

Year 6 Answer Booklet

Lesson 1	
Recycling facts	<ol style="list-style-type: none"> 1. $8 \times 3 = 24$ hours 2. $\frac{1}{4}$ of 6,000 = 1,500 gallons 3. 55% of 20 = 11kg 4. 16% of £1.25 = 20p 5. 100 people = 3,800kg newspaper = 3.8 tonnes. $24 \times 3.8 = 91.2$ trees = 92 trees 6. 1,200,000 per year = 100,000 per month = 25,000 per week = 3,571 per day
Sunscreen Statistics	<ol style="list-style-type: none"> 1. $20 \times 60 = 1200$ seconds 2. $2 \times 12 = 24$ months 3. $\frac{40}{60} = \frac{2}{3}$ of an hour 4. 80% of 60 = 48 people 5. $15 \times 30 = 450$ minutes = 7 hours 30 minutes
Sunrise and Sunset Statistics	<p>J: 8h 38m = 518m F: 10h 25m = 625m M: 12h 14m = 734m A: 14h 15m = 855m M: 15h 55m = 955m J: 16h 38m = 998m J: 15h 55m = 955m A: 14h 14m = 854m S: 12h 16m = 736m O: 10h 19m = 619m N: 8h 35m = 515m D: 7h 50m = 470m</p>
Lesson 2	
Flag Fun	Answers will depend of flags chosen for each question
Code Cracker	To make war between Europe's nations unthinkable
Pascal's Triangle	<ol style="list-style-type: none"> 1. Each number is the sum of the two numbers directly above it. 2. <pre> 1 5 10 10 5 1 1 6 15 20 15 6 1 1 7 21 35 35 21 7 1 1 8 28 56 70 56 28 8 1 </pre> 3. They double. 4. Children might notice: the symmetry of the triangle, the 2nd diagonal of counting numbers, the third diagonal of triangular numbers etc.

Lesson 3

Average Analysis	<ol style="list-style-type: none"> 1. 37 goals 2. Tottenham (9 goals) 3. Chelsea and Middlesborough 4. Tottenham v Milwall 5. Huddersfield v Manchester City 6. Mean: $37 \div 26 = 1.4$ Mode: 0 Median: 1
Sports Day Data	<p>Ali won</p> <p>(Jo 157cm, Ali 308cm, Mark 258cm, Pippa 169cm, Mauro 279cm, Evie 249cm, Timo 196cm, Jack 254cm, Amelia 271cm, Shane 256cm)</p>
Court Calculations	<ol style="list-style-type: none"> 1. $10.973 - 8.23 = 2.743\text{m}$ 2. $(23.77 \times 2) + (10.973 \times 2) = 69.486$ 3. $11 \times 24 = 264\text{m}^2$ 4. $264 - (24 \times 8) = 72\text{m}^2$ <p>Challenge: 66</p>

