Answers

5.1

I shall be adding assessments for all units of the National Curriculum for each year group from Year 2 to Year 6. I hope to finish this task by October half term. I intend to add two assessments for each unit.

Please visit www.mathsframe.co.uk for hundreds of interactive games and worksheets designed around the new national curriculum. All games and worksheets are designed by me. I have been a teacher (and latterly head of school) for 12 years and for the last 7 years I have taught the whole of KS2 in a tiny village school. This has given me a valuable insight into the progression of mathematical skills across KS2. The games and worksheets on mathsframe reflect this experience.

Since September 2016 I have been working full time on mathsframe. There will be many more games, worksheets and assessments added in the coming months and years.

Feedback is always welcome. Ted Burch - support@mathsframe.co.uk 17/9/16

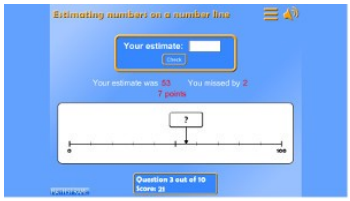
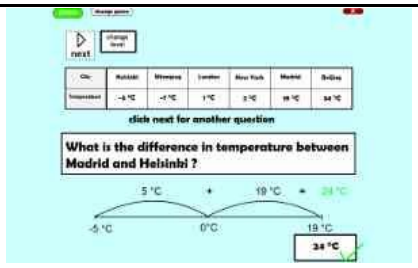
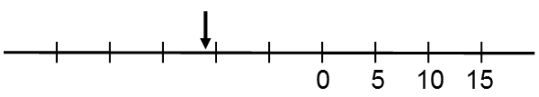
5.1 Number and Place Value

Q	Answer	Marks	Useful games and worksheets
1	3,008 72,050 104,602 430,071 (commas are needed for marks - as per 2016 SATs)	1 each	http://mathsframe.co.uk/en/resources/category/394 lots of games and worksheets to practise reading numbers 
2	twenty-four thousand and seventy four hundred and seven thousand, six hundred and one	1 each	
3	39,990 199,900 999,000	1 each	
4	699,997	1	
5	30,000	1 each	
6	A - 500,000 B - 300,000 C - 950,000 (within 10,000) D - 70,000 (within 10,000)	1 each	I love number lines and there are loads on my website (plus worksheets that have further practice) http://mathsframe.co.uk/en/resources/category/10/
7	D, B, C, A, E	1 mark	

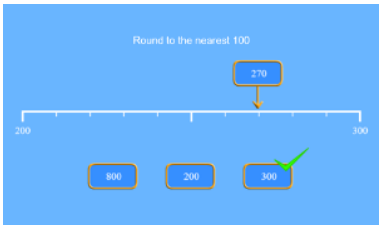
Answers

5.1

5.1 Number and Place Value (continued)

Q	Answer	Marks	Useful games and worksheets
8	2,500 675,000	1 each	http://mathsframe.co.uk/en/resources/resource/265/Estimate_Number_Line 
9	126,086 800,318 198,195	1 each	
10	42,300 658,157	1 each	
11	5 °C 17 °C 34 °C -4 °C 3 °C	1 each	 http://mathsframe.co.uk/en/resources/resource/52/temperature__word_problems_
12	-3 -2 15	1 each	Lots of sequencing games on the website - also using negative numbers on my many number line games is a useful way to get children to understand this skill
13	-25 	2 marks	

5.1 Number and Place Value (continued)

Q	Answer	Marks	Useful games and worksheets
14	452 and 547	1 mark for both correct	There are loads of games on the website to practise rounding http://mathsframe.co.uk/en/resources/category/353/Y6_round_any_whole_number_to_a_required_degree_of_accuracy  
15	8000 35,000 135,000	1 mark each	
16	425,500 425,000 430,000 400,000	1 mark each	
17	94,999		

Answers

5.1

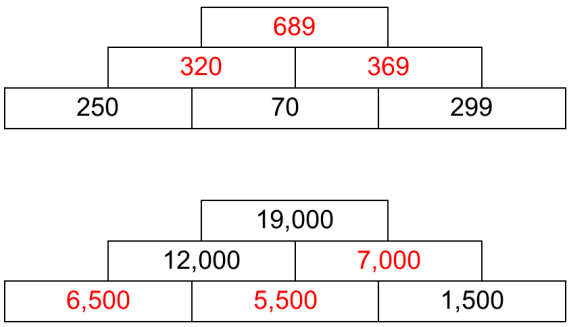
5.1 Number and Place Value (continued)

