
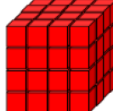
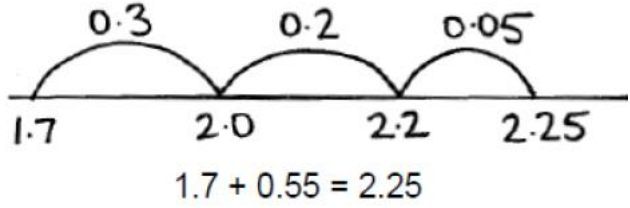
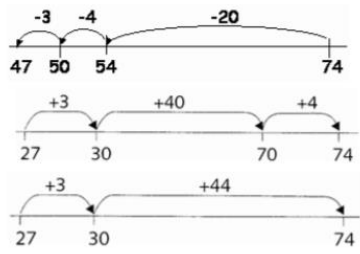


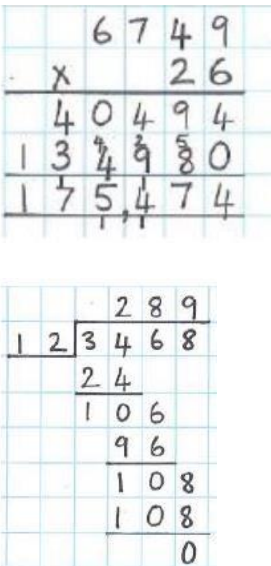
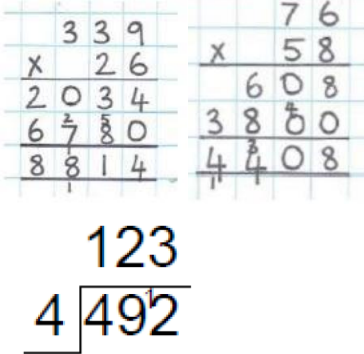
## Mathematics Pre and Post Assessment Planning: Autumn term Y6

Mathematical aspect	Non-negotiable end points	Prior knowledge and pre assessment	Post assessment <b>Knowing more, remembering more</b>					
<p>Number and place value: properties of place value</p>	<p>Knows how to read and write numbers with up to 8 digits using the comma separator.</p>	<p>Knows how to read and write numbers with up to 7 digits using the comma separator.</p>	<p>Knows the positional value of digits in eight-digit numbers.</p> <p>Knows how to read and write numbers at least to 10,000,000 and determine the value of each digit.</p> <p>Knows how to compare and order whole numbers up to ten million using numbers presented in different ways.</p> <p>Knows how to use the correct mathematical vocabulary (greater than/less than) alongside inequality symbols.</p> <p>Knows how to round any whole number up to and within 10,000,000 to the nearest 1,000, 10,000, 100,000 and 1,000,000.</p> <p>Knows how to use knowledge of multiples and place value to work out which two numbers the number they are rounding sits between.</p>					
<p>Links to resources and policy documents:</p> <p>Here are two number cards.</p> <p style="background-color: #ADD8E6; padding: 2px;">Find the difference between the numbers.</p> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid #ADD8E6; border-radius: 10px; padding: 5px; width: 150px;">Two million, three hundred thousand and sixty four</div> <div style="border: 1px solid #ADD8E6; border-radius: 10px; padding: 5px; width: 150px;">Two million, three hundred and sixty four thousand</div> </div> <p>Write the number <b>three million, twenty five thousand and seventeen</b> in figures.</p>	<div style="text-align: center;"> </div> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="width: 50%;">Number in digits</th> <th style="width: 50%;">Number in words</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">3 905 231</td> <td>One million, six hundred and thirty-three thousand, four hundred and fifty</td> </tr> <tr> <td style="text-align: center;">2 730 867</td> <td>Five million, one hundred and ninety-four thousand, eight hundred and two</td> </tr> </tbody> </table>	Number in digits	Number in words	3 905 231	One million, six hundred and thirty-three thousand, four hundred and fifty	2 730 867	Five million, one hundred and ninety-four thousand, eight hundred and two	<div style="text-align: center;"> </div>
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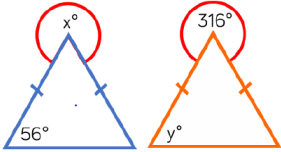
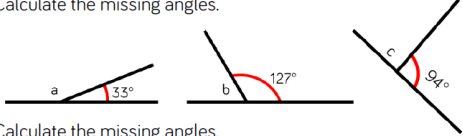
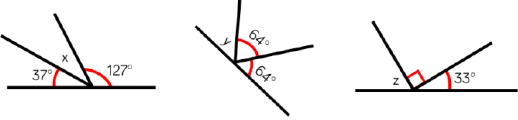

