

# 3D Shapes - Answers

## Key Stage 2: 2005 Paper B

1.

<b>7</b>	<p>Award <b>TWO</b> marks for table completed correctly as shown:</p> <table border="1"> <thead> <tr> <th></th> <th>number of flat surfaces</th> <th>number of curved surfaces</th> </tr> </thead> <tbody> <tr> <td>sphere</td> <td style="text-align: center;"><b>0</b></td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td>cone</td> <td style="text-align: center;"><b>1</b></td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td>cuboid</td> <td style="text-align: center;"><b>6</b></td> <td style="text-align: center;"><b>0</b></td> </tr> <tr> <td>cylinder</td> <td style="text-align: center;"><b>2</b></td> <td style="text-align: center;"><b>1</b></td> </tr> </tbody> </table> <p>If the answer is incorrect, award <b>ONE</b> mark for two out of three rows completed correctly.</p>		number of flat surfaces	number of curved surfaces	sphere	<b>0</b>	<b>1</b>	cone	<b>1</b>	<b>1</b>	cuboid	<b>6</b>	<b>0</b>	cylinder	<b>2</b>	<b>1</b>	<b>Up to 2m</b>	<i>Accept a blank box for '0'.</i>
	number of flat surfaces	number of curved surfaces																
sphere	<b>0</b>	<b>1</b>																
cone	<b>1</b>	<b>1</b>																
cuboid	<b>6</b>	<b>0</b>																
cylinder	<b>2</b>	<b>1</b>																

## Key Stage 2: 2012 Paper A L6

1.

<b>10a</b>	<p>Gives three integers other than 2, 2, 6 (in any order) whose product is 24, eg:</p> <ul style="list-style-type: none"> <li>• 1, 1, 24</li> <li>• 1, 24, 1</li> <li>• 1, 2, 12</li> <li>• 1, 3, 8</li> <li>• 1, 4, 6</li> <li>• 2, 3, 4</li> </ul>	<b>1m</b>	<p><b>!</b> <i>Non-integer(s) used</i></p> <p>As this shows understanding of volume, condone provided the three values given have a product of 24 eg, accept</p> <ul style="list-style-type: none"> <li>• 1.5, 2, 8</li> </ul>
<b>10b</b>	7	<b>1m</b>	

## Key Stage 2: 2012 Paper A

1.

<b>20a</b>	8	<b>1m</b>	
<b>20b</b>	14	<b>1m</b>	<p>If the answer to 20a is 14 <b>AND</b> the answer to 20b is 8, then award <b>ONE</b> mark for 20b.</p>
		<div style="border: 1px solid black; border-radius: 50%; width: 20px; height: 20px; display: flex; align-items: center; justify-content: center;">             U1           </div>	

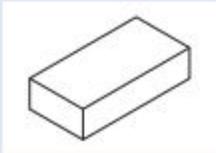
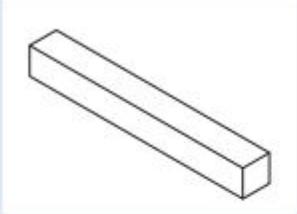
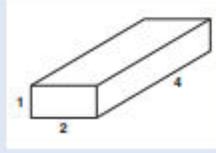
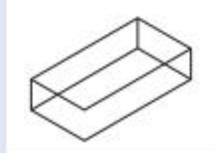
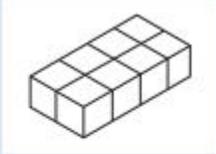
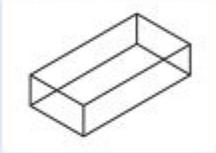
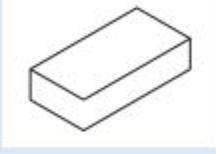
Key Stage 2: 2012 Paper B

1.

<b>14</b>	Triangular prism	<b>1m</b>	Accept recognisable misspellings. Accept prism.
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Key Stage 2: 2013 Paper A L6

1.

<b>13</b>	<p>Draws a cuboid with a height of 1cm and a volume of <math>8\text{cm}^3</math> in any orientation, using the isometric grid, eg:</p> <ul style="list-style-type: none"> <li></li> <li></li> </ul> <p>Draws a cuboid with unambiguous indication of the correct dimensions, but the only error is not to use the isometric grid correctly or omits an external line and/or includes some hidden lines, eg:</p> <ul style="list-style-type: none"> <li></li> <li></li> </ul>	<b>2m</b>	<p>✓ <b>Lines not ruled or accurate</b> Accept slight inaccuracies in drawing</p> <p>! <b>Extended lines</b> For 2m or 1m, condone</p> <p>! <b>Internal lines drawn</b> Ignore, eg:</p>  <p>! <b>Hidden lines drawn</b> Do not accept for 2m, unless hidden lines are dotted or otherwise shown as hidden. Accept hidden lines for 1m, eg:</p>  <p>or</p> <p>! <b>An external line omitted</b> Do not accept for 2m. Accept for 1m if intended shape is clear, eg:</p>  <p><b>1m</b></p> <p>! <b>Ignore incomplete drawings</b></p> <p>! <b>Vertices not at dots</b> Do not accept for 2m, but accept for 1m</p>
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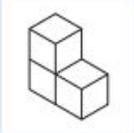
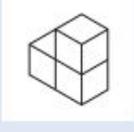
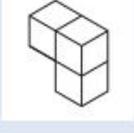
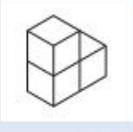
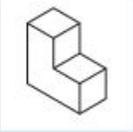
Key Stage 2: 2014 Paper A L6

1.