Q	Answer	Marks	Useful games and worksheets
18	26 211 165 2016	1 mark each	There are lots of games and worksheets on the website to practise reading Roman Numerals http://mathsframe.co.uk/en/resources/category/571/Read_Roman_numerals
19	XXIII CLXI MMIV MCMLXXX	1 mark each	
20	MCMM is not a number	1 mark each	

Answers

5.1

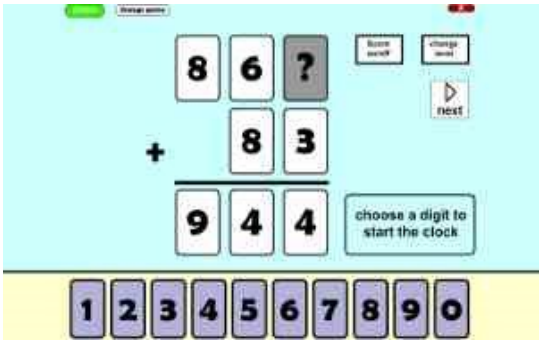
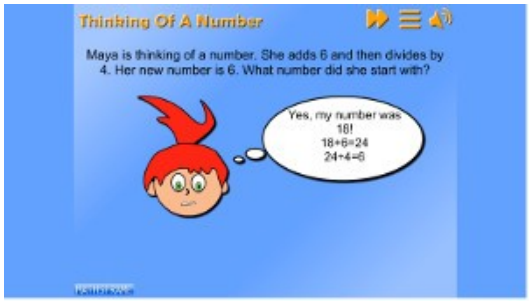
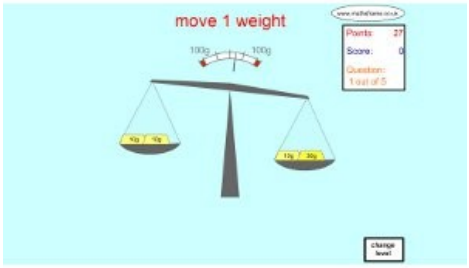
5.1 Addition and Subtraction

Q	Answer	Marks	Useful games and worksheets
1	4,500 3,300	1 each	
2	3,999 3,005 69,300 14,524	1 each	
3	 	1 each	
4	35,000 137,000 650	1 each	

Answers

5.1

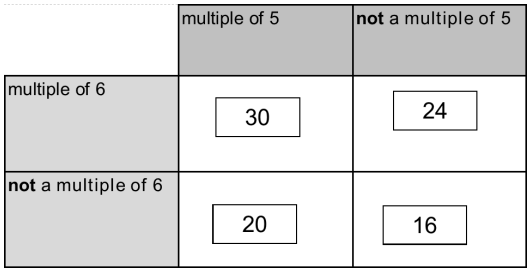
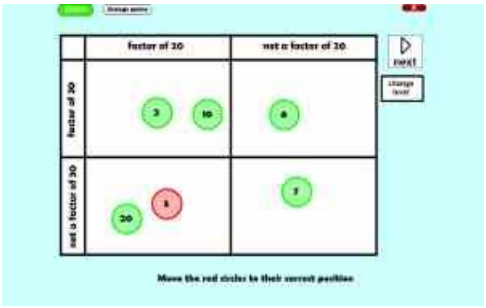
5.1 Addition and Subtraction (continued)

<table>
<tr><th>Q</th><th>Answer</th><th>Marks</th><th>Useful games and worksheets</th></tr>
<tr><td>5</td><td>50,009
(1 mark if there is only one calculation error)</td><td>2 marks</td><td rowspan="3">http://mathsframe.co.uk/en/resources/category/399
interactive games and worksheets to teach formal methods of addition and subtraction
  </td></tr>
<tr><td>6</td><td>33,033
(1 mark if there is only one calculation error)</td><td>2 marks</td></tr>
<tr><td>7</td><td>4,883
(1 mark if there is only one calculation error)</td><td>2 marks</td></tr>
<tr><td>8</td><td>cost - £2.65 + 80p + £1.10 = £4.55
change - £10 - £4.55 = £5.45
(1 mark if there is only one calculation error and correct method)</td><td>1 each</td><td rowspan="3">http://mathsframe.co.uk/en/resources/category/402
Worksheets and games to help teach problem solving to children in Year 5
 
