Year 6 Home Learning Pack 2A – Answers

Activity 1 – Rounding Numbers

Expected Varied Fluency

1a. A and C

2a. 1,625,900 and two million, three hundred and fifty-five thousand, eight hundred and five

3a.

Number	Rounds to 2,900,000	Rounds to 3,000,000
2,858,790	✓	
3,015,830		✓
2,945,745	✓	

4a. 2,710,000; 2,700,000; 3,000,000

E – Reasoning and Problem Solving

1a. To the nearest million, the odd one out is 4,514,212 (represented pictorially).
To the nearest hundred thousand, the odd one out is 3,894,170 (written in words).

2a. Jade – 3,502,005 or 3,495,811; Maxine – 3,415,667 or 3,495,811; Justin – 3,502,005 or 3,495,811

3a. Savanna is incorrect because she has rounded to the nearest ten thousand. Her answer should be 2,100,000.

Expected Varied Fluency

1b. B and C

2b. 4,465,715 and four million, five hundred and two thousand, five hundred and thirty

3b.

Number	Rounds to 4,900,000	Rounds to 5,000,000
4,896,344	✓	
4,995,051		✓
5,003,688		✓

4b. 5,260,000; 5,300,000; 5,000,000

E – Reasoning and Problem Solving

1b. To the nearest hundred thousand, the odd one out is 947,301.
To the nearest ten thousand, the odd one out is 1,042,240 (represented pictorially).

2b. Ellis – 4,509,012 or 4,513,433 or 4,499,785; Toni – 4,509,012 or 4,513,433 or 4,499,785; Saanvi – 4,509,012 or 4,513,433

3b. Trevan is incorrect because there are 5 thousands which means the number rounds up. His answer should be 5,500,000.

Activity 2 – Fractions to Decimals

Expected Varied Fluency (p10)

1a. 7, 0, 3

2a. False. It is 0.7

3a. A = 0.8, B = 0.25, C = 0.3

4a. A = 0.6, B = 0.8, C = 0.25

E – Reasoning and Problem Solving (p11)

1a. Chuan is correct. $\frac{4}{5}$ is 0.8 which is greater than 0.7.

2a. 0.5, 0.2, 0.6, 0.4. Order: 0.2, 0.4, 0.5, 0.6.

3a. Various answers, for example:
$\frac{16}{32} = 0.5$; $\frac{17}{34} = 0.5$; $\frac{18}{36} = 0.5$

Expected Varied Fluency

1b. 6, 4, 7

2b. True

3b. A = 0.6, B = 0.25, C = 0.2

4b. A = 0.4, B = 0.8, C = 0.6

E – Reasoning and Problem Solving

1b. Scarlett is correct. $\frac{2}{5}$ is 0.4 which is greater than 0.2.

2b. 0.7, 0.6, 0.15, 0.9. Order: 0.9, 0.7, 0.6, 0.15.

3b. Various answers, for example:
$\frac{12}{20} = 0.6$; $\frac{12}{25} = 0.48$; $\frac{18}{30} = 0.6$

Activity 3 – Decimals

My journal

3: $3 \times 0{\cdot}8 = 2{\cdot}4 \div 20 = 0{\cdot}12$
6: $6 \times 0{\cdot}8 = 4{\cdot}8 \div 20 = 0{\cdot}24$
20: $20 \times 0{\cdot}8 = 1{\cdot}6 \div 20 = 0{\cdot}8$
100: $100 \times 0{\cdot}8 = 80 \div 20 = 4$

The output is always multiplied by $\frac{0{\cdot}8}{20} = \frac{8}{200} = \frac{1}{25}$ which is the same as dividing by 25; for example:

$3 \div 25 = \frac{3}{25} = 0{\cdot}12$

Power play

Answers will vary.

Activity 4 – Fraction of an Amount

Expected Varied Fluency

1a. 480, 93
2a. 24, 77, 162, 51
3a. 120 > 110, 420 = 420
4a. 88, 108

E – Reasoning and Problem Solving

1a. 126
2a. Tia has read the most pages.
3a. $\frac{5}{6}$ of 720 = 600; $\frac{5}{7}$ of 840 = 600;
$\frac{6}{7}$ of 840 = 720

Expected Varied Fluency

1b. 28, 260
2b. 142, 45, 23, 170
3b. 97 < 132, 644 < 645
4b. 168, 285

E – Reasoning and Problem Solving

1b. 153
2b. Simon has spent the most money.
3b. $\frac{4}{6}$ of 660 = 440; $\frac{5}{6}$ of 660 = 550;
$\frac{4}{5}$ of 550 = 440

Activity 5 – Percentages

My journal

1. a) Answers will vary; look for the shape being divided into other shapes. Children may shade 25% of each shape or 25% of the shape as a whole..
   b) Answers will vary, but the equivalent of one full section (representing 20%) and $\frac{3}{4}$ of another section (representing 15%) should be shaded.

Power play

of	900	170	260	25	1
10%	90	17	26	2·5	0·1
1%	9	1·7	2·6	0·25	0·01
75%	675	127·5	195	18·75	0·75
100%	900	170	260	25	1
99%	891	168·3	257·4	24·75	0·99

Activity 6 – Four Quadrants

Expected Varied Fluency

1a. A (-4, -1), B (-1, 3), C (2, 3), D (2, -2)
2a. A (-3, 3), B (-1, 3), C (-1, 2), D (-3, 2), E (3, -1), F (3, -3), G (1, -3), H (1, -1)
3a. Trapezium and parallelogram

E – Reasoning and Problem Solving

1a. Holly is not correct because (-2, -4) should be (-2, -3) to make a parallelogram.
2a. Various answers, for example:
(2, -1); (4, -1); (1, -3); (3, -3) or
(2, -1); (5, -1); (1, -4); (4, -4)
3a. Use the coordinates that are given to deduce that A = (1, -2); B = (4, -4).

