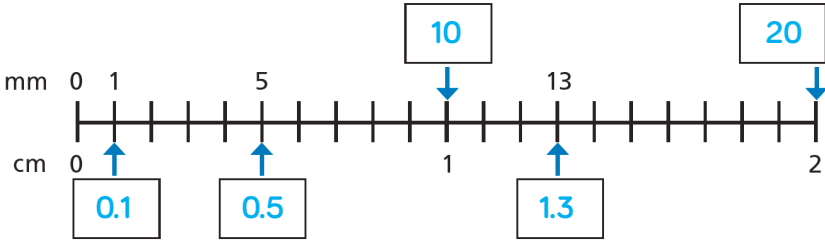


Y6 – Spring – Block 4 – Step 1 – Metric measures Answers

| Question         | Answer  |          |        |          |                  |          |         |
|------------------|---|----------|--------|----------|------------------|----------|---------|
| 1                | <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 33%;">Mass</th> <th style="width: 33%;">Length</th> <th style="width: 33%;">Capacity</th> </tr> </thead> <tbody> <tr> <td>g<br/>kg<br/>tonne</td> <td>mm<br/>km</td> <td>ml<br/>l</td> </tr> </tbody> </table> | Mass     | Length | Capacity | g<br>kg<br>tonne | mm<br>km | ml<br>l |
| Mass             | Length  | Capacity |        |          |                  |          |         |
| g<br>kg<br>tonne | mm<br>km  | ml<br>l  |        |          |                  |          |         |
| 2                |   |          |        |          |                  |          |         |
| 3                | <p>a) g      kg      l      tonnes</p> <p>b) cl      cm      m      km</p> <p>c) cm<sup>3</sup>      m<sup>3</sup>      ml      l</p> <p>d) mm      cm      m      mg</p>   |          |        |          |                  |          |         |
| 4                | <p>a) 2 ml      20 ml      200 ml      2,000 ml</p> <p>b) 50 mm      50 cm      50 m      50 km</p> <p>c) 1.5 g      1.5 kg      1.5 tonnes      15 kg</p> <p>d) 100 cm      100 m      100 km      100 mm</p>  |          |        |          |                  |          |         |
| 5                | <p>estimate of length of classroom in metres<br/>Children may have different values, but they should all use metres for the unit.</p>   |          |        |          |                  |          |         |
| 6                | <p>No.<br/>Any distance can be measured using centimetres, but the numbers may be very large.</p>   |          |        |          |                  |          |         |
| 7                | <p>A typical bath holds about 80 litres of water.<br/>Children need to explain how they arrived at their estimate.</p>  |          |        |          |                  |          |         |
| 8                | <p>Jugs come in different sizes.</p>  |          |        |          |                  |          |         |

## Y6 – Spring – Block 4 – Step 1 – Metric measures Answers (continued)

| Question | Answer   |
|----------|--|
| 9        | child's method of estimating the capacity of a swimming pool, using something that they know the capacity of, e.g. a litre bottle, a bucket  |
| 10       | child's estimate of the mass of their school, e.g.: <ul style="list-style-type: none"><li>• find out the mass of a brick</li><li>• estimate how many bricks in each wall</li><li>• multiply to find the mass</li></ul> |

