

Autumn

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
	<b>Place Value Compare Order</b>	<b>Place Value Decimals</b>	<b>Four Operations:</b>		<b>Fractions</b>	
<b>Vocab</b>	Number numeral million place value digit round accuracy estimate negative number integer positive minus power decimal places ascending descending value	Addition add total combined more subtraction subtract take away minus less multiplication groups of times by division groups of formal method short multiplication/division mental calculation known facts derived	Common factors common multiples prime numbers composite numbers square numbers <sup>2</sup> cubes numbers <sup>3</sup> order of operations BIDMAS/BODMAS indices order	Simplify degree of accuracy numerator denominator common multiple common denominator equivalent proper improper mixed number		
<b>KIRFS</b>	Count in Powers of Ten Forwards and Backwards to 10 million					
<b>Y5 Consolidation</b>	<ul style="list-style-type: none"> <li>→ Count forwards or backwards in steps of powers of 10 from any given number up to 1 000 000 .</li> <li>→ Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.</li> <li>→ Order a given set of negative and positive integers.</li> <li>→ Read, write, order and compare numbers to at least 1 000 000 and determine the place value of each digit. Continue to use numbers in contexts including measurement.</li> <li>→ Extend and apply understanding of the number system to decimal numbers and fractions</li> <li>→ Use the vocabulary of comparing and ordering numbers including use of &gt;, &lt; symbols and = sign.</li> <li>→ Round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000.</li> <li>→ Use rounding, estimation and inverse operations to check answers to calculations and determine, in the context of a problem, levels of accuracy.</li> <li>→ Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.</li> </ul>	<ul style="list-style-type: none"> <li>→ Use and explain a range of mental strategies appropriate to the numbers involved, sometimes supporting explanations with jottings or informal recording.</li> <li>→ Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).</li> <li>→ Add and subtract numbers mentally with increasingly large numbers e.g. Use place value and known facts to subtract one near multiple of 1000 from another e.g. 6070 – 4097 or 12 462 – 2300 = 10 162.</li> <li>→ Develop lines of enquiry through conjecturing relationships and generalisations and testing ideas. Identify examples for which a statement is true or false.</li> <li>→ Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</li> <li>→ Use and explain the equals sign to indicate equivalence, including in missing number problems (e.g. 13 + 24 = 12+ 25; 33 = 55 - Δ).</li> <li>→ Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</li> </ul>	<ul style="list-style-type: none"> <li>→ Continue to practise to recognise multiples of numbers up to 12 x 12, to recognise patterns in sequences of multiples and connections between them. Know and apply tests of divisibility.</li> <li>→ Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. Identify common multiples.</li> <li>→ Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.</li> <li>→ Recognise and describe linear number sequences, including those involving fractions and decimals and find the term to term rule</li> <li>→ Establish whether a number up to 100 is prime and recall prime numbers up to 19.</li> <li>→ Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³).</li> <li>→ Use understanding of the terms factor, multiple and prime, square and cube numbers to construct equivalence statements (e.g. 4 x 35 = 2 x 2 x 35; 3 x 270 = 3 x 3 x 9 x 10 = 9² x 10).</li> <li>→ Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.</li> </ul>	<ul style="list-style-type: none"> <li>→ Continue to develop understanding of fractions as numbers, measures and operators by finding, naming and writing, fractions of numbers and quantities.</li> <li>→ Extend and apply understanding of the number system to decimal numbers and fractions</li> <li>→ Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.</li> <li>→ Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements &gt; 1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5).</li> <li>→ Connect equivalent fractions &gt; 1 that simplify to integers with division and other fractions &gt; 1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions</li> <li>→ Continue to practise counting forwards and backwards using fractions and decimals, including bridging through zero, for example on a number line.</li> <li>→ Compare and order fractions whose denominators are all multiples of the same number.</li> <li>→ Add and subtract fractions with the same denominator and with denominators that are multiples of the same number extending to calculations that exceed 1 as a mixed number.</li> <li>→ Continue to practise counting forwards and backwards using fractions and decimals, including bridging through zero, for example on a number line.</li> <li>→ Recognise and describe linear number sequences, including those involving fractions and decimals and find the term to term rule.</li> </ul>		