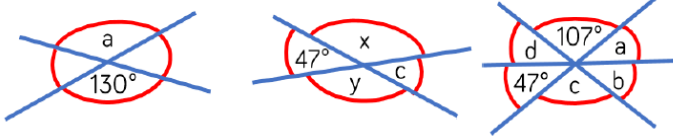
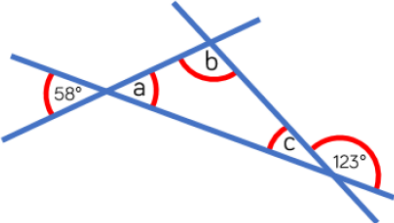
## Mathematics Pre and Post Assessment Planning: Autumn term Y6

<p>All four operations: mental methods</p>	<p>Knows efficient mental methods applying knowledge of properties of number.</p>	<p>Knows efficient mental methods for addition, subtraction, multiplication and division. Knows the terms factor, multiple and prime, square and cube numbers.</p>	<p>Knows how to carry out mental calculations, including with mixed operations and large numbers. Knows how to identify common factors, common multiples and prime numbers. Knows how to solve problems involving addition, subtraction, multiplication and division. Knows how to solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p>
<p>Links to resources and policy documents:</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px; margin: 5px; background-color: #ffffcc;">To multiply by 4: Double and then double again.</div> <div style="border: 1px solid black; padding: 2px; margin: 5px; background-color: #ccffcc;">To multiply by 5: Multiply by 10 and then halve.</div> <div style="border: 1px solid black; padding: 2px; margin: 5px; background-color: #ffcccc;">To multiply by 20: Multiply by 10 and then double.</div> <div style="border: 1px solid black; padding: 2px; margin: 5px; background-color: #ccffff;">To multiply by 9: Multiply by 10 and then adjust.</div> <div style="border: 1px solid black; padding: 2px; margin: 5px; background-color: #ccccff;">To multiply by 6: Multiply by 3 and then double.</div> </div>	$35 \times 6 = 30 \times 6 + 5 \times 6$ $= 180 + 30$ $= 210$ <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px; background-color: #ffffcc;">To multiply by 4: Double and then double again.</div> <div style="border: 1px solid black; padding: 2px; background-color: #ffcccc;">To multiply by 20: Multiply by 10 and then double.</div> <div style="border: 1px solid black; padding: 2px; background-color: #ccffcc;">To multiply by 5: Multiply by 10 and then halve.</div> </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <math display="block">4^2 = 4 \times 4 = 16</math> </div> <div style="text-align: center;">  <math display="block">4^3 = 4 \times 4 \times 4 = 64</math> </div> </div>	<div style="text-align: center; margin-bottom: 20px;">  </div> <div style="text-align: center;">  </div> <p>Children can decide whether to count on or count back</p>	
<p>Multiplication and division: long multiplication and long division</p>	<p>Knows the long algorithms for long multiplication and division.</p>	<p>Knows efficient methods for multiplication and division.</p>	<p>Knows how to multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication. Knows how to divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.</p>

## Mathematics Pre and Post Assessment Planning: Autumn term Y6

			<p>Knows how to solve problems involving addition, subtraction, multiplication and division.</p> <p>Knows how to use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p>
<p>Links to resources and policy documents:</p> 			<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>78</p> <p><u>x42</u></p> <p>156</p> <p><u>3120</u></p> <p><u>3276</u></p> </div> <div style="border: 1px solid black; padding: 2px; font-size: small;">Place the carried digits correctly.</div> <div style="text-align: center;"> <p>418</p> <p><u>x 4</u></p> <p>2508</p> <p><u>1620</u></p> <p><u>19228</u></p> </div> <div style="border: 1px solid black; padding: 2px; font-size: small;">What are the missing digits?</div> </div> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>15</p> <p><u>28</u></p> <p><u>30</u> (15 x 2)</p> <p>132</p> <p><u>120</u> (15 x 8)</p> <p>12</p> <p>Answer: 28 remainder 12</p> </div> <div style="font-size: small;">What is the partial table?</div> <div style="text-align: center;"> <p>38 r 10</p> <p>59</p> <p><u>177</u> (59 x 3)</p> <p>482</p> <p><u>472</u> (59 x 8)</p> <p>10</p> </div> <div style="border: 1px solid black; padding: 2px; font-size: small;">Spot the mistake</div> </div>
<p>Geometry: angles</p>	<p>Knows how unknown angles and lengths can be derived from known measurements.</p>	<p>Knows how to use angle sum facts and other properties to make deductions about missing angles and lengths.</p> <p>Knows the term diagonal and can make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals.</p>	<p>Knows how to recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p> <p>Knows that there are two angles on a straight line and four angles around a point.</p> <p>Knows how to apply their understanding of angles in a right angle, angles on a straight line and angles around a point to calculate missing angles.</p> <p>Knows that vertically opposite angles share a vertex and are equal.</p>

