 AM, 11:30 AM, 08:15 PM
07:00 PM, 12:00 AM (Midnight), 12:00 PM (Noon), 12:00 AM (Midnight)

2E My daily time 35 //applied

2F Converting time 36

a. 60 minutes b. 120 minutes c. 75 minutes d. 270 minutes
e. 240 minutes f. 1,200 minutes g. 135 minutes h. 1,440 minutes
i. 2 hours j. 3 hours k. 5 1/2 hours l. 8 1/4 hours
m. 10 hours n. 16 hours o. 16.5 hours p. 1/4 hour

2G Estimating and converting 37 //applied

2H What about place 39

location, estimating, landmarks, travel and transport, digital maps, distance, planning, navigating, directions, hard copy maps

2I Preferred directions 40 //applied

2J Different ways 41 //applied mapping

2K Maps: Pathways 42

A journey is the route from point A to point B.
So you can see where you are going/or need to go!

2L Maps: Landmarks & scale 43

Places of interest, importance or prominence that can be looked for to help in navigation. These help you get your 'bearings' and are a point of reference.

With a scale the distance shown on the map corresponds with a distance in real life. e.g. 1:1000

2M Whereabouts? 44-45 //applied visual analytical task

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Section 3: Location and Planning

3A Location & planning 51 //applied

3B Compass directions 52 //applied

3C Language of location 54-55 //applied descriptive task

3D Personal space 56-57 //applied descriptive task

3E Tour guiding 58-59

1. visual/map & physical/pointing & oral/speaking
- 2-4. //applied

3F Distance and time 61

1. a. 60 km b. 9,000 km c. 5 km d. 12.5 km
- 2-4. //applied

3G Apps v maps 62 //applied

3H Travel 63 //applied analytical task

3I Distance and time II 64-65

1. 60km at 60kmh: 1 hour, 30km at 60kmh: 0.5 hours (30 minutes), 25km at 100kmh: 0.25 hours (15 minutes)
12km at 6kmh: 2 hours, 7km at 21kmh: 0.33 hours (20 minutes), 10km at 2kmh: 5 hours
- 2 + // applied

3J Calendars & diaries 67 //applied

3K To-do list 68 //applied

3L Timetables 69 //applied

3M Rosters 71

1.

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
7.00							
8.00							
9.00							
10.00							
11.00							
12.00							
13.00							
14.00							
15.00							
16.00							
17.00							
18.00							
19.00							
20.00							
21.00							
22.00							

2. Edwina F. = $8+8+8+6+6+8 = 44$ Reg G. = $4+4+4+4 = 16$ Adut N. = $8+10 = 18$

Jo P. = $4+5+5=14$ Aloysius Z. = 6 Frankie F. = 6 // Total = 104 hours

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Section 4: Money

4A A world of money 77

100, currency, billion,
wage, profit, loss,
income, expenses, debt,
\$100, 5c, budget,
\$21.38, approx \$36.80 (May '23), EFTPOS,

4B Currency 79

2. i. \$75: \$50 x 1, \$20 x 1, \$5 x 1
- ii. \$17.50: \$10 x 1, \$5 x 1, \$2 x 1, 50c x 1
- iii. \$37.85: \$20 x 1, \$10 x 1, \$5 x 1, \$2 x 1, 50c x 1, 20c x 1, 10c x 1, 5c x 1
- iv. \$41.60: \$2 x 20, \$1 x 1, 50c x 1, 10c x 1
- v. \$245: \$100 x 2, \$20 x 2, \$5 x 1
- vi. \$750.85: \$100 x 7, \$50 x 1, 50c x 1, 20c x 1, 10c x 1, 5c x 1
- vii. \$999.95: \$100 x 9, \$50 x 1, \$20 x 2, \$5 x 1, \$2 x 2, 50c x 1, 20c x 2, 5c x 1

4C Quick money calculations 81

1. a. \$1.75 b. \$15 c. \$158.99
d. \$3.85 e. \$18 f. \$4.45
g. \$4.75 h. \$800 i. \$0
j. \$1,440 k. \$37.70 l. \$24.90
2. a & b //applied c. 50 x \$2.20 (possibly) = \$110 d. \$520