<b>Y6 NC</b>	<ul style="list-style-type: none"> <li>→ Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.</li> <li>→ Round any whole number to a required degree of accuracy.</li> <li>→ Use negative numbers in context, and calculate intervals across zero.</li> <li>→ Solve number and practical problems that involve all of the above.</li> <li>→ Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places.</li> </ul>	<ul style="list-style-type: none"> <li>→ Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why.</li> <li>→ Solve problems involving addition, subtraction, multiplication and division.</li> <li>→ Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.</li> <li>→ Perform mental calculations, including with mixed operations and large numbers.</li> </ul>	<ul style="list-style-type: none"> <li>→ Identify common factors, common multiples and prime numbers.</li> <li>→ Use their knowledge of the order of operations to carryout calculations involving the four operations.</li> <li>→ Perform mental calculations, including with mixed operations and large numbers.</li> <li>→ Solve problems involving addition, subtraction, multiplication and division. <b>Revisited</b></li> </ul>	<ul style="list-style-type: none"> <li>→ Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</li> <li>→ Compare and order fractions, including fractions &gt;1.</li> <li>→ Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</li> <li>→ Solve problems which require answers to be rounded to specified degrees of accuracy.</li> </ul>		
<b>Small Steps</b>	<ul style="list-style-type: none"> <li>→ Numbers to 10,000 → Numbers to 100,000</li> <li>6NPV–2 Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and nonstandard partitioning.</li> <li>→ Numbers to 1,000,000</li> <li>→ Numbers to ten million. → Compare an order any number. → Read and write numbers to 10,000,000. → Powers of 10. → Number line to 10,000,000. → Compare and order any integer</li> <li>→ Round numbers to 10, 100 or 1,000. → Round any numbers. → Negative numbers. → Multiply by 10, 100 and 1,000.</li> <li>→ Divide by 10, 100 and 1,000.</li> </ul>	<ul style="list-style-type: none"> <li>→ Add and subtract integers. → Common factors. →</li> <li>6AS/MD–1 Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).</li> </ul>	<ul style="list-style-type: none"> <li>→ Factors</li> <li>→ Common factors. → Common multiples.</li> <li>→ Rules of divisibility</li> <li>→ Primes to 100 → Squares and cubes.</li> <li>→ Multiply up to a 4-digit number by a 2-digit number</li> <li>→ Solve problems with multiplication</li> <li>→ Order of operations.</li> <li>→ Mental calculations and estimation.</li> <li>→ Reasoning from known facts.</li> </ul>	<ul style="list-style-type: none"> <li>6F–1 Recognise when fractions can be simplified, and use common factors to simplify fractions.</li> <li>→ Equivalent fractions and simplifying fractions. → Improper fractions to mixed number. → Mixed number to improper → Equivalent fractions on a number line.</li> <li>→ Compare &amp; order (denominator). → Compare &amp; order (numerator).</li> <li>6F–3 Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy → Add mixed numbers → Add &amp; subtract simple fractions. → Add &amp; subtract any two fractions (2). → Adding fractions.</li> <li>→ Subtract mixed numbers. → Multi-step problems → Subtracting fractions.</li> <li>→ Fraction of an amount. → Fraction of an amount- find the whole</li> </ul>		

Autumn

	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Vocabulary	Fractions, Decimals and Percentages	Ratio	Conversions	Area	Position Direction/ Shape	Algebra
KIRFS	Identify common factors of a pair of numbers					