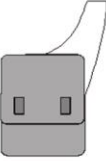

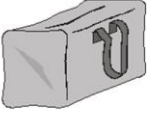
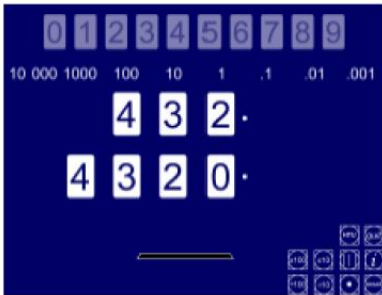
## Mathematics Pre and Post Assessment Planning: Autumn term Y6

<p><b>Links to resources and policy documents:</b></p> <p>Work out the value of <math>x</math> and <math>y</math>. Explain each step of your working.</p> 	<p>Calculate the missing angles.</p>  <p>Calculate the missing angles.</p> 	<p>Calculate the missing angles and state the type of triangle that these corners have been torn from.</p>  <p>Find the size of the missing angles.</p>  <p>Calculate the size of angles <math>a</math>, <math>b</math> and <math>c</math>.</p> 	
<p>Fractions: proper fractions, improper fractions and mixed numbers</p>	<p>Knows how to add and subtract fractions with different denominators by identifying equivalent fractions with the same denominator. Knows how to convert improper fractions and mixed numbers.</p>	<p>Knows that when the numerator is larger than the denominator it is an improper fraction. Knows that an improper fraction is converted to a mixed number.</p>	<p>Knows how to use common factors to simplify fractions; use common multiples to express fractions in the same denominator. Knows how to compare and order fractions, including fractions <math>&gt; 1</math>. Knows when adding or subtracting fractions with the same denominator, that the denominators stay the same whilst numerators are added or subtracted; bar models can be used to show this. Knows how to add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. Knows how to use divisions on a number line to support in finding the difference between fractions. Knows how to use number sense to visualise the size of</p>

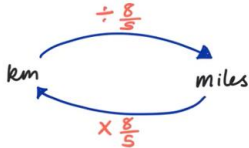
## Mathematics Pre and Post Assessment Planning: Autumn term Y6

			fractions before converting.
<p><b>Links to resources and policy documents:</b></p> <p>Eva has a full tin of paint. She uses <math>\frac{1}{3}</math> of the tin on Friday, <math>\frac{1}{21}</math> on Saturday and <math>\frac{2}{7}</math> on Sunday. How much paint does she have left?</p> <p>Tommy is adding mixed numbers. He adds the wholes and then adds the fractions. Then, Tommy simplifies his answer.</p> $1\frac{1}{2} + 2\frac{1}{6} = 1\frac{3}{6} + 2\frac{1}{6} = 3\frac{4}{6} = 3\frac{2}{3}$ <p>Use Tommy's method to add the fractions.</p> $3\frac{1}{2} + 2\frac{3}{8} = \quad 34\frac{1}{9} + 5\frac{2}{5} = \quad 12\frac{5}{12} + 2\frac{1}{7} =$	<p>Whitney converts the improper fraction <math>\frac{14}{5}</math> into a mixed number using cubes.</p> <p>She groups the cubes into 5s, then has 4 left over.</p> <p><math>\frac{5}{5}</math> is the same as <math>\square</math>     <math>\frac{10}{5}</math> is the same as <math>\square</math></p> <p><math>\frac{14}{5}</math> as a mixed number is <math>\square \frac{\square}{5}</math></p> <p>Use Whitney's method to convert <math>\frac{11}{3}</math>, <math>\frac{11}{4}</math>, <math>\frac{11}{5}</math> and <math>\frac{11}{6}</math></p> <p>Tommy converts the improper fraction <math>\frac{27}{8}</math> into a mixed number using bar models.</p> <p>Use Tommy's method to convert <math>\frac{25}{8}</math>, <math>\frac{27}{6}</math>, <math>\frac{18}{7}</math> and <math>\frac{32}{4}</math></p>	<p>Find the missing values.</p> $\frac{\square}{\square} = \frac{6}{10}$ $\frac{25}{30} = \frac{5}{\square}$ $\frac{2}{3} = \frac{2 + 6}{3 + \square}$ <p>Whitney is calculating <math>\frac{5}{8} + \frac{3}{16}</math></p> <p>She finds the lowest common multiple of 8 and 16 to find a common denominator.</p> <p>LCM of 8 and 16 is 16     <math>\frac{5}{8} = \frac{10}{16}</math>     <math>\frac{10}{16} + \frac{3}{16} = \frac{13}{16}</math></p> <p>Use this method to calculate:</p> $\frac{1}{3} + \frac{2}{9} = \quad \frac{3}{7} + \frac{7}{21} = \quad \frac{8}{15} + \frac{1}{5} = \quad \frac{3}{16} + \frac{3}{8} + \frac{1}{4} =$	
<p><b>Fractions: decimals</b></p>	<p>Knows how to round decimals and use the correct notation for recurring decimal places.</p>	<p>Knows decimal notation and the language associated with it for up to three decimal places.</p> <p>Knows that decimals are different ways of expressing proportions.</p>	<p>Knows the place value of numbers with up to 3 decimal places.</p> <p>Knows how to multiply and divide numbers with up to 3 decimal places by 10, 100 and 1,000.</p> <p>Knows that the digits move to the left when multiplying and to the right when dividing and know to use zero as a place holder.</p> <p>Knows that the decimal point does not move.</p> <p>Knows how to solve problems which require answers to be rounded to specified degrees of accuracy.</p>
<p><b>Links to resources and policy documents:</b></p>		<p>Round <b>35.72</b> to the nearest one decimal place</p>	