| Question | Answer  |                |                |                |                |                  |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
|----------|---|----------------|----------------|----------------|----------------|------------------|---------|----------------|----------------|------|------|------|------|------|------|------------------|---------|---------|---------|----------------|----------------|----------------|--------------|
| 1        | 100<br>There are 100 cm in 1 metre.   |                |                |                |                |                  |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
| 2        | a) There are <b>1,000</b> grams in 1 kilogram.<br>There are <b>1,000</b> kilograms in 1 tonne.<br>b) There are <b>1,000</b> millilitres in 1 litre.<br>c) There are <b>10</b> millimetres in 1 centimetre.<br>There are <b>100</b> centimetres in 1 metre.<br>There are <b>1,000</b> metres in 1 kilometre.   |                |                |                |                |                  |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
| 3        | a) <table border="1" style="margin-left: 20px;"> <tr> <td>1 km</td> <td>1 km</td> <td>1 km</td> <td>1 km</td> </tr> <tr> <td>1,000 m</td> <td>1,000 m</td> <td><b>1,000 m</b></td> <td><b>1,000 m</b></td> </tr> </table> <p>There are <b>4,000</b> m in 4 km.</p> b) <table border="1" style="margin-left: 20px;"> <tr> <td>1 kg</td> <td>1 kg</td> <td>1 kg</td> <td>1 kg</td> <td>1 kg</td> <td>1 kg</td> <td><math>\frac{1}{2}</math> kg</td> </tr> <tr> <td>1,000 g</td> <td>1,000 g</td> <td>1,000 g</td> <td><b>1,000 g</b></td> <td><b>1,000 g</b></td> <td><b>1,000 g</b></td> <td><b>500 g</b></td> </tr> </table> <p>There are <b>6,500</b> g in <math>6\frac{1}{2}</math> kg.</p> | 1 km           | 1 km           | 1 km           | 1 km           | 1,000 m          | 1,000 m | <b>1,000 m</b> | <b>1,000 m</b> | 1 kg | 1 kg | 1 kg | 1 kg | 1 kg | 1 kg | $\frac{1}{2}$ kg | 1,000 g | 1,000 g | 1,000 g | <b>1,000 g</b> | <b>1,000 g</b> | <b>1,000 g</b> | <b>500 g</b> |
| 1 km     | 1 km  | 1 km           | 1 km           |                |                |                  |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
| 1,000 m  | 1,000 m   | <b>1,000 m</b> | <b>1,000 m</b> |                |                |                  |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
| 1 kg     | 1 kg  | 1 kg           | 1 kg           | 1 kg           | 1 kg           | $\frac{1}{2}$ kg |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
| 1,000 g  | 1,000 g   | 1,000 g        | <b>1,000 g</b> | <b>1,000 g</b> | <b>1,000 g</b> | <b>500 g</b>     |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
| 4        | a) 2 kg = <b>2,000</b> g<br>5 kg = <b>5,000</b> g<br>10 kg = <b>10,000</b> g<br>12 kg = <b>12,000</b> g<br>b) 1 l = <b>1,000</b> ml<br>5 l = <b>5,000</b> ml<br>11 l = <b>11,000</b> ml   |                |                |                |                |                  |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
| 5        | 2,500 g   |                |                |                |                |                  |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
| 6        |   |                |                |                |                |                  |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |
| 7        | a) 10 mm = <b>1</b> cm<br>11 mm = <b>1.1</b> cm<br><b>110</b> mm = 11 cm<br><b>11</b> mm = 1.1 cm<br><b>101</b> mm = 10.1 cm<br>b) 2.1 km = <b>2,100</b> m<br>2.001 km = <b>2,001</b> m<br>2.01 km = <b>2,010</b> m<br>2.011 km = <b>2,011</b> m  |                |                |                |                |                  |         |                |                |      |      |      |      |      |      |                  |         |         |         |                |                |                |              |

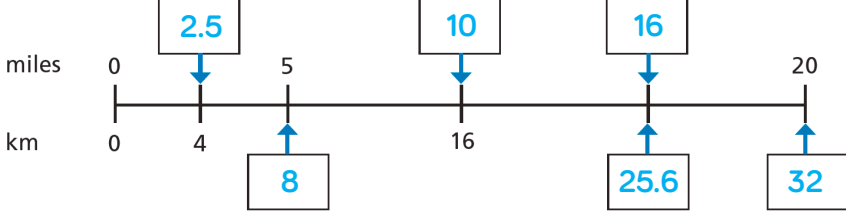
Y6 - Spring - Block 4 - Step 2 - Convert metric measures Answers (continued)

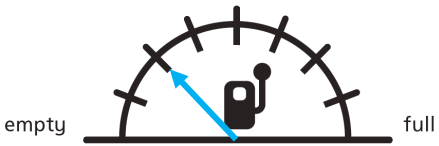
| Question | Answer   |
|----------|--|
| 8        | a) <<br>><br><<br>b) =<br>><br>>   |
| 9        | both<br>Multiplying by 10 and then 100 is the same as multiplying by 1,000 |
| 10       | 250 g  |
| 11       | a) 1,000,000 g<br>b) 1,300,000 g   |

Y6 – Spring – Block 4 – Step 3 – Calculate with metric measures Answers

| Question | Answer   |       |        |       |       |   |      |       |                 |       |       |         |      |
|----------|--|-------|--------|-------|-------|---|------|-------|-----------------|-------|-------|---------|------|
| 1        | a) 800 m<br>b) 1,200 m    1.2 km<br>c) 10<br>d) 25   |       |        |       |       |   |      |       |                 |       |       |         |      |
| 2        | 300 ml   |       |        |       |       |   |      |       |                 |       |       |         |      |
| 3        | 2.28 m   |       |        |       |       |   |      |       |                 |       |       |         |      |
| 4        | 16<br>Possible methods include:<br>Subtract Rosie's distance from Tommy's distance in metres and divide by 25<br>Work out how many lengths they each swam and find the difference.   |       |        |       |       |   |      |       |                 |       |       |         |      |
| 5        | 84 kg  |       |        |       |       |   |      |       |                 |       |       |         |      |
| 6        | 430 ml   |       |        |       |       |   |      |       |                 |       |       |         |      |
| 7        | 12.7 kg  |       |        |       |       |   |      |       |                 |       |       |         |      |
| 8        | 4  |       |        |       |       |   |      |       |                 |       |       |         |      |
| 9        | a) <div style="border: 1px solid black; border-radius: 15px; padding: 10px; margin: 10px 0;"> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center; margin-bottom: 10px;">Cupcakes (makes 24)</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center; width: 100px;">300 g</td> <td style="padding-left: 10px;">butter</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">300 g</td> <td style="padding-left: 10px;">sugar</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">6</td> <td style="padding-left: 10px;">eggs</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">3 tsp</td> <td style="padding-left: 10px;">vanilla extract</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">360 g</td> <td style="padding-left: 10px;">flour</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">12 tbsp</td> <td style="padding-left: 10px;">milk</td> </tr> </table> </div> b) 40 | 300 g | butter | 300 g | sugar | 6 | eggs | 3 tsp | vanilla extract | 360 g | flour | 12 tbsp | milk |
| 300 g    | butter   |       |        |       |       |   |      |       |                 |       |       |         |      |
| 300 g    | sugar  |       |        |       |       |   |      |       |                 |       |       |         |      |
| 6        | eggs   |       |        |       |       |   |      |       |                 |       |       |         |      |
| 3 tsp    | vanilla extract  |       |        |       |       |   |      |       |                 |       |       |         |      |
| 360 g    | flour  |       |        |       |       |   |      |       |                 |       |       |         |      |
| 12 tbsp  | milk   |       |        |       |       |   |      |       |                 |       |       |         |      |