Y5 Consolidation	<ul style="list-style-type: none"> <li>→ Continue to practise using known facts and understanding of place value to quickly derive sums and differences using whole numbers and decimals.</li> <li>→ Mentally add and subtract tenths, and one digit whole numbers and tenths.</li> <li>→ Read and write decimal numbers as fractions (e.g. <math>0.71 = \frac{71}{100}</math>).</li> <li>→ Recognize and use thousandths and relate them to tenths, hundredths, decimal equivalents and measures.</li> <li>→ Round decimals with two decimal places to the nearest whole number and to one decimal place.</li> <li>→ Read, write, order and compare numbers with up to three decimal places.</li> <li>→ Recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100 and as a decimal fraction.</li> <li>→ Make connections between percentages, fractions and decimals e.g. 100% represents a whole quantity, 1% is <math>\frac{1}{100}</math>... and relate this to finding ‘fractions of’.</li> <li>→ Understand that percentages, decimals and fractions are different ways of expressing proportions</li> </ul>	<ul style="list-style-type: none"> <li>→ Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling. Information required to solve a problem is often drawn from tables, including timetables, graphs and charts.</li> </ul>	<ul style="list-style-type: none"> <li>→ Convert between different units of metric measure (e.g. kilometre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) using knowledge of place value and multiplication / division.</li> <li>→ Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</li> <li>→ Use multiplication and division as inverses e.g. by multiplying and dividing by powers of ten in scale drawings or by powers of 1000 in converting between units such as kilometres and meters.</li> <li>→ Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</li> </ul>	<ul style="list-style-type: none"> <li>→ Continue to use read and write standard metric units and their abbreviations, developing fluency in their relationships.</li> <li>→ Suggest suitable units and equipment for measuring and read scales to an appropriate degree of accuracy.</li> <li>→ Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</li> <li>→ Use the properties of rectangles to deduce related facts and find missing lengths and angles.</li> <li>→ Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>) and estimate the area of irregular shapes. For rectangles use the formula, length x breadth = area, expressed in words or symbols.</li> <li>→ Use the relations of perimeter or area to find unknown lengths, missing measures questions such as these can be expressed algebraically e.g. <math>4 + 2b = 20</math> for a rectangle of sides 2cm and bcm and perimeter 20cm.</li> </ul>	<ul style="list-style-type: none"> <li>→ Continue to compare and classify geometric shapes based on developing knowledge and understanding of their properties.</li> <li>→ Use the properties of rectangles to deduce related facts and find missing lengths and angles.</li> <li>→ Identify 3D shapes, including cubes and other cuboids, from 2D representations.</li> <li>→ Identify, describe and represent the position of a shape following a reflection, using the appropriate language, and know that the shape has not changed.</li> <li>→ Recognize and use reflection in a variety of diagrams, including continuing to use a 2D grid and coordinates in the first quadrant.</li> <li>→ Reflection should be in lines that are parallel to the axes.</li> </ul>	<ul style="list-style-type: none"> <li>→ Understand and use the relationships between the four operations and the principles of the arithmetic laws; commutative, associative and distributive. (Distributivity can be expressed as <math>a(b+c) = ab + ac</math>).</li> </ul>
Y6 NC	<ul style="list-style-type: none"> <li>→ Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places. <i>Revisited</i></li> <li>→ Solve problems involving the calculation of percentages (for example, of measures and such as 15% of 360) and the use of percentages for comparison.</li> <li>→ Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.</li> </ul>	<ul style="list-style-type: none"> <li>→ Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</li> <li>→ Solve problems involving similar shapes where the scale factor is known or can be found.</li> <li>→ Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</li> </ul>	<ul style="list-style-type: none"> <li>→ Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation up to 3 d.p.</li> <li>→ Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</li> <li>→ Convert between miles and kilometres.</li> </ul>	<ul style="list-style-type: none"> <li>→ Recognise that shapes with the same areas can have different perimeters and vice versa.