## Mathematics Pre and Post Assessment Planning: Autumn term Y6

<p><b>Q12.</b> Here are three bags in a shop</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">   <b>A</b>            £11.50         </div> <div style="text-align: center;">   <b>B</b>            £14.65         </div> <div style="text-align: center;">   <b>C</b>            £16.50         </div> </div> <p>How much does bag B cost to the nearest pound?</p> <p>rounded to the nearest whole number is →</p> <p>6.01 → <input style="width: 30px; text-align: center;" type="text" value="6"/></p> <p>9.51 → <input style="width: 30px;" type="text"/></p> <p>7.75 → <input style="width: 30px;" type="text"/></p> <p>E.g. <math>560 \div 24 =</math></p> <div style="text-align: center; margin-top: 20px;"> <math display="block">\begin{array}{r} 23.333 \\ 24 \overline{) 560.000} \\ \underline{588} \phantom{00} \\ 888 \\ \underline{888} \\ 000 \end{array}</math> </div>	<p><b><math>432 \times 10 = 4320</math></b></p> 	<p>Write in the missing numbers.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;">Number</th> <th style="width: 85%;">Rounded to the nearest whole number</th> </tr> </thead> <tbody> <tr> <td>5.05</td> <td><input style="width: 80%;" type="text"/></td> </tr> <tr> <td>5.55</td> <td><input style="width: 80%;" type="text"/></td> </tr> <tr> <td>4.45</td> <td><input style="width: 80%;" type="text"/></td> </tr> <tr> <td>4.54</td> <td><input style="width: 80%;" type="text"/></td> </tr> </tbody> </table> <p style="text-align: center; margin-top: 10px;"><b>Multiplying and Dividing by 10, 100 and 1000</b></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>10 000</th> <th>1000</th> <th>100</th> <th>10</th> <th>1</th> <th><math>\frac{1}{10}</math></th> <th><math>\frac{1}{100}</math></th> <th><math>\frac{1}{1000}</math></th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td>●</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>●</td> <td></td> <td></td> </tr> </tbody> </table> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p><b>Multiplying</b></p> <p>X 10    digits move LEFT 1 space            X 100    digits move LEFT 2 spaces            X 1000    digits move LEFT 3 spaces</p> <p>←</p> </div> <div style="text-align: center;"> <p><b>Dividing</b></p> <p>÷ 10    digits move RIGHT 1 space            ÷ 100    digits move RIGHT 2 spaces            ÷ 1000    digits move RIGHT 3 spaces</p> <p>→</p> </div> </div>	Number	Rounded to the nearest whole number	5.05	<input style="width: 80%;" type="text"/>	5.55	<input style="width: 80%;" type="text"/>	4.45	<input style="width: 80%;" type="text"/>	4.54	<input style="width: 80%;" type="text"/>	10 000	1000	100	10	1	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$					●									●		
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<p>Measurement: conversion of units</p>	<p>Knows that approximately 5 miles = 8 kilometres.</p>	<p>Knows how to use place value, multiplication and division to convert between standard units.</p>																																		
<p>Knows how to solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate. Knows how to read, write and recognise all metric measures for length, mass and capacity.</p>																																				

