

# Year 6 SATs 'Greater Depth' Pack 3 Answers

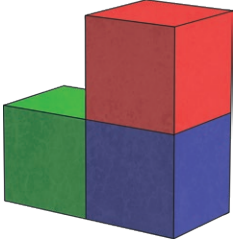
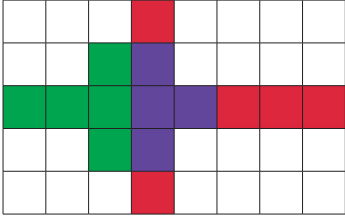
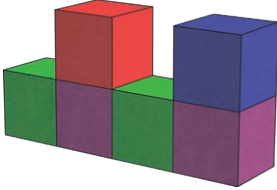
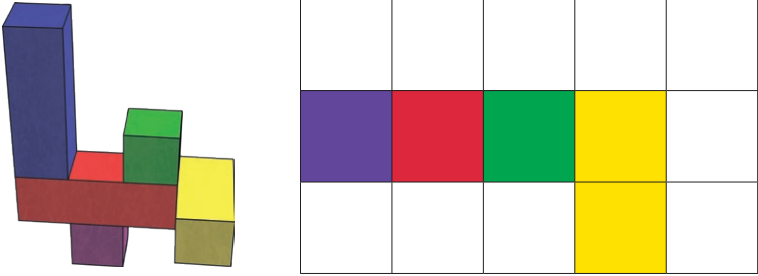
<p><b>Activity 1.1</b> <b>Talk Maths</b></p>	<p>The Roman numerals written in figures are:            MMII = <b>2,002</b>            MCMLXXXIII = <b>1,983</b>            MMX = <b>2,010</b>            MCMXCIX = <b>1,999</b>            MMXIX = <b>2,019</b>            MMXXIV = <b>2,024</b></p>										
<p><b>Activity 1.2</b> <b>Guided Maths</b></p>	<p>1. The Roman numerals in order from smallest to greatest are:</p> <table border="1" data-bbox="405 607 1396 734"> <tbody> <tr> <td>CCXXXIX</td> <td>CCXLVI</td> <td>CCLV</td> <td>CCLIX</td> <td>CDXI</td> </tr> <tr> <td><b>239</b></td> <td><b>246</b></td> <td><b>255</b></td> <td><b>259</b></td> <td><b>411</b></td> </tr> </tbody> </table> <p>2. CCLIV (254) &lt; 256            MMXI (2011) = 2,011            DCCCLII (852) &gt; 842</p> <p>3. <b>2015</b></p>	CCXXXIX	CCXLVI	CCLV	CCLIX	CDXI	<b>239</b>	<b>246</b>	<b>255</b>	<b>259</b>	<b>411</b>
CCXXXIX	CCXLVI	CCLV	CCLIX	CDXI							
<b>239</b>	<b>246</b>	<b>255</b>	<b>259</b>	<b>411</b>							
<p><b>Activity 1.3</b> <b>Independent Maths</b></p>	<p>1. The Roman numerals in order from smallest to greatest are:</p> <table border="1" data-bbox="405 1059 1433 1209"> <tbody> <tr> <td>CCCXXXVI</td> <td>CCCXLI</td> <td>CCCXLIX</td> <td>CCCLXXIV</td> <td>CDIX</td> </tr> <tr> <td><b>336</b></td> <td><b>341</b></td> <td><b>349</b></td> <td><b>374</b></td> <td><b>409</b></td> </tr> </tbody> </table> <p>2. CDLXX (470) &lt; 484            DCLVI (656) &gt; 646            DCCXI (711) = 711</p> <p>3. <b>1924</b></p>	CCCXXXVI	CCCXLI	CCCXLIX	CCCLXXIV	CDIX	<b>336</b>	<b>341</b>	<b>349</b>	<b>374</b>	<b>409</b>
CCCXXXVI	CCCXLI	CCCXLIX	CCCLXXIV	CDIX							
<b>336</b>	<b>341</b>	<b>349</b>	<b>374</b>	<b>409</b>							
<p><b>Assess and Review 1.4</b></p>	<p>Encourage the children to notice that the child answering the question has written the 700 and 9 in Roman numerals incorrectly as more than three of the same symbols should not be put together. The correct answer is <b>DCCCLIX</b>.</p>										
<p><b>Activity 2.1</b> <b>Talk Maths</b></p>	<p>1. Six night-vision cameras = <b>£61.84 x 6 = £371.04</b></p> <p>2. Seven pairs of x-ray specs = <b>£15.08 x 7 = £105.56</b></p> <p>3. Nine pairs of super-speed boots = <b>£49.99 x 9 = £449.91</b></p>										