</li> <li>→ Recognise when it is possible to use formulae for area and volume of shapes.</li> <li>→ Calculate the area of parallelograms and triangles.</li> </ul>	<ul style="list-style-type: none"> <li>→ Describe positions on the full coordinate grid (all four quadrants).</li> <li>→ Draw and translate simple shapes on the coordinate plane, and reflect them in the axes</li> <li>→ Draw 2-D shapes using given dimensions and angles.</li> <li>→ Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.</li> </ul>	<ul style="list-style-type: none"> <li>→ Use simple formulae.</li> <li>→ Generate and describe linear number sequences.</li> <li>→ Express missing number problems algebraically.</li> <li>→ Find pairs of numbers that satisfy an equation with two unknowns.</li> <li>→ Enumerate possibilities of combinations of two variables.</li> </ul>
Small Steps	<ul style="list-style-type: none"> <li>→ Decimals up to 2d.p.</li> <li>→ Three Decimal Places</li> <li>→ Division to solve problems.</li> <li>→ Decimals as fractions.</li> <li>→ Understand percentages</li> <li>→ Equivalent FDP.</li> <li>→ <math>6F-2</math> Express fractions in a common denomination and use this to compare fractions that are similar in value.</li> </ul>	<ul style="list-style-type: none"> <li>→ Use ratio language.</li> <li>→ Introducing the ratio symbol.</li> <li>→ Calculating ratio.</li> <li>→ <b>6AS/MD-3 Solve problems involving ratio relationships.</b></li> </ul>	<ul style="list-style-type: none"> <li>→ Metric measures.</li> <li>→ Convert metric measures.</li> <li>→ Calculate with metric measures.</li> <li>→ Miles and kilometres</li> <li>→ Imperial measures</li> </ul>	<ul style="list-style-type: none"> <li>→ Shapes – same area.</li> <li>→ Area and perimeter.</li> <li>→ Area of a triangle (1).</li> <li>→ Area of a triangle (2).</li> </ul>	<ul style="list-style-type: none"> <li>→ Coordinates in the first quadrant.</li> <li>→ Coordinate in four quadrants.</li> <li>→ Translations</li> <li>→ Reflections</li> <li>→ Measure with a protractor.</li> <li>→ Draw lines and angles accurately</li> <li>→ Introduce angles.</li> <li>→ Angles on a straight line</li> <li>→ Angles around a point</li> <li>→ Calculate angles.</li> </ul>	<ul style="list-style-type: none"> <li>→ Find a rule – one step.</li> <li>→ Use an algebraic rule.</li> <li>→ Substitution.</li> <li>→ Formulae.</li> <li>→ Solve simple one step equations.</li> <li>→ Find pairs of values.</li> <li>→ Enumerate possibilities.</li> </ul>

Spring

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
<b>Vocabulary</b>	<b>Place Value</b> Number numeral million place value digit round accuracy estimate negative number integer positive minus power decimal places ascending descending value	<b>Multiplication and Division</b> Multiplication multiply product formal method short multiplication regroup remainder interpret as a fraction/decimal long division divisor quotient estimate estimation check accuracy	<b>Fractions</b> Simplify degree of accuracy numerator denominator common multiple common denominator equivalent proper improper mixed number integer	<b>Properties of Shape</b> Geometric properties vertical(ly) angles nets polygons acute obtuse reflect right angle quadrilaterals protractor angle measurer three-dimensional hemisphere prism		
<b>KIRFS</b>	Find Fractions of Decimals					
<b>Y5 Consolidation</b>	<p>→ Read Roman numerals to 1 000 (M) and recognise years written in Roman numerals. Appreciate the difference between the Roman numeral system and our own number system from a place value viewpoint.</p> <p>→ Apply understanding of the number system to solve number problems and practical problems and puzzles involving numbers, money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbols.</p> <p>→ Use rounding, estimation and inverse operations to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p>	<p>→ Multiply and divide numbers mentally drawing upon known facts place value and properties of numbers to support mental calculation with larger numbers.</p> <p>→ Use knowledge of place value and multiplication facts to derive related multiplication and division facts involving decimals e.g. <math>0.8 \times 7</math>, <math>4.8 \div 6</math>.</p> <p>→ Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including short multiplication and long multiplication for two-digit numbers.</p> <p>→ Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context as fractions, as decimals or by rounding.</p> <p>→ Use and explain the equals sign to indicate equivalence, including in missing number problems (e.g. <math>2 \times 24 = 12 \times 4</math>; <math>33 = 5 \times 6</math>).