## Mathematics Pre and Post Assessment Planning: Autumn term Y6

	<p>Knows the approximate conversions and is able to tell if an answer is sensible.</p>		<p>Knows how to convert measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa using decimal notation to three decimal places; multiply and divide by 10, 100 and 1000 when converting between units of length, mass and capacity.</p> <p>Knows the difference between capacity and volume.</p> <p>Knows that 5 miles is approximately equal to 8km and can find approximate conversions from mile to km and km to miles.</p>																																															
<p>Links to resources and policy documents:</p> <p style="text-align: center;">How to convert km to miles</p>  <p style="text-align: center;"><b>1 mile = 1.6km</b></p> <p style="text-align: center; background-color: #ADD8E6; font-size: small;">Use this fact to complete the statements.</p> <p><input type="text"/> miles = 4.8km</p> <p>10 miles = <input type="text"/> km</p> <p><input type="text"/> miles = 400m</p>	<p><math>\frac{1}{10}</math> kilogram = <input type="text"/> grams      <math>\frac{3}{10}</math> km = <input type="text"/> metres</p> <p><math>7 \text{ kg} + \frac{1}{4} \text{ kg} = \text{input} \text{ g}</math>      <math>12 \text{ km} + \text{input} \text{ km} = 12,500 \text{ m}</math></p> <p>Complete the conversions.</p> <table style="width: 100%;"> <tr> <td>1,000 mm = <input type="text"/> m</td> <td>1,000 ml = 1 l</td> </tr> <tr> <td>5,000 mm = <input type="text"/> m</td> <td><input type="text"/> ml = 3 l</td> </tr> <tr> <td>50,000 mm = <input type="text"/> m</td> <td><input type="text"/> ml = 30 l</td> </tr> <tr> <td>500 mm = <input type="text"/> m</td> <td>300 ml = <input type="text"/> l</td> </tr> <tr> <td>5,500 mm = <input type="text"/> m</td> <td><input type="text"/> ml = 0.3 l</td> </tr> </table>	1,000 mm = <input type="text"/> m	1,000 ml = 1 l	5,000 mm = <input type="text"/> m	<input type="text"/> ml = 3 l	50,000 mm = <input type="text"/> m	<input type="text"/> ml = 30 l	500 mm = <input type="text"/> m	300 ml = <input type="text"/> l	5,500 mm = <input type="text"/> m	<input type="text"/> ml = 0.3 l	<p>Three children are running a 5 kilometre race for charity.</p> <p>Harry has run 3.77km</p> <p>Sam has run 3,792m</p> <p>Geeta has run <math>3\frac{3}{4}</math> km</p> <p style="background-color: #ADD8E6; padding: 5px;">Who has run the furthest?</p> <p style="text-align: center; font-size: small;"><b>Multiplying and Dividing by 10, 100 and 1000</b></p> <table style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td style="border: 1px solid black; padding: 2px;">10 000</td> <td style="border: 1px solid black; padding: 2px;">1000</td> <td style="border: 1px solid black; padding: 2px;">100</td> <td style="border: 1px solid black; padding: 2px;">10</td> <td style="border: 1px solid black; padding: 2px;">1</td> <td style="border: 1px solid black; padding: 2px;">• <math>\frac{1}{10}</math></td> <td style="border: 1px solid black; padding: 2px;">• <math>\frac{1}{100}</math></td> <td style="border: 1px solid black; padding: 2px;">• <math>\frac{1}{1000}</math></td> </tr> <tr> <td style="border: 1px solid black; padding: 2px;"> </td> <td style="border: 1px solid black; padding: 2px;"> </td> <td style="border: 1px solid black; padding: 2px;"> </td> <td style="border: 1px solid black; padding: 2px;"> </td> <td style="border: 1px solid black; padding: 2px;"> </td> <td style="border: 1px solid black; padding: 2px;"> </td> <td style="border: 1px solid black; padding: 2px;"> </td> <td style="border: 1px solid black; padding: 2px;"> </td> </tr> </table> <table style="width: 100%; font-size: x-small;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><b>Multiplying</b></p> <p>X 10    digits move LEFT 1 space</p> <p>X 100   digits move LEFT 2 spaces</p> <p>X 1000   digits move LEFT 3 spaces</p> </td> <td style="width: 50%; vertical-align: top;"> <p><b>Dividing</b></p> <p>÷ 10    digits move RIGHT 1 space</p> <p>÷ 100   digits move RIGHT 2 spaces</p> <p>÷ 1000   digits move RIGHT 3 spaces</p> </td> </tr> </table> <p>There are ___ mm in one centimetre.</p> <p>There are ___ cm in one metre.</p> <p>There are ___ m in one kilometre.</p> <p>Use these facts to complete the table.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #FFD700;"> <th>mm</th> <th>cm</th> <th>m</th> <th>km</th> </tr> </thead> <tbody> <tr> <td>44,000</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>2,780</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>15.5</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>1.75</td> </tr> </tbody> </table>	10 000	1000	100	10	1	• $\frac{1}{10}$	• $\frac{1}{100}$	• $\frac{1}{1000}$									<p><b>Multiplying</b></p> <p>X 10    digits move LEFT 1 space</p> <p>X 100   digits move LEFT 2 spaces</p> <p>X 1000   digits move LEFT 3 spaces</p>	<p><b>Dividing</b></p> <p>÷ 10    digits move RIGHT 1 space</p> <p>÷ 100   digits move RIGHT 2 spaces</p> <p>÷ 1000   digits move RIGHT 3 spaces</p>	mm	cm	m	km	44,000					2,780					15.5					1.75
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## Mathematics Pre and Post Assessment Planning: Autumn term Y6