Y6 – Spring – Block 4 – Step 4 – Miles and kilometres Answers

| Question | Answer   |
|----------|--|
| 1        | <p>a) 5 miles is approximately equal to 8 kilometres. <input checked="" type="checkbox"/></p> <p>b) 1 mile is longer than 1 kilometre. <input checked="" type="checkbox"/></p> <p>c) 2 kilometres is longer than 1 mile. <input checked="" type="checkbox"/></p> <p>d) 2 kilometres is longer than 2 miles. <input type="checkbox"/></p>       |
| 2        |  <p>The value between 10 miles and 20 miles is an estimate, so children's answers may vary.</p>  |
| 3        | <p>a) 5 miles <math>\approx</math> 8 kilometres<br/>         10 miles <math>\approx</math> 16 kilometres<br/>         15 miles <math>\approx</math> 24 kilometres</p> <p>b) 10 miles <math>\approx</math> 16 kilometres<br/>         1 mile <math>\approx</math> 1.6 kilometres<br/>         0.5 miles <math>\approx</math> 0.8 kilometres</p> |
| 4        | <p>a) 100 miles<br/>         b) 72 km<br/>         c) 400 miles<br/>         d) 152 km<br/>         e) 12 km<br/>         f) 3.2 km</p>  |
| 5        | Whitney has added 5 instead of multiplying by 2  |
| 6        | 41.92 km   |
| 7        | <p>a) France<br/>         b) 1.25 mph</p>  |
| 8        | 24 miles = 38.4 km   |
| 9        | child's places   |

| Question | Answer   |  |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
|----------|--|--|--------|----------|------|-------------------------|--|----------|-------------------------------------|---------------|--------|--|----------------------------|--|--|
| 1        | <table border="1"> <thead> <tr> <th></th> <th>Metric</th> <th>Imperial</th> </tr> </thead> <tbody> <tr> <td>Mass</td> <td>gram<br/><b>kilogram</b></td> <td><b>pound</b><br/><b>ounce</b><br/><b>stone</b></td> </tr> <tr> <td>Capacity</td> <td><b>millilitres</b><br/><b>litres</b></td> <td><b>gallon</b></td> </tr> <tr> <td>Length</td> <td><b>centimetre</b><br/><b>kilometres</b></td> <td><b>inch</b><br/><b>foot</b></td> </tr> </tbody> </table> |  | Metric | Imperial | Mass | gram<br><b>kilogram</b> | <b>pound</b><br><b>ounce</b><br><b>stone</b> | Capacity | <b>millilitres</b><br><b>litres</b> | <b>gallon</b> | Length | <b>centimetre</b><br><b>kilometres</b> | <b>inch</b><br><b>foot</b> |  |  |
|          | Metric   | Imperial                                     |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
| Mass     | gram<br><b>kilogram</b>  | <b>pound</b><br><b>ounce</b><br><b>stone</b> |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
| Capacity | <b>millilitres</b><br><b>litres</b>  | <b>gallon</b>                                |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
| Length   | <b>centimetre</b><br><b>kilometres</b>   | <b>inch</b><br><b>foot</b>                   |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
| 2        | <p>a) 1 foot is equal to <b>12</b> inches.<br/>1 inch is approximately <b>2.5</b> centimetres.</p> <p>b) 1 pound is equal to <b>16</b> ounces.<br/>1 stone is equal to <b>14</b> pounds.</p> <p>c) 1 gallon is equal to <b>8</b> pints.</p>  |  |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
| 3        | <p>a) 1 foot = <b>12</b> inches<br/>2 feet = <b>24</b> inches<br/>10 feet = <b>120</b> inches<br/>20 feet = <b>240</b> inches<br/>15 feet = <b>180</b> inches</p> <p>b) 1 gallon = <b>8</b> pints<br/><b>5</b> gallons = 40 pints<br/><b>6</b> gallons = 48 pints<br/><b>120</b> gallons = 960 pints</p>   |  |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
| 4        | <p>a) 107 inches<br/>b) 271.78 cm</p>  |  |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
| 5        | 224 ounces   |  |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
| 6        | <p>a) </p> <p>b) Yes.<br/>12 gallons = 96 pints</p>   |  |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |
| 7        | child's poster showing imperial units and conversions  |  |        |          |      |                         |  |          |                                     |               |        |  |                            |  |  |