</p> <p>→ Apply understanding of number operations to solve number puzzles, routine and non-routine problems and explain reasoning.</p> <p>→ Explore and discuss patterns, properties and relationships that arise in the number system using appropriate mathematical vocabulary.</p>	<p>→ Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</p> <p>→ Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</p> <p>→ Connect multiplication by a fraction to using fractions as operators (fractions of) and to division. This relates to scaling by simple fractions, including fractions</p> <p>→ Apply understanding of fractions, decimals up to three places and percentages to solve routine and non-routine problems and puzzles involving numbers, shapes, money or measures. Explain methods and reasoning orally and in writing, including using diagrams and symbols.</p>	<p>→ Continue to compare and classify geometric shapes based on developing knowledge and understanding of their properties.</p> <p>→ Identify 3D shapes, including cubes and other cuboids, from 2D representations.</p> <p>→ Become accurate in drawing lines with a ruler to the nearest millimetre and measuring with a protractor. → Use conventional markings for parallel lines and right angles.</p> <p>→ Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p> <p>→ Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles.</p> <p>→ Draw given angles and measure them in degrees°.</p> <p>→ Identify: angles at a point and one whole turn (total 360°); angles at a point on a straight line and ½ a turn (total 180°); other multiples of 90°.</p> <p>→ Use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems.</p>		
<b>Y6 NC</b>	<p>6NPV-1 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).</p> <p>6NPV-3 Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts</p> <p>→ Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.</p> <p>→ Round any whole number to a required degree of accuracy.</p> <p>→ Use negative numbers in context, and calculate intervals across zero.</p> <p>→ Solve number and practical problems that involve all of the above.</p> <p>→ Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places.</p> <p>6NPV-4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts</p>	<p>6AS/MD-2 Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.</p> <p>→ Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication.</p> <p>→ Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context.</p> <p>→ Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context.</p> <p>→ Perform mental calculations, including with mixed operations and large numbers.</p> <p>→ Solve problems involving addition, subtraction, multiplication and division.</p> <p>→ Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.</p> <p>6AS/MD-4 Solve problems with 2 unknowns.</p>	<p>→ Multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. <math>1/4 \times 1/2 = 1/8</math>).</p> <p>→ Divide proper fractions by whole numbers (e.g. <math>1/3 \div 2 = 1/6</math>).</p> <p>→ Associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8).</p> <p>→ Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places.</p> <p>→ Multiply one digit numbers with up to two decimal places by whole numbers.</p> <p>→ Use written division methods in cases where the answer has up to two decimal places.</p>	<p>6G-1 Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems</p> <p>→ Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.</p> <p>→ Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p>		
<b>Small Steps</b>	<p>→ Numbers to ten million.</p> <p>→ Compare and order any integer.</p> <p>→ Round any numbers.</p> <p>→ Negative numbers.</p>	<p>→ Multiply 4-digits by 1-digit → Multiply up to 4-digit by 1-digit number.</p> <p>→ Multiply 2-digits (area model) → Multiply 2-digits by 2-digits</p> <p>→ Multiply 3-digits by 2-digits → Divide 4-digits by 1-digit → Divide with remainders → Short division → Division using factors.</p> <p>→ Long division introduction → Long division with remainders.</p> <p>→ Solve multi-step problems</p> <p>→ Common factors. Revisited → Common multiples. revisited</p> <p>→ Primes. Revisited → Squares and cubes. Revisited → Order of operations. Revisited → Mental calculations and estimation. revisited</p> <p>→ Reasoning from known facts. revisited</p>	<p>→ Mixed addition and subtraction.</p> <p>→ Multiply fractions by integers.</p> <p>→ Multiply fractions by fractions.</p> <p>→ Divide a fraction by an integer.</p> <p>→ Divide any fraction by an integer.</p> <p>→ Mixed questions with fractions.</p> <p>→ Fraction of an amount</p> <p>→ Fraction of an amount – find the whole</p> <p>→ Four rules with fractions.</p>	<p>→ Vertically opposite angles.</p> <p>→ Angles in a triangle.</p> <p>→ Angles in a triangle – special cases.</p> <p>→ Angles in a triangle – missing angles.</p> <p>→ Angles in special quadrilaterals.</p> <p>→ Angles in regular polygons.</p> <p>→ Draw shapes accurately.</p> <p>→ Nets of 3D shapes.</p>		