  </td></tr>
<tr><td>9</td><td><table><tr><th></th><th>boys</th><th>girls</th><th>Total</th></tr><tr><td>cricket</td><td>62</td><td>43</td><td>105</td></tr><tr><td>basket-</td><td>29</td><td>51</td><td>80</td></tr><tr><td>Total</td><td>91</td><td>94</td><td>185</td></tr></table></td><td>3 marks
(1 off for each mistake)</td></tr>
<tr><td>10</td><td>38,453
(1 mark if there is only one calculation error and correct method)
107,102
(1 mark if there is only one calculation error and correct method)</td><td>2 marks each</td></tr>
</table>

Answers

5.1

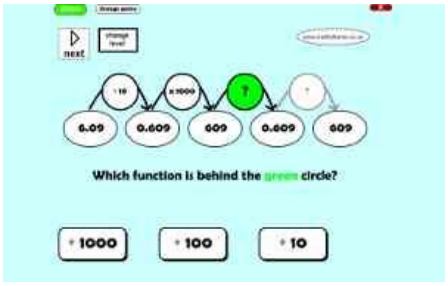
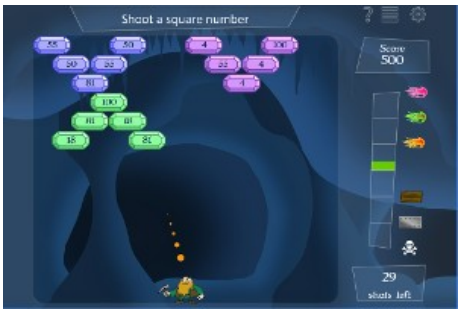
5.1 Multiplication and Division

Q	Answer	Marks	Useful games and worksheets
1		2 marks for all 1 mark for 3 out of 4	Lots of games and worksheets to teach multiples and factors http://mathsframe.co.uk/en/resources/category/404 
2	1 and 32 2 and 16 4 and 8	2 marks for all 1 mark for one error	
3	160, 880 and 320	2 marks 1 mark if one error	
4	1,2,3 and 6	2 marks 1 mark if one error	
5	42 = 7 x 3 x 2 (order not important)	2 marks 1 mark if one error	Lots of games and worksheets to teach prime numbers http://mathsframe.co.uk/en/resources/category/407 
6	15 - not prime, not even 16 - not prime, even 17 - prime, not even	2 marks 1 mark if one error	
7	13 and 3	1 mark	
8	61 and 67	2 marks 1 mark if one error	

Answers

5.1

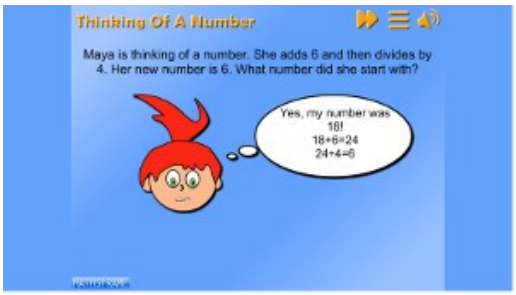
5.1 Multiplication and Division (continued)

Q	Answer	Marks	Useful games and worksheets
9	42 x 100 = 4,200 4.2 ÷10 = 0.42 42 ÷1000 = 0.42 4.2 x 1000 = 4,200	2 marks 1 if only one mistake	http://mathsframe.co.uk/en/resources/category/411 interactive games and worksheets to teach multiplying and dividing decimals by 10, 100, 1000
10	307 ÷ 100 = 3.07 60.18 x 10 = 601.8 32.06 x 10 = 320.6 1900 ÷19 = 100	2 marks 1 if only one mistake	
11	5^2 = 5 x 5 4^3= 4 x 4 x 4	1 mark each	http://mathsframe.co.uk/en/resources/category/412 games and worksheets to teach square and cube numbers
12	41	1 mark	
13	144 square meters	1 mark	
14	8	1 mark	