<b>Activity 2.2</b> <b>Guided Maths</b>	1. $\frac{1}{4} = (£1.20 + £2.45) = £3.65$ $\frac{4}{4} = £3.65 \times 4 = £14.60$ 2. $83 \times (36 \times 8) = 83 \times 288 = 23,904$ oranges 3. $(74p \times 3) + £2.58 = £2.22 + £2.58 = £4.80$
<b>Activity 2.3</b> <b>Independent Maths</b>	1. $\frac{1}{5} = (£1.15 + £2.37) = £3.52$ $\frac{5}{5} = £3.52 \times 5 = £17.60$ 2. $67 \times (29 \times 6) = 67 \times 174 = 11,658$ oranges 3. $(87p \times 3) + £3.83 = £2.61 + £3.83 = £6.44$
<b>Assess and Review 2.4</b>	Encourage the children to notice that the child answering the question hasn't included the 60 extra stickers she was given by her friend into her calculation. The correct calculation would be $(28 \times 12) + 60 = 396$ . $396 \div 9 = 44$ pages.

<b>Activity 3.1</b> <b>Talk Maths</b>	The matching equivalents are: <b>37.5% and <math>\frac{3}{8}</math></b> <b>9% and 0.09</b> <b><math>\frac{2}{5}</math> and 40%</b> <b>0.84 and <math>\frac{21}{25}</math></b> The missing equivalents for each pair are: <b>0.375</b> <b><math>\frac{9}{100}</math></b> <b>0.4</b> <b>84%</b> The equivalents in order from smallest to greatest are: <b>9%/0.09</b> <b>37.5%/ <math>\frac{3}{8}</math></b> <b><math>\frac{2}{5}</math> /40%</b> <b>0.84/ <math>\frac{21}{25}</math></b>												
<b>Activity 3.2</b> <b>Guided Maths</b>	1. The greatest number in each row is: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 5px;"><math>1\frac{3}{5}</math></td> <td style="text-align: center; padding: 5px;">1.55</td> <td style="padding: 5px;">(1.6 and 1.55)</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><math>1\frac{2}{3}</math></td> <td style="text-align: center; padding: 5px;">1.6</td> <td style="padding: 5px;">(1.66 and 1.6)</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><math>1\frac{19}{100}</math></td> <td style="text-align: center; padding: 5px;"><b>1.9</b></td> <td style="padding: 5px;">(1.19 and 1.9)</td> </tr> <tr> <td style="text-align: center; padding: 5px;"><math>1\frac{7}{10}</math></td> <td style="text-align: center; padding: 5px;">1.67</td> <td style="padding: 5px;">(1.7 and 1.67)</td> </tr> </table> 2. 10% of the animals are hamsters, 60% of the animals are cats, so 30% of the animals are dogs.	$1\frac{3}{5}$	1.55	(1.6 and 1.55)	$1\frac{2}{3}$	1.6	(1.66 and 1.6)	$1\frac{19}{100}$	<b>1.9</b>	(1.19 and 1.9)	$1\frac{7}{10}$	1.67	(1.7 and 1.67)
$1\frac{3}{5}$	1.55	(1.6 and 1.55)											
$1\frac{2}{3}$	1.6	(1.66 and 1.6)											
$1\frac{19}{100}$	<b>1.9</b>	(1.19 and 1.9)											
$1\frac{7}{10}$	1.67	(1.7 and 1.67)											