Expected Varied Fluency

1b. A (-3, 2), B (-1, -2), C (3, -1), D (4, 1)
2b. A (1, 3), B (3, 3), C (3, 0), D (1, 0), E (-3, -1), F (-2, -1), (-3, -4), H (-2, -4)
3b. Kite and arrowhead (irregular quadrilateral)

E – Reasoning and Problem Solving

1b. Max is not correct because (-2, 4) should be (-2, 5) or (3, 5) should be (3, 4) to make a trapezium.
2b. Various answers, for example:
(-3, -1); (-5, -4); (-1, -4); (-3, -5) or
(-3, -1); (-5, -3); (-2, -3); (-3, -4)
3b. Use the coordinates that are given to deduce that A = (-2, 4); B = (-1, 2).

Activity 7 – Pairs of Values

Expected Varied Fluency

1a. $a = 94$ and $b = 11$
2a. 45 and 12; 61 and 28; 56 and 23; 72 and 39
3a. $b = 8$ and $c = 27$
4a. Various answers, for example: if $a = 12$, then $b = 15$; if $a = 10$, then $b = 25$; if $a = 8$, then $b = 35$.

E – Reasoning and Problem Solving

1a. Vivian is incorrect because $5 \times 7 = 35$; $50 - 35 = 15$. $15 \div 3 = 5$ so $i = 5$.
2a. A or D could be true. For example:
A. $a = 15$; B. $a = 7$
3a. Various answers, for example:
$m = 30$, $s = 10$; $m = 40$, $s = 5$; $m = 10$, $s = 20$

Expected Varied Fluency

1b. $h = 15$ and $i = 11$
2b. 23 and 18; 25 and 16; 28 and 13; 32 and 9
3b. $a = 8$ and $c = 27$
4b. Various answers, for example: if $c = 19$, then $d = 1$; if $c = 20$, then $d = 4$; if $c = 21$, then $d = 7$.

E – Reasoning and Problem Solving

1b. Ralph is incorrect because $2 \times 15 = 30$; $40 - 30 = 10$. $10 \div 5 = 2$ so $y = 2$.
2b. B, C or D could be true. For example:
B. $a = 10$; C. $a = 8$; D. $a = 6$
3b. Various answers, for example: $s = 10$, $l = 20$; $s = 5$, $l = 30$; $s = 11$, $l = 18$

Activity 8 – Problem Solving Algebra

My journal

1 a) $3a + 5 = 20$
Answers will vary; for example:
Kate puts £5 in the bank, and saves a set amount each week. After 3 weeks she has £20. How much does she save each week?

b) $5b - 8 = 17$
Answers will vary; for example:
Kate saves a set amount each week. After 5 weeks she withdraws £8, leaving £17. How much does she save each week?

Power puzzle

There are 15 different types of rectangles:

2 × 1 rectangles, 1 × 2 rectangles, 3 × 1 rectangles,
1 × 3 rectangles, 4 × 1 rectangles, 1 × 4 rectangles,
2 × 2 squares, 3 × 3 squares, 4 × 4 squares,
2 × 3 rectangles, 3 × 2 rectangles, 2 × 4 rectangles,
4 × 2 rectangles, 4 × 3 rectangles, 3 × 4 rectangles.

Activity 9 – Imperial and Metric Measures

My journal

1. a) The mistake is that she has multiplied/divided by 100, not 1,000.
The correct answer is 4,500 ml is the same as 4·5 l (or 450 millilitres is the same as 0·45 litres).

b) The mistake is that he has not converted the units to a common unit of measurement (grams); he cannot just take away 1, he needs to convert the kg to g first.
The correct answer is 750 g.

c) The mistake is that she has doubled ·6 to get ·12; 1·6 × 2 = 3·2.
The correct answer is 3·2 km.

Power puzzle

a)

	Number	Letter
56 km = ? m	56,000	P
470 g = ? kg	0·47	A
47 cm = ? mm	470	S
210 g = ? kg	0·21	T
390 mm = ? cm	39	I
2, 100 ml = ? l	2·1	E
0·47 l = ? ml	470	S

Answer = pasties

b)

	Number	Letter
47 cm = ? m	0·47	A
56 kg = ? g	56,000	P
560 m = ? cm	56,000	P
5·6 kg = ? g	5,600	L
0·21 cm = ? mm	2·1	E
56 l = ? ml	56,000	P
3,900 cm = ? m	39	I
2,100 g = ? kg	2·1	E

Answer = apple pie

Activity 10 – Perimeter, Area and Volume

My journal

1. a) I know that the area of this parallelogram is 108 cm^2 because the area is given by the formula perpendicular height × base.

b) I know that the area of this triangle is 24·75 cm^2 because the area is given by the formula base × perpendicular height ÷ 2.

2. False.
Explanations may vary; for example:
A rectangle with sides 1 cm and 6 cm will have an area of 6 cm^2 but a perimeter of 14 cm, whereas a rectangle with sides 2 cm and 3 cm will have an area of 6 cm^2 but a perimeter of 10 cm.

3. a) Shape A is the odd one out.
b) All the other shapes have an area of 12 cm^2.
c) Answers will vary; for example:
Shape B is the only shape with right angles.

Power puzzle

1. Yes, the volume of the water in the first tank is 64 cm^3 and the volume of the cube is 64 cm^3.

2. The volume of the water before putting the cube in is 20 × 20 × 2·5 = 1,000 cm^3 and the volume after is 20 × 20 × 5 = 2,000 cm^3, so the volume of the cube is 1,000 cm^3.
10 × 10 × 10 = 1,000 cm^3
Each side is 10 cm.