Answers

5.1

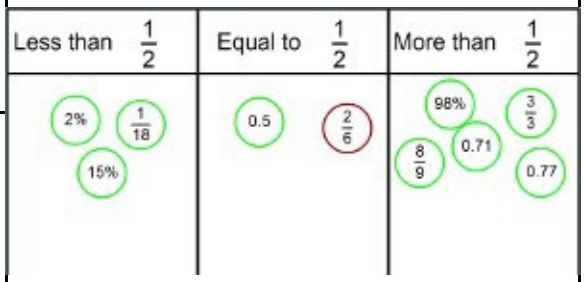
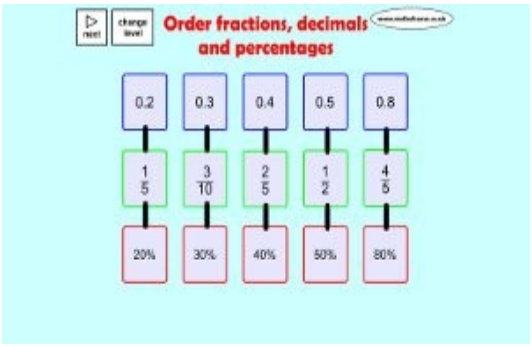
5.1 Multiplication and Division (continued)

Q	Answer	Marks	Useful games and worksheets
15	132 x 6 = 792 1 mark for one calculation error and correct method	2 marks	http://mathsframe.co.uk/en/resources/category/413/ Lots of problems involving addition, subtraction, multiplication and division  
16	507x 24 = 12,168 1 mark for one calculation error and correct method	2 marks	
17	2608 ÷ 8 = 326 1 mark for one calculation error and correct method	2 marks	
18	853 ÷ 6 = 142 r1 (requires rounding down to **142 boxes filled**) 1 mark for one calculation error and correct method (must have correct rounding)	2 marks	
19	Cheddar - 72p x 4 = £2.88 Swiss - 64p x 1.5 = 96p Total cost - 2.88 + 0.96 = £3.84 Change - £10 - £3.84 = £6.16 1 mark off for each calculation error, must have correct method	3 marks	
20	= < < = >		

Answers

5.1

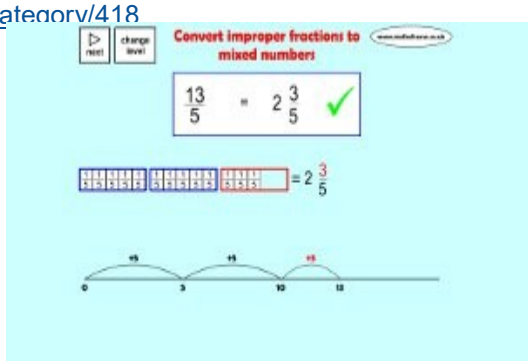
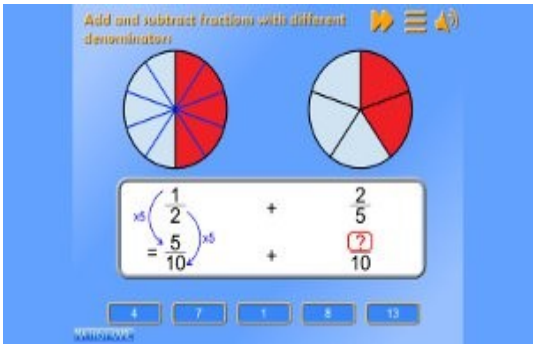
5.1 Number – fractions (including decimals and percentages)

Q	Answer	Marks	Useful games and worksheets
1	2/3 3/10 1/3 4/5	2 for all correct, 1 if only 1 error	http://mathsframe.co.uk/en/resources/category/417 lots of games to practise comparing and ordering fractions  
2	= > < = > >	1 each	
3	1/8, 1/4, 1/2, 3/4	2 for all correct, 1 if only 1 mistake	
4	the line is marked with tenths, so: 1/10 1/5 = 2/10 70/100 = 7/10 1/2 = 5/ 10	1	
5	2/6 = 1/3 4/9 - more than 1/3 9/30 - less than 1/3	1 each	