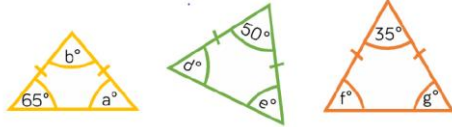
		<p>To bake buns for a party, Ron used these ingredients:</p> <div style="border: 1px solid orange; border-radius: 15px; padding: 10px; display: inline-block; margin: 10px;"> <p>600 g caster sugar          0.6 kg butter          18 eggs (792 g)  <math>\frac{3}{4}</math> kg self-raising flour          10 g baking powder</p> </div>  <p>What is the total mass of the ingredients?</p>	
<p>Geometry: properties of shape, 2D and 3D</p>	<p>Knows the conventional markings for parallel lines, sides of equal length, angles and right angles.</p>	<p>Knows the conventional markings for parallel lines and right angles.</p>	<p>Knows how to draw 2D shapes using given dimensions and angles; can use a protractor accurately.          Knows how to use knowledge of 2D and 3D shapes to identify three-dimensional shapes from their nets.          Knows how to build simple 3D shapes, including making nets.          Knows and can compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons: angles in a triangle equal 180 degrees, angles in a quadrilateral equal 360 degrees, angles on a straight line equal 180 degrees.          Knows that shapes can be partitioned into different shapes to work out the sum of the angles in polygons.          Knows the key features of specific types of triangles.          Knows and can recognise the notation for parallel lines, sides of equal length, angles and right angles.</p>



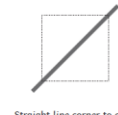
# Mathematics Pre and Post Assessment Planning: Autumn term Y6

Links to resources and policy documents:

Calculate the missing angles in the isosceles triangles.

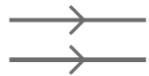


Diagonal



Straight line corner to corner

Parallel



Lines that will never meet and are always the same distance apart.

Perpendicular



Lines that meet at a right angle ( $90^\circ$ )

Intersecting Lines



Lines that cross but do not make a right angle.

Parallel

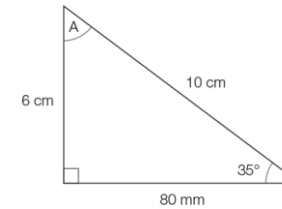


Lines that will never meet and are always the same distance apart.

Perpendicular



Lines that meet at a right angle ( $90^\circ$ )



Calculate the size of angle A

parallelogram



2 pairs of equal sides  
Diagonally opposite angles are equal

trapezium



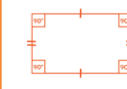
1 pair of sides are parallel

rhombus



All sides are equal  
Diagonally opposite angles are equal

rectangle



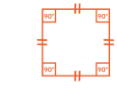
2 pairs of equal parallel sides  
4 right angles ( $90^\circ$ )

kite



2 pairs of sides of equal length  
1 pair of opposite angles is equal.

square



4 equal parallel sides  
4 right angles ( $90^\circ$ )

Complete the table.

Angle	Fraction of a full turn	Degrees
Right angle	$\frac{1}{4}$	$90^\circ$
Straight line		
Three right angles		
Full turn		

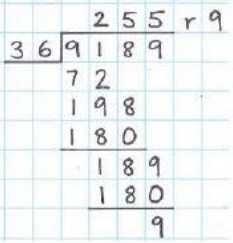
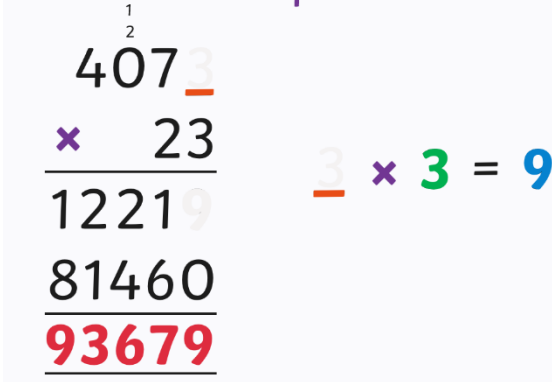
Multiplication and division: written methods, estimation and remainders

Knows the efficient written algorithms for long/short multiplication and long/short division.

Knows compact notation for long multiplication. Knows the compact algorithm for short division including remainders.

Knows how to multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication. Knows how to divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.