<b>Activity 3.3</b> <b>Independent Maths</b>	1. The greatest number in each row is:			
	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"><math>1\frac{4}{5}</math></td> <td style="text-align: center;"><b>1.81</b></td> <td style="text-align: right;">(1.8 and 1.81)</td> </tr> </table>	$1\frac{4}{5}$	<b>1.81</b>	(1.8 and 1.81)
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	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"><math>1\frac{1}{3}</math></td> <td style="text-align: center;"><b>1.4</b></td> <td style="text-align: right;">(1.33 and 1.4)</td> </tr> </table>	$1\frac{1}{3}$	<b>1.4</b>	(1.33 and 1.4)
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<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"><b><math>1\frac{23}{100}</math></b></td> <td style="text-align: center;">1.2</td> <td style="text-align: right;">(1.23 and 1.2)</td> </tr> </table>	<b><math>1\frac{23}{100}</math></b>	1.2	(1.23 and 1.2)	
<b><math>1\frac{23}{100}</math></b>	1.2	(1.23 and 1.2)		
	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;"><b><math>1\frac{2}{10}</math></b></td> <td style="text-align: center;">1.18</td> <td style="text-align: right;">(1.2 and 1.18)</td> </tr> </table>	<b><math>1\frac{2}{10}</math></b>	1.18	(1.2 and 1.18)
<b><math>1\frac{2}{10}</math></b>	1.18	(1.2 and 1.18)		
	2. 25% of the animals are hamsters, 12.5% of the animals are cats, so 62.5% of the animals are dogs.			
<b>Assess and Review 3.4</b>	Discuss that the first step in answering this question is to calculate the answers to the decimal additions, which are 0.69, 0.9 and 1.19. Encourage the children to notice that the child answering the question has correctly matched 0.9 and $\frac{9}{10}$ but has incorrectly matched the two other calculations. 0.69 should match to 69% and 1.19 should match to $1\frac{19}{100}$ .			

<b>Activity 4.1</b> <b>Talk Maths</b>	During this task, encourage the children to talk about the 3D shape using the following properties:			
	3D Shape	Faces	Number of Edges	Number of Vertices
	Sphere	0 (1 curved surface)	0	0
	Cube (polyhedron and platonic solid)	6 square faces	12	8
	Cuboid (polyhedron)	6 rectangular faces	12	8
	Tetrahedron (polyhedron and platonic solid)	4 triangular faces	6	4
	Octahedron (polyhedron and platonic solid)	8 triangular faces	12	6
	Cone	1 circular face and 1 curved surface	1 curved edge	0 (1 apex)
	Cylinder (not a prism because it has a curved surface)	2 circular faces and 1 curved surface	2 curved edges	0
	Square-based pyramid (polyhedron)	1 square face and 4 triangular faces	8	5
Triangular prism (polyhedron)	2 triangular faces and 3 rectangular faces	9	6	

<p><b>Activity 4.2</b> Guided Maths</p>	<p>1. The shape has 8 faces.</p>  <p>2. The net should correctly complete the shape, for example:</p> 
<p><b>Activity 4.3</b> Independent Maths</p>	<p>1. The shape has 12 faces.</p>  <p>2. The boxes should be coloured as:</p> 
<p><b>Assess and Review 4.4</b></p>	<p>Encourage the children to notice that the child answering the question incorrectly counted 10 edges for an octahedron; an octahedron has 12 edges. Therefore, an octahedron has 12 fewer edges than an octagonal prism.</p>

<p><b>Activity 5.1</b> Talk Maths</p>	<p>While playing the game, encourage the children to explain how they can calculate the time durations. Address any misconceptions as they arise.</p>
<p><b>Activity 5.2</b> Guided Maths</p>	<p>1. <b>Ugo caught the gem thief at 17:23.</b> 2. <b>1 hour 54 minutes of running.</b></p>
<p><b>Activity 5.3</b> Independent Maths</p>	<p>1. <b>Ugo caught the gem thief at 17:06.</b> 2. <b>2 hour 13 minutes of gadget practice.</b></p>
<p><b>Assess and Review 5.4</b></p>	<p>Encourage the children to notice that the child answering the question has incorrectly used the method of long multiplication to calculate <math>35 \times 60</math>. The correct answer is 2,100 seconds.</p>