Lesson 4

Tricky Timelines	<ol style="list-style-type: none"> 1. September 1939 2. 21 months = 1 year and 9 months 		
Fasting Times	<ol style="list-style-type: none"> 1a. 30 days 1b. $30 \times 24 = 720$ 2a. $04:45 - 21:15 = 16.5$ hours per day $16.5 \times 7 = 115.5$ hours per week 2b. $16.5 \times 30 = 495$ hours during Ramadan 3. 1 day $115.5 / 24 = 4.8125 = 5\text{days}$ $495 / 24 = 20.625 = 21$ days 		
Digit Dilemmas	<ol style="list-style-type: none"> 1. 9621, 1269 2. 196 3. 24 (See Q4) 4. 1269, 1296, 1629, 1692, 1926, 1962, 2169, 2196, 2619, 2691, 2916, 2961, 6129, 6192, 6219, 6291, 6912, 6921, 9126, 9162, 9216, 9261, 9612, 9621 5. $61 + 29 = 90$ or $21 + 69 = 90$ 6. 162, 169, 192, 196, 216 and 219 		
Recipe Ratios	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>12 people: 1350g pumpkin 1650ml milk 3 teaspoons cardamom seeds, crushed 3 tablespoons sultanas 84g unsalted butter 345g sugar 126g flaked almonds</p> <p>6 people: 675g pumpkin 825ml milk 1.5 teaspoons cardamom seeds, crushed 1.5 tablespoons sultanas 42g unsalted butter 172.5g sugar 63g flaked almonds</p> </td> <td style="width: 50%; vertical-align: top; border-left: 1px solid black;"> <p>9 people: 1012.5g pumpkin 1237.5ml milk 2.25 teaspoons cardamom seeds, crushed 2.25 tablespoons sultanas 63g unsalted butter 258.75g sugar 94.5g flaked almonds</p> </td> </tr> </table>	<p>12 people: 1350g pumpkin 1650ml milk 3 teaspoons cardamom seeds, crushed 3 tablespoons sultanas 84g unsalted butter 345g sugar 126g flaked almonds</p> <p>6 people: 675g pumpkin 825ml milk 1.5 teaspoons cardamom seeds, crushed 1.5 tablespoons sultanas 42g unsalted butter 172.5g sugar 63g flaked almonds</p>	<p>9 people: 1012.5g pumpkin 1237.5ml milk 2.25 teaspoons cardamom seeds, crushed 2.25 tablespoons sultanas 63g unsalted butter 258.75g sugar 94.5g flaked almonds</p>
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Lesson 5

A Cake Sale to be Proud of!

1. £25
2. £20
3. £120
4. N/A

Merchandise Maths

1. $£30 + (2 \times £10) + (1.5 \times £2.50) + (30 \times £2.50) = £128.75$
2. 2 grey t-shirts + 2 badges or 1 grey t-shirt + 6 badges
3. $\frac{1}{4}$
4. $\frac{1}{12}$
5. White t-shirt £25.50
Grey t-shirt £8.50
Balloons £2.13
Badge £2.13
6. £11.25




Theme Park Design

N/A

Extra

Seaside Logic Puzzle

The missing total is 7.2

-  = 3.5
-  = 2.1
-  = 1.6

Futoshiki Puzzles

1	3	4	2	5	3 <	4 <	6	1	2
2 >	1	3 <	4	1	2	6	4	5	3
4	2	1	3	2	5 >	3 >	1	6	4
>	3	4	2	1	3	5	2	6	
3	4	2	1	4	6 >	5	2	3	1
				6	1 <	2	3 <	4 <	5

Sudoku Puzzles



The image shows two hand-drawn 9x9 Sudoku grids. The top grid has the following numbers in rows (from top to bottom):
 Row 1: 5, 2, 8, 4, 6, 7, 3, 1, 9
 Row 2: 9, 6, 3, 8, 1, 5, 4, 2, 7
 Row 3: 1, 7, 4, 2, 9, 3, 5, 8, 6
 Row 4: 2, 3, 1, 9, 7, 6, 8, 5, 4
 Row 5: 8, 5, 7, 1, 2, 4, 6, 9, 3
 Row 6: 4, 9, 6, 3, 5, 8, 1, 7, 2
 Row 7: 3, 4, 5, 7, 8, 9, 2, 6, 1
 Row 8: 7, 8, 2, 6, 4, 1, 9, 3, 5
 Row 9: 6, 1, 9, 5, 3, 2, 7, 4, 8
 The bottom grid has the following numbers in rows (from top to bottom):
 Row 1: 6, 9, 5, 8, 7, 3, 2, 4, 1
 Row 2: 1, 8, 3, 2, 5, 4, 6, 9, 7
 Row 3: 2, 7, 4, 1, 9, 6, 5, 3, 5
 Row 4: 4, 5, 1, 7, 3, 2, 9, 6, 8
 Row 5: 8, 6, 2, 5, 4, 9, 1, 7, 3
 Row 6: 7, 3, 9, 6, 1, 8, 4, 5, 2
 Row 7: 5, 2, 8, 9, 6, 7, 3, 1, 4
 Row 8: 9, 4, 7, 3, 8, 1, 5, 2, 6
 Row 9: 3, 1, 6, 4, 2, 5, 7, 8, 9