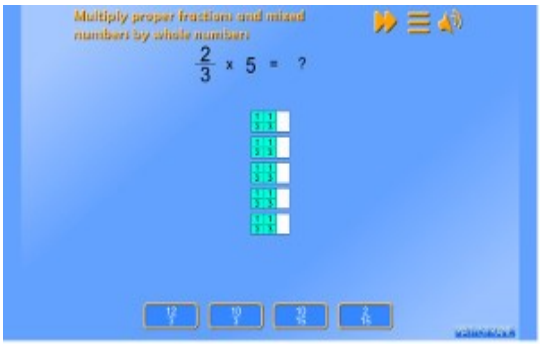
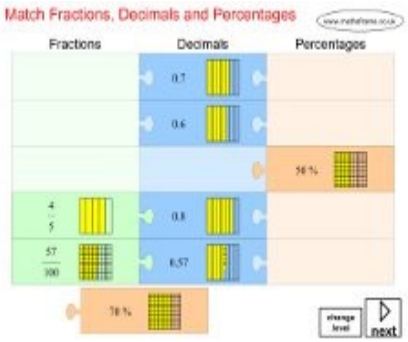
Answers

5.1

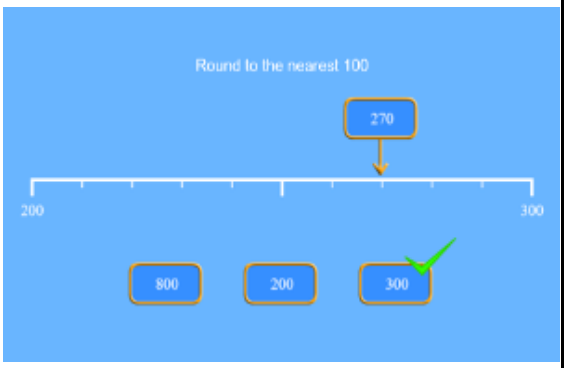
5.1 Number – fractions (including decimals and percentages)

Q	Answer	Marks	Useful games and worksheets
6	7/4 = 1 3/4 7/5 = 1 2/5 9/2 = 4 1/2 13/10 = 1 3/10	1 each	http://mathsframe.co.uk/en/resources/category/418  This is a really useful game to 'see' the conversion between improper fractions and mixed numbers. There are also lots of games to practise the skill.  Use this game to help children see the need to convert to the same denominator
7	1 1/3 1 3/10 3 3/4	1 each	
8	7/10 3/10 3/10 3/100	1 each	
9	1/3 + 1/6 = 2/6 + 1/6 = 3/6 so half eaten, half left	2 marks for correct answer, 1 if correct method with one calc. error	

5.1 Number – fractions (including decimals and percentages)

Q	Answer	Marks	Useful games and worksheets
10	6/5 = 1 1/5 10/3 = 3 1/3 36/10 = 3 6/10 (or 3 3/5)	1 each	http://mathsframe.co.uk/en/resources/category/420  shows the multiplication of fractions, followed by conversion of improper fractions to mixed numbers http://mathsframe.co.uk/en/resources/category/422 
11	0.04 0.009 0.23 0.345 1.08	1 each	
12	0.395		
13	0.37 0.46 0.23 3.85 2.59	1 each	

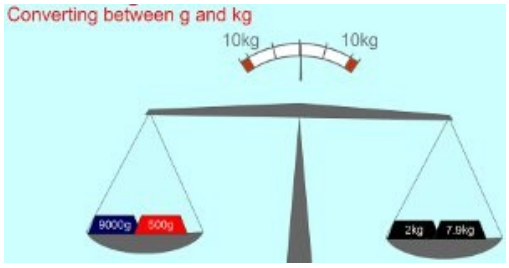
5.1 Number – fractions (including decimals and percentages)

Q	Answer	Marks	Useful games and worksheets
14	5.29 4.507	1 each	http://mathsframe.co.uk/en/resources/category/424
15	3.8 2.1 4.6	1 each	
16	40% 8% 17% 90%		http://mathsframe.co.uk/en/resources/category/429
17	1/4 = 0.25 = 25% 1/5 = 0.2 = 20% 2/5 = 0.4 = 40% 2/50 = 0.04 = 4%		 There are lots of games to practise converting fractions to decimals.

