Chapter 2 *MathLinks 7*
Student Resource Answers

2.1 Add and Subtract Decimal Numbers, pages 48–51

4. a) 90.98; 60 + 20 = 80
b) 141.73; 70 + 30 + 20 = 120
c) 1751.73; 600 + 900 + 200 = 1700

5. a) 0.9770; 0.4 + 0.3 + 0.2 = 0.9
b) $16.62; 9 + 6 = 15
c) 763.70; 200 + 400 = 600
d) 509.7; 300 + 100 = 400

6. a) 95.2; 60 + 20 = 80
b) $95.61; 300 – 200 = 100
c) 7.596; 4 + 2 = 6

7. a) 23.11; 30 – 5 = 25
b) $7504.55; 3000 + 4000 = 7000
c) 46.1 m; 600 – 500 = 100

8. a) 59.37 **b)** 163.66 **c)** 82.36 **d)** 7.16

9. a) 12.218 **b)** 2.097 **c)** $262.79

10. a) 3.10 **b)** $3.02 **c)** 0.212 **d)** $240.29

11. Answers may vary. **a)** $100 **b)** lower; used very low front-end estimate for road bike **c)** $151.09

12. 20.32 kg **13.** 229.88 cm

14. Answers may vary. **i)** 0.5, 0.5, 0.3, 0.7
ii) 0.5, 0.5, 0.5, 0.5 **iii)** 0.9, 0.5, 0.3, 0.3

15. The year before was faster by 3.48 s.

16. a) B higher by 0.01 m
b) A faster by 0.23 s
c) B faster by 0.8 s **d)** B by 164 points

17. 22.16

18. Yes. Answers may vary. Both estimating and calculating give an answer of 0.

19. a) Hudson Bay, Arctic, Atlantic, Pacific
b) 2 million km^2
c) 11 million km^2
d) 9.99 million km^2
e) larger; estimate was rounded up more than down

20. No. Relative size: $4 + $6 + $10 = $20 but $0.45 – $0.01 – $0.40 = $0.04

21. 7.9 kg

22. The pants were more expensive. The difference between what they started with and what was left over was greatest for George ($56.23).

23. a) 6 **b)** 5
c) 6 is more accurate. In part a) only the answer was rounded. In part b) both initial values were rounded. The actual value of 5.65 is closer to 6 than to 5.

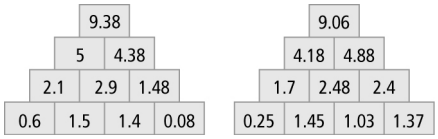
24. Answers may vary.

a)

Item	Plan 1	Plan 2
Glue stick	1	1
Coloured pencils	1	1
Calculator	1	1
Pencils	1	3
Art eraser	1	0
Ruler	1	1
3-ring notebook	1	1
Pencil case	1	1
Total:	$24.48	$24.59

b) $0.11 **c)** Plan 1

25. a)



b) Find the difference between the layers. Do the lower blocks first, and the upper blocks last.

2.2 Multiply Decimal Numbers, pages 57–59

3. a) 82.96; 6 × 10 = 60, 60 is closer to 82.96 than to 8.296 or 829.6
b) 43.74; 40 × 1 = 40, 40 is closer to 43.74 than to 4.374 or 437.4

4. a) 41.36; 4 × 8 = 32, 32 is closer to 41.36 than to 4.136 or 413.6
b) 38.08; 10 × 3 = 30, 30 is closer to 39.08 than to 3.808 or 380.8

5. a) 2 × 3 = 6; 5.25 **b)** 10 × 0.1 = 1; 2.56
c) 400 × 2 = 800; 594
d) 14 × 3 = 42; 34.5

6. a) 70 × 3 = 210; 238 **b)** 4 × 3 = 12; 9.72
c) 27; 27 **d)** 50 × 10 = 500; 391

7. a) 4 × 600 = 2400; 2197.85
b) $10 × 500 = $5000; $6429.10
c) 7 × 2 = 14; 15.792

8. a) 4 × 200 = 800; 871.06 **b)** 3 × 3 = 9; 7.205 **c)** 70 × 30 = 2100; 1869.67

9. 70.2 kg **10.** $7839 **11.** 176.7 km

12. $308.75

13. a) 275.2 **b)** 275.2 **c)** 27.52 **d)** 2.752
e) 27.52

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14. 300, 2 decimal places right; 30, 1 decimal place right; 3, 0 decimal places right or left; 0.1, 1 decimal place left; 0.01, 2 decimal places left; 0.003, 3 decimal places left
15. a) 46.5, 3700, 580 **b)** larger **c)** Answers may vary. For example, when multiplying by 10, 100, 1000, move the decimal point to the right, 1, 2, or 3 places, respectively.
16. a) 0.3, 0.045, 0.000 345 **b)** smaller
c) Answers may vary. When multiplying by 0.1, 0.01, 0.001, move the decimal point to the left, 1, 2, or 3 places, respectively.
17. a) $9.95 **b)** $11.96
18. a) 450 g; front-end estimation: $10 \times 40 + 50 = 450$ **b)** 601.9 g
19. 1238.4 g **20. a)** 23.75 h **b)** $219.69
21. a) 136 cm
b) Answers may vary. For example, $10 \times 13.6 = 136$