<b>9</b>	8 faces and 12 edges	<b>1m</b>	
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Key Stage 2: 2015 Paper A L6

1.

<b>8</b>	<p>Draws a correct view of the new cuboid using the isometric grid, eg:</p> <ul style="list-style-type: none"> <li>• </li> <li>• </li> <li>• </li> <li>• </li> </ul>	<b>1m</b>	<ul style="list-style-type: none"> <li>✓ <b>Lines not ruled or accurate</b> Accept slight inaccuracies in drawing</li> <li>✓ <b>Alternative orientation, eg:</b> <ul style="list-style-type: none"> <li>• </li> </ul> </li> <li>✓ <b>Some or all internal lines omitted, eg:</b> <ul style="list-style-type: none"> <li>• </li> </ul> </li> <li>! <b>Some or all hidden lines drawn</b> Do not accept unless hidden lines are dotted or otherwise shown as hidden</li> <li>! <b>Extended edges</b> Condone</li> <li>! <b>Ignore incomplete drawings</b></li> <li>X <b>External lines omitted</b></li> </ul>
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Key Stage 2: 2015 Paper B L6

1.

<b>6</b>	<p>18</p> <p>1728 seen (<i>the volume of the cube/cuboid</i>)</p> <p><b>OR</b></p> <p>Shows or implies a complete correct method, eg:</p> <ul style="list-style-type: none"> <li>• <math>12 \times 12 \times 12 = 1440</math> (<i>error</i>) <math>1440 = 16 \times 6 \times \text{height}</math> <math>\text{height} = 1440 \div (16 \times 6) = 15</math></li> <li>• <math>12 \times 12 \times 12 \div 16 \div 6</math></li> </ul>	<p><b>2m</b></p> <p><b>or</b></p> <p><b>1m</b></p>	<p>! <b>Measures</b> See guidance (page 7)</p>
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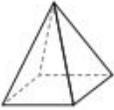
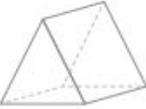
Key Stage 2: 2015 Paper A

1.

22	38	1m
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Key Stage 2: 2017 Paper 2 Reasoning

1.

<b>12</b>	<p>Award <b>TWO</b> marks for both pyramids ticked as shown:</p> <p> Cube <input type="checkbox"/></p> <p> Square-based pyramid <input checked="" type="checkbox"/></p> <p> Triangular prism <input type="checkbox"/></p> <p> Triangular-based pyramid <input checked="" type="checkbox"/></p> <p>If the answer is incorrect, award <b>ONE</b> mark for:</p> <ul style="list-style-type: none"><li>the two pyramids and not more than one incorrect shape ticked</li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>only one correct shape ticked and no incorrect shape ticked.</li></ul>	<b>Up to 2m</b>	Accept alternative unambiguous positive indications, e.g. Y.
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Key Stage 2: 2017 Paper 3 Reasoning

1.

<b>24</b>	<p>Award <b>TWO</b> marks for the correct answer of 9</p> <p>If the answer is incorrect, award <b>ONE</b> mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none"> <li>• <math>6 \times 6 \times 6 = 216</math>  <math>216 \div 6 = 36</math>  <math>36 \div 4</math></li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>• <math>216 \div 24</math></li> </ul>	<b>Up to 2m</b>	<p>Answer need not be obtained for the award of <b>ONE</b> mark.</p>
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Key Stage 2: 2018 Paper 2 Reasoning

1.

<b>11</b>	<p>Award <b>TWO</b> marks for the table completed, as shown:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="background-color: #d9e1f2;">Number of faces</th> <th style="background-color: #d9e1f2;">Number of vertices</th> <th style="background-color: #d9e1f2;">Number of edges</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><b>6</b></td> <td style="text-align: center;"><b>8</b></td> <td style="text-align: center;"><b>12</b></td> </tr> </tbody> </table> <p>Award <b>ONE</b> mark for two correct numbers, correctly placed.</p>	Number of faces	Number of vertices	Number of edges	<b>6</b>	<b>8</b>	<b>12</b>	<b>Up to 2m</b>	
Number of faces	Number of vertices	Number of edges							
<b>6</b>	<b>8</b>	<b>12</b>							

Key Stage 2: 2019 Paper 2 Reasoning

1.

<b>23</b>	<p>Award <b>TWO</b> marks for the correct answer of 720</p> <p>If the answer is incorrect, award <b>ONE</b> mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none"> <li>• <math>3 \times 4 \times 6 = 72</math>  <math>8 \times 9 \times 11 = 792</math>  <math>792 - 72 =</math></li> </ul> <p>Award <b>ONE</b> mark for sight of 792</p>	<b>Up to 2m</b>	<p>Answer need not be obtained for the award of <b>ONE</b> mark.</p>
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