4D Making change I 83

- i. Purchase of \$55. Given a \$100 note.
Change: \$45 Combination: 2 x \$20, 1 \$5
- ii. Purchase of \$7.95. Given a \$20 note.
Change: \$12.05 Combination: 1 \$10 note, 1 \$2, 2 x 50c, 1 5c
- iii. Purchase of 2 items for \$75 each. Given 2 x \$100 notes.
Change: \$50 Combination: 1 \$50
- iv. Total sales = \$73.50. Given a \$50, a \$20, and 2 x \$2.
Change: 50c Combination: 1 x 50c
- v. Purchase of 5 items @ \$3:00. Given a \$50.
Change: \$35 Combination: 1 \$20, 1 \$10, 1 \$5
- vi. Purchase of 3 x \$2.50, 2 @ \$5:00. = \$17.50 Given 2 x \$10 notes.
Change: \$2.50 Combination: 1 \$2, 1 50c
- vii. Purchase of \$50 and purchase of \$52.50. Given 5 x \$20s.
Not enough cash to pay!

4E Making change II 85

Purchase	Amount	Change	Currency
\$5.00	\$10	\$5.00	\$5
\$3.00	\$10	\$7.00	\$5 \$2
\$9.50	\$10	\$0.50	50c
\$7.50	\$10	\$2.50	\$2 50c
\$2.20	\$10	\$7.80	\$5 \$2 50c 20c 10c
\$4.80	\$10	\$5.20	\$5 20c
\$1.45	\$10	\$8.55	\$5 \$2 \$1 50c 5c
\$6.60	\$10	\$3.40	\$2 \$1 20c x2
\$0.75	\$10	\$9.25	\$5 \$2 x2 20c 5c
\$5.99	\$10	\$4.01	\$2 x2 (rounded)

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Purchase	Amount	Change	Currency
\$9.00	\$20	\$11.00	\$10 \$1
\$17.50	\$20	\$2.50	\$2 50c
\$15.00	\$20	\$5.00	\$5
\$3.75	\$20	\$16.25	\$10 \$5 \$1 20c 5c
\$19.40	\$20	\$0.60	50c 10c
\$11.55	\$20	\$8.45	\$5 \$2 \$1 20c x2 5c
\$6.95	\$20	\$13.05	\$10 \$2 \$1 5c
\$14.50	\$20	\$5.50	\$5 50c
\$7.30	\$20	\$12.70	\$10 \$2 50c 20c
\$0.95	\$20	\$19.05	\$10 \$5 \$2 x2 5c

Purchase	Amount	Change	Currency
\$11.00	\$50	\$39.00	\$20 \$10 \$5 \$2 x2
\$3.50	\$50	\$46.50	\$20 x2 \$5 \$1 50c
\$29.95	\$50	\$20.05	\$20 5c
\$48.50	\$50	\$1.50	\$1 50c
\$49.75	\$50	\$0.25	20c 5c
\$17.50	\$50	\$32.50	\$20 \$10 \$2 50c
\$22.00	\$50	\$28.00	\$20 \$5 \$2 \$1
\$0.95	\$50	\$49.05	\$20 x2 \$5 \$2 x2 5c
\$32.50	\$50	\$17.50	\$10 \$5 \$2 50c
\$15.25	\$50	\$34.75	\$20 \$10 \$2 x2 50c 20c 5c

Purchase	Amount	Change	Currency
\$65.00	\$100	\$35.00	\$20 \$10 \$5
\$28.75	\$100	\$71.25	\$50 \$20 \$1 20c 5c
\$75.50	\$100	\$24.50	\$20 \$2 x2 50c
\$92.00	\$100	\$8.00	\$5 \$2 \$1
\$82.25	\$100	\$17.75	\$10 \$5 \$2 50c 20c 5c
\$16.75	\$100	\$83.25	\$50 \$20 \$10 \$2 \$1 20c 5c
\$9.60	\$100	\$90.40	\$50 \$20 x2 20c x2
\$33.50	\$100	\$66.50	\$50 \$10 \$5 \$1 50c
\$54.15	\$100	\$45.85	\$20 x2 \$5 50c 20c 10c 5c
\$41.75	\$100	\$58.25	\$50 \$5 \$2 \$1 20c 5c

4F Rounding purchases 87

1.