2.3 Divide Decimal Numbers, pages 65–67

4. a) 1.224; $30 \div 30 = 1$, 1 is closer to 1.224 than to 0.1224 or 12.224
b) 14.8; $6 \div 0.5 = 12$, 12 is closer to 14.8 than to 1.48 or 148
5. a) 81.0; estimate $60 \div 1 = 60$, 60 is closer to 81 than to 8.1 or 810
b) 0.99; estimate $6 \div 6 = 1$, 1 is closer to 0.99 than to 9.9 or 99
6. a) 4; 3.75 **b)** 5; 5.7 **c)** 9; 8.5 **d)** 8; 7
7. a) 14; 13.86 **b)** 70; 74.4
c) 9; 9.212 **d)** 6; 6.62
8. a) 6; 5.5 **b)** 5; 4.95 **c)** 1; 0.93
9. a) 3; 2.87 **b)** 8; 8.62 **c)** 80; 87.32
10. $2.57
11. a) It takes about 6 jumps of 0.3 to get from 0 to 2. **b)** $2 \div 0.355 \approx 5.63$ cans
12. $420 \div 70 = 6$ h; $398.75 \div 72.5 = 5.5$ h
13. a) $0.34 **b)** $0.50
14. a) 0.03, 3, 300 **b)** Answers may vary. If the divisor is greater than 1, move the decimal point to the left. If the divisor is less than 1, move the decimal point to the right.
15. a) 0.465, 0.37, 0.000 58 **b)** smaller
c) Answers may vary. For each increase in the divisor from 10 to 100 to 1000, move the decimal point 1, 2, and then 3 decimal places to the left, which is equal to the number of zeros in the divisor.
16. a) 400, 145, 524 **b)** larger
c) Answers may vary. Move the decimal point in the quotient to the right according to the number of decimal places in the divisor (e.g., for 0.1, move 1 place right; for 0.01, move 2 places right).
17. a) 1.2 kg **b)** 0.1 kg
18. a) 0.1 mm
b) Greater. The value of 51.5 was rounded to a lower value of 50 that was easier to estimate with.
19. 143.6 g **20.** 250 sheets
21. a) 73 h **b)** $145 per hour
c) Mon–Tues: $1812.50; Wed: 0; Thurs–Sat: $1957.50; Sun: $1087.50
22. a) 6.44 min
b) 0.78 laps per min or 4.95 km/min

2.4 Order of Operations and Decimal Numbers, pages 71–75

4. a) $19.39
b) Answers may vary. For example, $3 \times \$4.49 + 4 \times \$0.79 + 12 \times \$0.23 = \$19.39$
5. a) $8.83
b) $5 \times \$1.09 + \$1.49 + \$1.89 = \$8.83$
6. a) $6 \times 2.5 - 0.1 \times 3 = 14.7$
b) $(4 + 1.79) \div 3 + 1.5 = 3.43$
c) $(8.1 + 3.2) \times 2 = 22.6$
d) $4.2 \div 2 - 0.5 = 1.6$
7. a) $12.4 \div 3.1 - 1.7 = 2.3$
b) $(4.5 - 1.1) \times 6.7 = 22.78$
c) $23.5 + 6.3 - 7.6 \times 2.5 = 10.8$
d) $4.1 \times (3.6 \div 0.9) + 12.4 = 28.8$
8. a) Answers may vary. For example, Megan bought 3 ice cream cones for $1.50 each for herself and 2 friends. She had 2 discount coupons worth $1.25 each. How much did she have to pay?
b) $2.00
9. a) 3.2 **b)** 2.1 **c)** 0.7
10. $0.5 + 1 - 5 \times 0.1 = 1$
11. 20 h **12.** 1096.2 km **13.** $34.95
14. a) $440
b) $(80 \times 3.25) + (120 \times 1.5) = 440$
c) $280 **d)** $160
15. Answers may vary. **a)** $12.00 **b)** $11.35
16. a) Mars; $687 \div 365 = 1.88$
b) 11.87 years **c)** 4.149 times
d) Use a number line to show jumps of about 0.24 years to show about 4 orbits in 1 Earth year.