## Mathematics Pre and Post Assessment Planning: Autumn term Y6

			<p>Knows how to solve problems involving multiplication and division.</p> <p>Knows how to use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p>
<p>Links to resources and policy documents:</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>Standard Algorithm for Multiplication</b></p> <math display="block">\begin{array}{r} 34 \\ \times 28 \\ \hline 272 \\ + 680 \\ \hline 952 \end{array}</math> </div> <div style="text-align: center;"> <p><b>Standard Algorithm for Division</b></p> <math display="block">\begin{array}{r} 48 \text{ R}24 \\ 32 \overline{)1560} \\ \underline{-128} \phantom{0} \\ 280 \\ \underline{-256} \\ 24 \end{array}</math> </div> </div>  <div style="display: flex; justify-content: center; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <math display="block">\begin{array}{r} 146 \\ 6 \overline{)82739} \end{array}</math> </div> <span style="font-size: 2em; margin: 0 10px;">→</span> <div style="border: 1px solid black; padding: 2px;"> <math display="block">\begin{array}{r} 146.5 \\ 6 \overline{)82739.0} \end{array}</math> </div> </div>		<div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <math display="block">\begin{array}{r} 134 \text{ r}6 \\ 7 \overline{)943} \end{array}</math> <p><math>943 \div 7 = 134 \text{ and } 6/7\text{s}</math></p> </div> <div style="text-align: center;"> <math display="block">\begin{array}{r} 113 \text{ r}2 \\ 8 \overline{)906} \end{array}</math> <p><math>906 \div 8 = 113 \text{ and } 2/8\text{s}</math> <math>= 113.25</math></p> </div> </div>	 <p style="text-align: center; color: green; font-size: 1.5em;"><math>3 \times 3 = 9</math></p>
<p>Algebra: linear sequences</p>	<p>Knows how to find the common difference for the nth term.</p>	<p>Knows how to describe linear number sequences.</p> <p>Knows how to describe linear number sequences, including those involving fractions and decimals, and find the term-to-term rule.</p>	<p>Knows how to generate and describe linear number sequences.</p>

# Mathematics Pre and Post Assessment Planning: Autumn term Y6

Links to resources and policy documents:

Terms number: 1 2 3 4 5 6 7 8 9 10 20 100  
 Term: -15 -8 -1 6 13 20 27 34 41 48 118 678

Formula:  
 $7n - 22$

Did you get the same terms as I did?

10<sup>th</sup> term  
 $7 \times 10 = 70$   
 $70 - 22 = 48$

20<sup>th</sup> term  
 $7 \times 20 = 140$   
 $140 - 22 = 118$

100<sup>th</sup> term  
 $7 \times 100 = 700$   
 $700 - 22 = 678$

1 Write the next two numbers in each sequence.

6	12	18			+6	
21	28	35				+7
90	81	72				-9

21 The numbers in this sequence increase by the same amount each time.  
 Write the missing numbers.

$\frac{3}{8}$  1  $1\frac{5}{8}$   $2\frac{1}{4}$   $2\frac{7}{8}$

Spotting that  $1 = \frac{8}{8}$

Spotting that  $1\frac{1}{4} = \frac{9}{4} = \frac{18}{8}$

Fill in the missing numbers.

3	7	12	18	25		
0.5		1.3	1.7			

What is  $n - 3$  when  $n = 17$ ?

What is  $6n + 4$  when  $n = 30$ ?

Write down the first three terms of sequences whose  $n$ th term is:

$3n + 8$	___	___	___
$6n - 5$	___	___	___
$9n$	___	___	___
$-7n - 1$	___	___	___

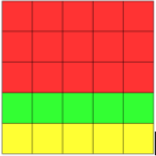
Ratio and proportion:  
 FDP to represent the whole,  
 $a:b$  ratio

Knows that proportions relate to the whole and ratios are part to part.

Knows that percentages, decimals and fractions are different ways of expressing proportions.

Knows that ratio shows the relationship between two values and can describe how one is related to another.  
 Knows how to make comparisons between two different quantities.  
 Knows how to compare ratios and fractions.  
 Knows that the ratio notation relates to the order of parts.  
 Knows how to find both a part and a whole.