Answers

5.1

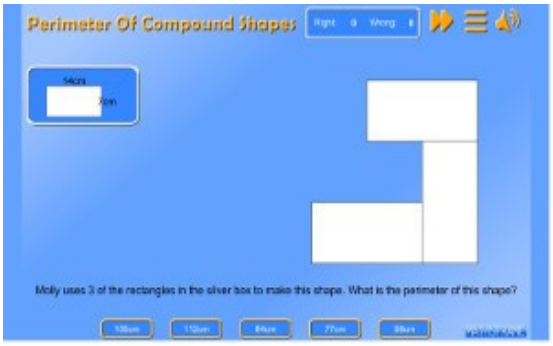
5.1 Measurement

Q	Answer	Marks	Useful games and worksheets
1	300ml	1	http://mathsframe.co.uk/en/resources/category/431  
2	36cm	2 for correct answer, 1 if calc error with correct method	
3	250g	1	
4	4.02m 1500m 8.3cm 6200m 2050ml	1 each	
5	5 laps = 2000m = 2km	2 for correct answer, 1 if calc error with correct method	

Answers

5.1

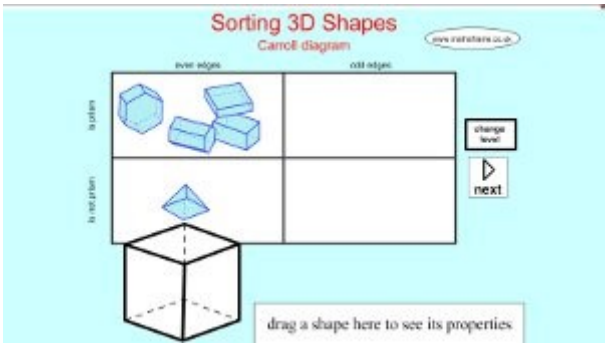
5.1 Measurement

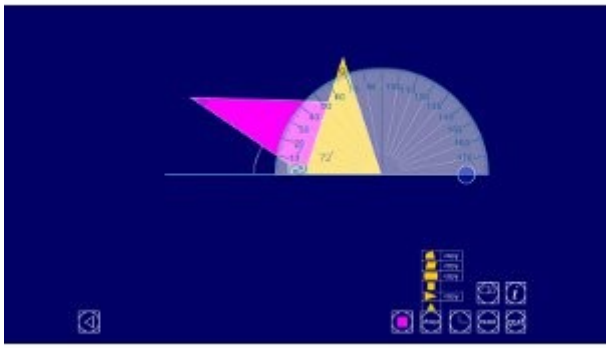
Q	Answer	Marks	Useful games and worksheets
6	6.6 pounds	1	
7	560ml (within 10ml) 280ml (within 10ml) 1.25 or 1 1/4 pints	1 each	
8	A and D (14cm) 13 square cm	1	http://mathsframe.co.uk/en/resources/category/433
9	2.5cm	1	
10	length = 11cm, so perimeter = 26 cm	1	
11	32 cm	1	
12	24 x 7 x 3	1	
13	48 hours 14 days 35 days 240 minutes	1 each	

Answers

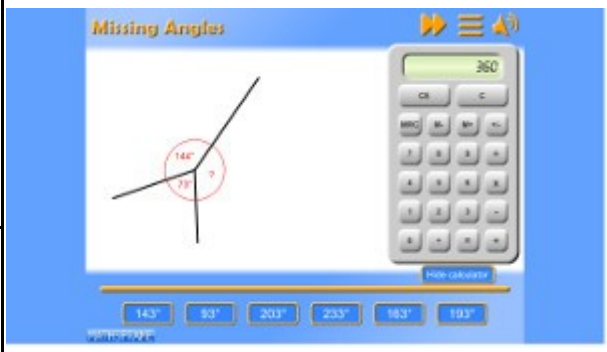
5.1

5.1 Geometry - Properties of shapes

<table>
<tr><td>Q</td><td>Answer</td><td>Useful games and worksheets</td></tr>
<tr><td>1</td><td>
<table>
<tr><th></th><th>Number of faces</th><th>Number of edges</th><th>Number of vertices</th><th>Name of shape</th></tr>
<tr><td>Shape A</td><td>6</td><td>12</td><td>8</td><td>cuboid</td></tr>
<tr><td>Shape B</td><td>7</td><td>15</td><td>10</td><td>pentagonal prism</td></tr>
<tr><td>Shape C</td><td>5</td><td>8</td><td>5</td><td>square based pyramid</td></tr>
<tr><td>Shape D</td><td>5</td><td>9</td><td>6</td><td>triangular prism</td></tr>
</table>
3 marks for all correct, 1 mark lost for each mistake
</td><td>http://mathsframe.co.uk/en/resources/category/438
 