Amount	Rounded amount	Money tendered	Estimated change	Estimated currency	Exact change	Exact currency
\$2.95	\$3	\$5	\$2	\$2	\$2.05	\$2 5c
\$1.25	\$1	\$5	\$4	\$2 + \$2	\$3.75	\$2 \$1 50c 20c 5c
\$9.45	\$9	\$10	\$1	\$1	\$0.55	50c 5c
\$7.80	\$8	\$10	\$2	\$2	\$2.20	\$2 20c

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\$1.95	\$2	\$10	\$8	\$5 + \$2 + \$1	\$8.05	\$5 \$2 \$1 5c
\$14.80	\$15	\$20	\$5	\$5	\$5.20	\$5 20c
\$15.10	\$16	\$20	\$4	\$2 + \$2	\$4.90	\$2 \$2 50c 20c x2
\$17.75	\$18	\$20	\$2	\$2	\$2.25	\$2 20c 5c
\$4.95	\$5	\$20	\$15	\$10 + \$5	\$15.05	\$10 \$5 5c
\$33.75	\$34	\$50	\$16	\$10 + \$5 + \$1	\$16.25	\$10 \$5 \$1 5c

2.

Calculation	Rounded amount	Money tendered	Estimated change	Estimated currency	Exact change	Exact currency
\$3.89	\$4	\$5	\$1	\$2	\$1.11	\$1 10c rounded
\$3.89	\$4	\$10	\$6	\$5 + \$1	\$6.11	\$5 \$1 10c rounded
\$8.90	\$9	\$10	\$1	\$1	\$1.10	\$1 10c
\$16.80	\$17	\$20	\$3	\$2 + \$1	\$3.20	\$2 \$1 20c
\$8.25	\$8	\$50	\$42	\$20 x2 \$2	\$41.75	\$20 x 2 \$1 50c 20c 5c
\$43.85	\$44	\$50	\$6	\$5 + \$1	\$6.15	\$5 \$1 10c 5c

4G Digital wallets 89 //applied

4H Multiplication 91

- a. 54 b. 32 c. 120 d. 42
 e. 75 f. 96 g. 143 h. 144
 i. 240 j. 10 k. 525 l. 50
 m. 1,080 n. 2,000 o. 322 p. 600 minutes or 10 hours

4I Division 93

- a. 2 b. 3 c. 15 d. 8
 e. 15 f. 20 g. 16 h. 12
 i. 15 j. 100 k. 2 l. 1.5
 m. 14 n. 10 o. 50 p. 10
 g. 5 r. 20 s. 3 hours t. 8 times

4J Fractions and decimals 95

1. //applied visual task
 2. 0.5 0.25 0.33 0.2 1.0 0.5 0.67 0.6 0.7 0.75
 2/5 1/5 1/2 1/3 9/10 2/3 1 3/4 3/5 3/2

4K Fractions and decimals II 97

1. a. \$0.50 b. \$7.50 c. \$25.00 d. \$86.25
 e. \$2.50 f. \$100 g. \$9 + \$50 = \$59.00 h. \$49.98
 2. a. 1 b. 0.75 c. 5.00 d. 3/4 e. 29 3/4 f. \$0.50 g. 3/4 h. \$24.50 i. 1.25 j. 2.5 k. 1/4

4L Comparing prices 99 //applied investigative task

4M Unit pricing 100 //applied investigative task

4N Basket of goods 101 // //applied investigative task

Totals = Coolworths: \$32.74 Boles: \$33.62 IPA: \$33.81 Baldi: \$25.30

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40 Finding patterns 102-103

1. The pattern is that each number is 2 more than the previous one.
The common difference is 2. So, the next number is \$12.

This sequence is decreasing by 1 each time.
The common difference is -1. So, the next number is 1.

This pattern doubles each time.
The common ratio is 2. So, the next number is 64.

This pattern halves each time.
The common ratio is 0.5. So, the next number is 4.

This is a sequence of triangular numbers. These numbers form a pattern where you add increasing values: 2, 3, 4, etc.
So, to get the next number, add 6 to 15. So, the next number is \$21.

This pattern decreases by a growing amount each time: 1, 2, 3, and 4.
To find the next number, subtract the next expected difference (5) from the last number: $20 - 5 = 15$. So, the next number is \$15.