## Mathematics Pre and Post Assessment Planning: Autumn term Y6

			<p>Knows how to solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</p> <p>Knows how to solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</p>																																																																																			
<p>Links to resources and policy documents:</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Ratio of red to green to yellow is</p> <p style="text-align: center;">3:1:1</p> </div> 	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Percent</th> <th style="text-align: left;">Decimal</th> <th style="text-align: left;">Fraction</th> </tr> </thead> <tbody> <tr> <td>20%</td> <td>0.2</td> <td><math>\frac{1}{5}</math></td> </tr> <tr> <td>25%</td> <td>0.25</td> <td><math>\frac{1}{4}</math></td> </tr> <tr> <td><math>33\frac{1}{3}\%</math></td> <td>0.333...</td> <td><math>\frac{1}{3}</math></td> </tr> <tr> <td>50%</td> <td>0.5</td> <td><math>\frac{1}{2}</math></td> </tr> </tbody> </table>	Percent	Decimal	Fraction	20%	0.2	$\frac{1}{5}$	25%	0.25	$\frac{1}{4}$	$33\frac{1}{3}\%$	0.333...	$\frac{1}{3}$	50%	0.5	$\frac{1}{2}$	<p>Here are the ingredients needed to make 12 cookies.</p> <p style="text-align: center;"><b>Ingredients</b></p> <p>Sugar ..... 180g          Butter ..... 225g          Eggs ..... 2          Flour ..... 0.3kg</p> <p>How much more flour than sugar is used?</p> <input style="width: 100px; height: 20px;" type="text"/> <p>How much butter is needed for 48 cookies?</p> <input style="width: 100px; height: 20px;" type="text"/> g <p>Mary uses the recipe to make a different amount of cookies.          Mary uses 3 eggs.</p> <p>How many cookies does she make?</p> <input style="width: 100px; height: 20px;" type="text"/>																																																																					
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<p>Statistics: reading tables</p>	<p>Knows which representations of data are most appropriate and why.</p>	<p>Knows how to read a timetable and complete missing information.</p>	<p>Knows how to complete, read and interpret information in tables, including timetables.</p>																																																																																			
<p>Links to resources and policy documents:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr style="background-color: #FFD700;"> <th>J</th><th>F</th><th>M</th><th>A</th><th>M</th><th>J</th><th>J</th><th>A</th><th>S</th><th>O</th><th>N</th><th>D</th> </tr> </thead> <tbody> <tr> <td>102</td><td>118</td><td>130</td><td>126</td><td>121</td><td>131</td><td>98</td><td>82</td><td>69</td><td>77</td><td>84</td><td>78</td> </tr> </tbody> </table> <p>The table shows the usual rainfall in each month in mm for Sydney, Australia.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #FF8C00;"> <th>Summer</th> <th>Dec, Jan, Feb</th> </tr> </thead> <tbody> <tr style="background-color: #FFA07A;"> <td>Autumn</td> <td>Mar, Apr, May</td> </tr> <tr style="background-color: #FFDAB9;"> <td>Winter</td> <td>June, July, Aug</td> </tr> <tr style="background-color: #FFB6C1;"> <td>Spring</td> <td>Sep, Oct, Nov</td> </tr> </tbody> </table> <p>The table shows the seasons and months. Write some statements to match the information in both tables.</p>	J	F	M	A	M	J	J	A	S	O	N	D	102	118	130	126	121	131	98	82	69	77	84	78	Summer	Dec, Jan, Feb	Autumn	Mar, Apr, May	Winter	June, July, Aug	Spring	Sep, Oct, Nov	<p>Look at this bus timetable and complete the missing times:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr style="background-color: #00AEEF; color: white;"> <th colspan="6">Bus Timetable</th> </tr> </thead> <tbody> <tr> <td>Sports Centre</td> <td>07:30</td> <td></td> <td>12:15</td> <td>13:45</td> <td>17:00</td> </tr> <tr> <td>Cinema</td> <td>07:43</td> <td>09:13</td> <td></td> <td></td> <td>17:13</td> </tr> <tr> <td>Town Centre</td> <td></td> <td>09:20</td> <td>12:35</td> <td>14:05</td> <td></td> </tr> <tr> <td>Park</td> <td>08:11</td> <td>09:41</td> <td>12:56</td> <td></td> <td>17:41</td> </tr> <tr> <td>Train Station</td> <td>08:26</td> <td></td> <td>13:11</td> <td>14:41</td> <td></td> </tr> </tbody> </table>	Bus Timetable						Sports Centre	07:30		12:15	13:45	17:00	Cinema	07:43	09:13			17:13	Town Centre		09:20	12:35	14:05		Park	08:11	09:41	12:56		17:41	Train Station	08:26		13:11	14:41		<p>This table shows the height a rocket reached between 0 and 60 seconds.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr style="background-color: #90EE90;"> <th>Time (seconds)</th> <th>Height (metres)</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>10</td><td>8</td></tr> <tr><td>20</td><td>15</td></tr> <tr><td>30</td><td>25</td></tr> <tr><td>40</td><td>37</td></tr> <tr><td>50</td><td>50</td></tr> <tr><td>60</td><td>70</td></tr> </tbody> </table> <p>Create a line graph to represent the information.</p>	Time (seconds)	Height (metres)	0	0	10	8	20	15	30	25	40	37	50	50	60	70
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## Mathematics Pre and Post Assessment Planning: Autumn term Y6

		<p>This table shows the distance a lorry travelled during the day.</p> <table border="1"><thead><tr><th>Time</th><th>Distance in miles</th></tr></thead><tbody><tr><td>7.00 a.m.</td><td>10</td></tr><tr><td>8.00 a.m.</td><td>28</td></tr><tr><td>9.00 a.m.</td><td>42</td></tr><tr><td>10.00 a.m.</td><td>58</td></tr><tr><td>11.00 a.m.</td><td>70</td></tr><tr><td>12.00 a.m.</td><td>95</td></tr><tr><td>1.00 p.m.</td><td>95</td></tr><tr><td>2.00 p.m.</td><td>118</td></tr></tbody></table> <p>Create a line graph to represent the information, where the divisions along the <math>x</math>-axis are every two hours.</p> <p>Create a second line graph where the divisions along the <math>x</math>-axis are every hour.</p> <p>Compare your graphs. Which graph is more accurate?</p> <p>Would a graph with divisions at each half hour be even more accurate?</p>	Time	Distance in miles	7.00 a.m.	10	8.00 a.m.	28	9.00 a.m.	42	10.00 a.m.	58	11.00 a.m.	70	12.00 a.m.	95	1.00 p.m.	95	2.00 p.m.	118
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