A great game to explore the properties of 3d shapes.</td></tr>
<tr><td>2</td><td>90
90 180
180
(1 mark for each correct line)</td><td>http://mathsframe.co.uk/en/resources/category/440/
interactives and worksheets for measuring angles
  </td></tr>
<tr><td>3</td><td>3 acute angles - B, C and D (1 mark)
2 obtuse angles - A (1 mark)
a reflex angle - B and D (1 mark)</td><td></td></tr>
<tr><td>4</td><td>accept 24° to 26° (1 mark)
accept 142° to 144° (1 mark)
accept 73° to 75° (1 mark)</td><td></td></tr>
<tr><td>5</td><td>Accept an angle 31° and 33° (1 mark)</td><td></td></tr>
</table>

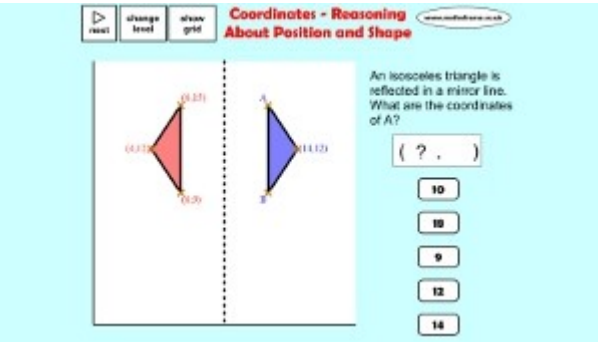
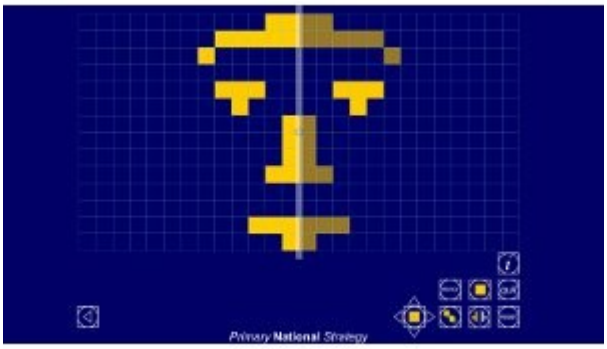
5.1 Geometry - Properties of shapes

Q	Answer	Useful games and worksheets
6a	45°(1 mark)	http://mathsframe.co.uk/en/resources/category/441  An interactive game to find missing angles in shapes, on straight lines, around a point etc.
6b	360 - (160 + 115) = 85°(2 marks) 1 mark for one calculation error and correct method	
7	4cm (1 mark)	
8	3cm (1 mark)	
9	38°(1 mark)	
10	Accept any answer which mentions that the angles need to be the same size for it to be a regular shape.	

Answers

5.1

5.1 Geometry - Position and Direction

Q	Answer	Useful games and worksheets
1	2 marks for correct translation, 1 mark if only one mistake	http://mathsframe.co.uk/en/resources/category/446  Find the missing coordinates in shapes that have been translated and reflected in a mirror line.
2	2 marks for correct reflection, 1 mark if only one mistake	
3	5 right and 2 down (1 mark for each)	
4	A = (9, 7) B = (12,3) (1 mark each)	
5	A = (11,6) B = (12, 9) C = (9, 9)	

Answers

5.1

5.1 Statistics

Q	Answer	Useful games and worksheets
1	39 (1 mark) Any answer that shows an understanding that: 25 children (19+6) left after 8:40 and that 25 is 1/4 of 100 (1 mark)	http://mathsframe.co.uk/en/resources/category/447
2	12:59 (1 mark) 47 minutes (1 mark) 11:32 (1 mark) Wroxton (1 mark)	
3	12,901 (1 mark) 34,890 - 32,991 = 1,899 (2 marks if correct, 1 if only one calculation error and correct method) Paignton (1 mark)	
4	18 °C (1 mark) 5 °C (1 mark) 15:30 (accept 15:20 to 15:40) (1 mark)	
5	25m (1 mark) accept 42m to 43m (1 mark) accept 25 to 27 seconds (1 mark)	