2. Sugar: \$2 for each additional 500 (2.5kg) = \$10
Eggs: each set of 6 eggs costing \$3 (36) = \$18
Coffee: the price decreases by \$5 with each decrease of one cup (1 cup) = \$5
Milk: price increases by \$1.50 for each additional litre (6 litres) = \$9

3. Eggs: 6 eggs = \$0.50 per egg, 12 eggs = \$0.50 per egg, 18 eggs = \$0.44 per egg, 24 eggs = \$0.42 per egg. Buying in larger quantities results in a lower price per egg.

Coffee: 1 cup = \$5 per cup, 2 cups = \$5 per cup, 4 cups = \$5 per cup, 5 cups = \$4 per cup. The general trend here is consistent, with lower prices per unit as you buy more.

Milk: In terms of cost per litre: 1 litre = \$1.50 per litre, 2 litre = \$1.375 per litre, 3 litre = \$1.333 per litre, 4 litre = \$1.3125 per litre. There is a reduction in cost per litre as you increase the quantity, indicating bulk savings.

Soft Drink: 500ml = \$5 per litre, 1.25 litre = \$2.80 per litre, 2 litre = \$1.875 per litre. The cost per litre decreases as the size increases.

4.

	1%	2.5%	5%	7.5%	10%	20%	25%	33%	40%	50%	60%	66%	75%	80%	100%
100	1.00	2.50	5.00	7.50	10.00	20.00	25.00	33.00	40.00	50.00	60.00	66.00	75.00	80.00	100.00
200	2.00	5.00	10.00	15.00	20.00	40.00	50.00	66.00	80.00	100.00	120.00	132.00	150.00	160.00	200.00
50	0.50	1.25	2.50	3.75	5.00	10.00	12.50	16.50	20.00	25.00	30.00	33.00	37.50	40.00	50.00
60	0.60	1.50	3.00	4.50	6.00	12.00	15.00	19.80	24.00	30.00	36.00	39.60	45.00	48.00	60.00
500	5.00	12.50	25.00	37.50	50.00	100.00	125.00	165.00	200.00	250.00	300.00	330.00	375.00	400.00	500.00
1000	10.00	25.00	50.00	75.00	100.00	200.00	250.00	330.00	400.00	500.00	600.00	660.00	750.00	800.00	1000.00

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5. Dollars and Sense

5A Dealing with money 109 //applied

5B Fractions & percentages 110

0.1 0.17 0.25 0.33 0.5 0.6 0.67 0.75 0.8 1
10% 17% 25% 33% 50% 60% 67% 75% 80% 100

2. // applied visual task

5C Percentages 111

a. 10 b. 15 c. 250 d. 40
e. 250 f. 375 g. 40c h. 99 (or 100 for 33.33)

5D Income 113

a. wage: $\$25 \times 38 = \950
b. salary: $\$52,000 / 52 = \$1,000/\text{week}$
c. retainer & commission: $\$20K + \$200K \times 20\% = \$20K + \$40K = \$60,000$
d. payment in kind: $\$50,000 + 52 \times \$500 = \$50,000 + \$26,000 = \$76,000 = \$1,461.54/\text{week}$ (for 52 weeks)
e. aged pension: (BTW she gets approx $\$24,336/\text{year}$)

5E Multiplication & money 114-115

1. a. \$54 b. \$28 c. \$96 d. \$42
e. \$60 f. \$88 g. \$150 h. \$125
i. \$240 j. \$10 (or 10c if you take it as 1/2 a cent) k. \$450 l. \$570

2. a. \$20 b. \$5.50 c. \$500 d. \$130
e. \$900 f. \$2,400 g. \$2.28 h. \$810
i. \$1,300 j. \$1,800 k. \$450 l. \$26,000

3. a. \$19.80 b. \$89.91 c. \$100
d. \$405 e. \$500 f. 428 to 535 minutes

5F Expenses 117 //applied

5G Expenses in action 118-119 //applied investigation

5H Budgeting 101 121

1-4. //applied discussion
5. a. Surplus of \$75 b. Deficit of \$250 c. Deficit of \$250
d. Balanced budget e. Surplus of \$5 f. Deficit of \$50

5I Feed the kitty 122

Total Revenue: \$1,350 (forecasted), \$1,200 (actual)
Total Expenditure: \$940 (forecasted), \$1,080 (actual)
Forecasted Surplus: \$410 Actual Surplus: \$120
4. Alain overestimated earnings and underestimated spending.
5. Alain needs to be more realistic and plan more caarefully.
2, 4-5. //also applied discussion