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17. a) $31.5 billion U.S. **b)** $15.0 billion U.S.
c) 7.04 times as great as
18. a) (7 + 30) × 0.5 = 18.5
b) (6 + 3) × 0.2 + 0.4 ÷ (2 – 1) = 2.2
19. a) (80 ÷ 0.4) + (6 × 0.3) = 201.8
b) 80 ÷ (0.4 + 6) × 0.3 = 3.75
20. a) 656 **b)** Answers may vary. For example, $110 000
21. a) Cecil: $8.99; Kent: $8.09; Laura: $6.09
b) $23.17 **c)** Calculate individual totals, then add individual totals.
22. a) 3.5 kg **b)** 14 days
23.

Name	Hours	Hourly Wage	Total Wage
Jeanne	45	$10.50	$472.50
Alice	42	$17.00	$714.00
Fatek	18	$7.75	$139.50
Larry	50	$15.25	$762.50

24. 57.8 mm

Chapter 2 Review, pages 74–75

1. D **2.** B **3.** C **4.** A
5. a) 98.48; relative size estimate:
1 + 10 + 1 + 90 = 102, 102 is closer to 98.48 than to 9.848 or 984.8
b) 278.63; relative size estimate:
400 – 100 = 300, 300 is closer to 278.63 than to 27.863 or 278.3
c) 34.073; relative size estimate:
30 + 10 – 10 = 30, 30 is closer to 34.073 than to 3.4073 or 340.73
6. a) 7; 6.95 **b)** 5; 4.7 **c)** 8; 8.86
d) 6; 5.62 **e)** 2; 2.1 **f)** 3; 2.777
7. a) 38.95 **b)** 747.455 **c)** 56.08
8. 85.95 kg
9. a) 6.75 **b)** 8.0370 **c)** 1888.48
10. relative size estimate: 8; 7.56 is closer to 8, 0.7 is closer to 1; 5.3
11. 5.7 kg **12.** $532.95
13. a) 71.00; about 70 steps of 0.4 between 0 and 28, 70 is closer to 71.00 than to 7.100 or 710.0. The answer is 71.00.
b) 5.3; relative size estimate: 40 ÷ 8 = 5, 5 is closer to 5.30 than to 0.530 or 530
c) 27.04; relative size estimate:
250 ÷ 10 = 25, 25 is closer to 27.04 than to 2.704 or 270.4
14. a) 58; 54.45 **b)** 35; 36.9 **c)** 20; 23.8
15. 2.05 m **16.** 30.4 mm
17. a) 2.7 **b)** 35.21 **c)** 22.3
18. a) 3.6 + 8.2 ÷ 4 = 5.65 **b)** 4.9 – 7.2 × 0.1 = 4.18 **c)** 62.32 ÷ (10.1 – 2.5) = 8.2
19. a) (7.5 + 8.6) × 9.1 = 146.51
b) 45.15 ÷ (0.8 + 1.7) × 2.2 = 39.732
c) (12.6 – 3.3) ÷ 3 + 11.4 = 14.5
20. a) $1560.00
b) (80 × 12.5) + (30 × 8.25) + (50 × 6.25)

Chapter 2 Practice Test, pages 76–77

1. C **2.** A **3.** A **4.** C
5. C **6.** 0.35 kg **7.** 1.35
8. a) 0.9770; front-end estimate:
0.4 + 0.3 + 0.2 = 0.9, which is closer to 0.977 than to 9.77 or 0.0977
b) 20.66; front-end estimate:
40 – 20 = 20, which is closer to 20.66 than to 206.6 or 2.066
c) 18.125; relative size estimate:
6 ÷ 0.3 = 20, which is closer to 18.125 than to 1.8125 or 181.25
d) 1.992; relative size estimate:
20 × 0.1 = 2, which is closer to 1.992 than to 0.1992 or 19.92
9. a) 39.05 **b)** 28.48
10. a) (4.5 + 7.2) × 3.1 = 36.27
b) 1.3 × (4.5 – 0.9) + 6.2 = 10.88
c) (7.1 + 3.7) × (2 ÷ 0.3) = 72
d) 7.2 ÷ (0.8 + 5.6) × 3.9 = 4.3875
11. 89.6 kg **12.** 256.9 g **13.** $151.92
14. a) $22.00; no **b)** $22.85; no
c) Answers may vary. For example, they need to put back 1 toy car at $0.97 each.
15. a) Wendy: 8.2 + 16.4 ÷ 0.41 + 12.6 = 8.2 + 40 + 12.6 = 60.8
b) Mia used addition before division.
c) (8.2 + 16.4) ÷ 0.41 + 12.6 = 72.6
d) 28.4 + 3.6 ÷ 0.4 – 7.4 = 30
e) Answers may vary. For example, (28.4 + 3.6) ÷ 0.4 – 7.4 = 72.6

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