5J Personal budget 123 //applied

5K Pay slips 125

Employer Details:
Employer: P&Q Enterprises ABN: 45 214 4875
Employee & Bank Account Details:
Employee: Glonsork Elver Bank Account: 016 534360 BSB: 023 145
Pay Date / Pay Period: Date: June 16, 2023 Pay Period: June 9-13, 2023
Ordinary Hourly Rate: \$20

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Ordinary Hours Worked: 38

Overtime / Penalty Rate(s):

Overtime Hourly Rate: \$30 Overtime Hours Worked: 4 Overtime pay: \$120

Gross Entitlement: \$1,070

Tax Deducted: \$214

Net Entitlement: \$856

Net Pay Amount this Year: Year to Date: \$3,210

Employee's Super Fund: Super Fund: RESFund

Employer Superannuation Contribution: \$107 Year to Date: \$321

5L Banking - Deposit accounts 127 //applied

5M Playing it safe - Cash 129 //applied discussion and investigation

5N Playing it safe - Digital 131 //applied discussion and investigation

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6. Shapes and Objects

6A **Shape up** 137 //applied

6B **Basic shapes** 138

1. circle; square; rectangle; oval (ellipse); triangle; pentagon

2. //applied

6C **Objects and shapes** 139 //applied visual and drawing task

6D **Basic objects** 140 //applied visual and drawing task

6E **Describing objects** 141 //applied visual and drawing task

6F **Properties of shapes** 143 (check)

1. //applied

2. All same length (20mm)

3. Square 30mm x 30mm: Quadrilateral; Number of sides: 4; Number of Inside Angles: 4; Equal lengths; Regular
Rectangle 30 mm x 20mm: Quadrilateral; Number of sides: 4; Number of Inside Angles: 4; Opposite sides are equal lengths; Irregular

Equilateral triangle 26mm each side; Number of sides: 3; Number of Inside Angles: 3; Equal lengths; Regular

6G **Size** 145 //applied visual and investigative task

6H **Colour** 146 //applied visual and discussion task

6I **Changing size and colour** 147 //applied visual discussion task

6J **Odd colours** 148 //applied visual and discussion task

6K **Health and recreation** 149 //applied visual and discussion task

6L **Changing shape size** 151 //applied visual and drawing task

6M **Size** 153 //applied visual and investigative task

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7. Quantity & Measuring

7A **Me and measures** 161 //applied investigation

7B **Measuring up** 162 //applied estimation and investigation

7C **Measuring out** 163 //applied investigation

7D **Measuring length** 165 //applied estimation and investigation

ix. perimeter = 18cm

7E **Perimeter** 166

1. perimeter = 320cm 2. //applied

7F **Circumference** 167

circumference = 15.71cm

7G **Measuring weight (mass)** 169 //applied estimation and investigation

7H **Measuring fluid capacity** 171

i. 15 ml or 20 ml. ii -iii. //applied estimation and investigation iv. ml, cc and grams and its multi-lingual. Liquids and solids take up different volumes (size) v. //applied

7I **Measuring solid volume** 173

1. //applied 2. 600cm^3 cube = 125cm^3

7J **Estimating vs measuring** 175 //applied estimation and investigation

7K **Room to move** 176-177 //applied estimation, design and investigation

7L **The heat is on** 178 //applied discussion and investigation

7M **Temperatures** 179

- Typical room temperature: 20-25°C
- Hottest weather temperature ever in Australia: 50.7 °C (123.3 °F), on 2 January 1960 at Oodnadatta, South Australia // and at 13 January 2022 at Onslow, Western Australia.
- Coldest weather temperature ever in Australia: -23.0 °C (-9.4 °F), at Charlotte Pass, New South Wales, on 29 June 1994.
- Temp in LA today: Today (mid-June) it's mid-30's. So probably warmer most times, except in summer Victorian time. Maybe a bit different for regional Victoria, especially North-West.
- Caffe latte: 60-70°C
- Car radiator fluid after a long drive: Can reach up to 90-100°C
- A safe temperature for a child's bath is between 37°C and 38°C (or about 36°C for a newborn)
- A supermarket (fridge) chiller: Typically around 2-4°C
- Healthy human body temperature: Typically around 37°C

7N **Safe temperature investigation** 180 //applied estimation, investigation and discussion

7O **Chef's choice** 181 //applied estimation, investigation and discussion

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8. Data and information

8A Me and data 189 //applied discussion and investigation

8B Data and information 191

1. analogue digital secondary
biodata graphs spreadsheets
collect infographics statistics
communicate information tables
data primary report
database organise words

8C Tables 193

1. Total Wickets and Games:

- The top 4 wicket-takers combined have taken 76 wickets over 29 games.
- The average number of wickets per game for these bowlers collectively is $76 \div 29 \approx 2.6207$.

Individual Performances:

- Zeb: Took 15 wickets in 10 games with an impressive average of 1.5 wickets per game.
- Yan: Despite playing only 3 games, Yan took 18 wickets, which gives him the highest average of 6 wickets per game.
- Xie: The highest wicket-taker with 33 wickets in 11 games, maintaining a solid average of 3 wickets per game.
- Woz: Took 10 wickets in 5 games, averaging 2 wickets per game.

Consistency and Impact:

- Xie appears to be the most consistent performer, given his high wicket tally over more games.
- Yan shows exceptional performance in terms of wickets per game, suggesting he has a significant impact when he plays.
- Zeb and Woz also contribute effectively, maintaining low averages and providing consistent wickets for the team.

2. Hottest Months: January and February are the hottest months, with average minimum temperatures of 16°C and average maximum temperatures of 27°C.

Coollest Months: June and July are the coolest months, with average minimum temperatures of 8°C and average maximum temperatures of 15°C.

Temperature Transition: The transition from summer to autumn (March to May) shows a gradual decrease in temperatures: March (15°C to 25°C), April (12°C to 21°C), and May (10°C to 18°C).

Winter Stability: Winter months (June to August) exhibit relatively stable and low temperatures: June (8°C to 15°C), July (8°C to 15°C), and August (8°C to 16°C).

Spring Variability: Spring temperatures gradually increase: September (10°C to 18°C), October (11°C to 21°C), and November (13°C to 23°C).

Early Summer Rise: December marks the beginning of the summer rise in temperatures, with averages increasing to 14°C (minimum) and 25°C (maximum), preparing for the peak in January and February.

8D The ladder 196-197

1.

		P	W	L	D	For	Against	%	Pts
1	Geelong	3	3	0	0	319	226	141.2	12
2	Richmond	3	3	0	0	199	168	118.5	12
3	Carlton	3	2	0	1	265	167	158.7	8
4	GWS	3	2	0	1	279	197	141.6	8
5	Melbourne	3	2	0	1	246	192	128.1	8
6	Sydney	3	2	0	1	289	248	116.5	8
7	Hawthorn	3	2	0	1	300	277	108.3	8
8	Essendon	3	2	0	1	218	212	102.8	8
9	St Kilda	3	2	0	1	177	189	93.7	8

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10	Port Adelaide	3	1	1	1	234	244	95.9	6
11	Western Bulldogs	3	1	0	2	272	245	111.0	4
12	Adelaide	3	1	0	2	285	279	102.2	4
13	Collingwood	3	1	0	2	257	272	94.5	4
14	West Coast	3	1	0	2	168	240	70.0	4
15	North Melbourne	3	1	0	2	189	274	69.0	4
16	Gold Coast	3	0	1	2	268	331	81.0	2
17	Fremantle	3	0	0	3	170	220	77.3	0
18	Brisbane	3	0	0	3	232	386	60.1	0

2. Geelong & Richmond with 3.
3. Brisbane, Fremantle each lost 3 games; and Gold Coast didn't win 3 games either, as it drew 1.
4. Gold Coast and Port Adelaide each drew 1 game (with one another).
5. Geelong scored 319 points in total.
6. West Coast scored only 168 points in total.
7. Carlton with 167 points in total.
8. Brisbane with 386 points in total.
9. Geelong with 141.2.
10. Brisbane with 60.1.
11. Who knows?

8E Bar graphs in action 199

1. Student travel method to school // Sep 4-8, 2023 // (approx) walk = 14 car = 25 cycle = 17 public transport = 22 other = 8 // car with 25 // other with 8 // walk with 14 compared to car with 25 // car, cycling, and public transport // perhaps skating, horse, jogging, etc..

8F Working with bar graphs 200-201

- A 1. Student lunch choice: Monday September 17
Own = 50 Chips = 40 Pie = 35 Salad roll = 30 Burger = 42 Hotdog = 24 Other approx 12
2. Own lunch at 50 3. Burger or chips approx 40 each 4. Pie = 35 5. Hotdog approx 24
 6. Sushi, fruit - what do you get?
 7. 30 got a salad roll and these may or may not all be vegetarian. But then there's chips, own and other to consider. So you can't really tell. The better question is: how many are not vegetarian?
 8. Sometimes people who bring their own lunch get to buy lunch on Friday as a treat. There might also be some cultural or religious changes as well.
 9. //applied
 10. //applied investigation

- B. //applied graphing activity

8G Pie charts in action 203

2. Student mobile phone types // September 2023 // iPhone // iPhone = 70, Galaxy = 20, Other = 10 // then iPhone will = 35, Galaxy = 10, other = 5 // 3.5 times more // other? = what do you think? // Only if 1 of the 'other' phones is more than 5%. 3-5. //applied graphing activity

8H Working with pie charts 204-205

1. Sources of Australian Energy Generation as at December 2020.
2. 3 different sources of energy generation: Coal, gas, renewables.
3. Coal 55%, gas 21%, renewables 24%.
4. Coal with 55%.

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5. Gas with 21%.
 6. 24% is from renewables.
 7. Solar, wind, hydro and (and some smaller sources such as geothermal).
 8. 10 years ago both coal and gas would be higher with renewables lower.
 9. Coal would have fallen a lot, as well as gas; with renewables growing to well over 32%.
 10. //applied graphing activity
- B. //applied graphing activity

8I Line graph 206

bottom time scale ten trend

8J Line graphs in action 207 //applied graphing activity

8K Working with line graphs 208-209

1. Number of Australian Apprenticeship in Training Australia 2012 to 2021

2.

2012	515000
2013	404000
2014	345000
2015	302000
2016	282000
2017	274000
2018	276000
2019	277000
2020	268000
2021	341000

3. 2012: 515,000

4. 2020: 268,000

5. The general trend is downwards with a strong uptick (over 70,000) in 2021.

6. 2021

7. Fewer training places available over time due to industry restructure, then new employment growth towards the end of the Covid-19 pandemic

8. //applied investigation

B. //applied graphing activity

8L Infographics 211 //applied investigation and discussion

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9. Making Sense of the World

9A What's next? 216

a. 12 (+2) b. 1 (halved)

c. amber (traffic light) d. You can't predict because it's random.

e. Possible similar, but if there's a weather change then the temp will alter // and quite likely to change after a run of after 5 similar days.

f. You can't predict because it's random.

9B Dollars and sense 217 //applied analysis

9C Uncertainty 219 //applied investigation and discussion

9D Coincidence 221 //applied investigation and discussion

9E Luck 223 //applied investigation and discussion

9F Chance 224 //applied investigation and discussion

9G Randomness 225 //applied investigation and discussion (they're not random)

9H A toss of the coin 227

1. 50% 2. 50% 3. 50% 4. 50% 5. 25%

9I Probabilities 228

1. Tail = 1 in 2 or 50%; spade = 1 in 4 or 25%; rolling a 3 = 1 in 6 or 16.7%; European roulette 37 numbers) = 1 in 37 or 2.7%; Melbourne cup winner usually = 1 in 24 or 4.2%; lotto 6 from 45 = 1 in 8.145m (virtually 0%); shark depends where you are in the ocean in Australia and at what time, but 1 in 5+ million to 1 in 10 million per year.

TBC

2. 50/50 (1/2) - Even chance // 3 in 4 (3/4) - High chance // 1 in 10 - Low chance

99 out of 100 (99/100) - Very high chance // 1/2 - Even chance // 1 in 36 - Very low chance

10 in 15 (2/3) - Fairly high chance // 2 chances in 5 (2/5) - Fairly low chance // You walking on the moon - Almost no chance, but someone has to do it - so don't give ups!

9J 50 and 16.7? 229 //applied investigation and analysis

9K Make an estimate 231 //applied estimation and investigation

9L Making predictions 232-233 //applied estimation, investigation and discussion

10. How Does it Work?

//all applied