Spring

	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
	Decimals	Statistics	Percentages	Ratio	Algebra	Measurement: Area and Volume
Vocabulary	Place value value tenths hundredths thousandths integer rounded accuracy	Properties centre radius diameter circumference pie chart line graph continuous mean average interpret	Decimal fraction percentage equivalents % percentage of an amount missing value percentage increase/decrease	Relative scale scale factor proportion ratio as a:b	Symbol letter formula formulae sequence algebraic(ally) equation unknown variable constant generalise	Area formula formulae volume parallelograms km <sup>2</sup> mm <sup>3</sup> cubed standard unit cube cuboid capacity
KIRFS	Recall common fractions, decimals and percentage equivalence					
Y5 Consolidation	<ul style="list-style-type: none"> <li>→ Mentally add and subtract tenths, and one-digit whole numbers and tenths.</li> <li>→ Add and subtract decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 (e.g. 0.83 + 0.17 = 1) using formal written methods when appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>→ <b>Complete, read and interpret information in (a wide range of charts and) tables. Begin to decide which representations of data are most appropriate and why.</b></li> <li>→ Pose questions that can be answered using information presented in different graphs charts and tables.</li> <li>→ Understand and use Venn and Carroll diagrams to support reasoning about numbers or shapes.</li> <li>→ <b>Solve comparison, sum and difference problems using information presented in a line graph.</b></li> <li>→ Connect work on coordinates and scales to their interpretation of time graphs.</li> </ul>	<ul style="list-style-type: none"> <li>→ <b>Recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100 and as a decimal fraction.</b></li> <li>→ <b>Solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}</math> and those with a denominator of a multiple of 10 or 25.</b></li> <li>→ Make connections between percentages, fractions and decimals e.g. 100% represents a whole quantity, 1% is 1/100... and relate this to finding ‘fractions of’.</li> <li>→ Understand that percentages, decimals and fractions are different ways of expressing proportions</li> </ul>			<ul style="list-style-type: none"> <li>→ Calculate area from scale drawings using given measurements.</li> <li>→ Apply measuring skills to an appropriate degree of accuracy, alongside the skills of thinking mathematically to solve problems. These should include practical problems and might involve construction of shapes or artefacts, often in a cross curricular context.</li> <li>→ Make and explain connections between number, measures and shape.</li> <li>→ <b>Estimate volume (e.g. using 1 cm<sup>3</sup> blocks to build cubes and cuboids) and capacity (e.g. using water).</b></li> </ul>
Y6 NC	<ul style="list-style-type: none"> <li>→ Multiply one-digit numbers with up to 2 decimal places by whole numbers.</li> <li>→ Use written division methods in cases where the answer has up to 2 decimal places.</li> <li>→ Solve problems which require answers to be rounded to specified degrees of accuracy.</li> </ul>	<ul style="list-style-type: none"> <li>→ Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.</li> <li>→ Interpret and construct pie charts and line graphs and use these to solve problems.</li> <li>→ Calculate the mean as an average.</li> </ul>	<ul style="list-style-type: none"> <li>→ Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.</li> <li>→ Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.</li> </ul>	<ul style="list-style-type: none"> <li>→ Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</li> <li>→ Solve problems involving similar shapes where the scale factor is known or can be found.</li> <li>→ Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.</li> </ul>	<ul style="list-style-type: none"> <li>→ Use simple formulae.</li> <li>→ Generate and describe linear number sequences.</li> <li>→ Express missing number problems algebraically.</li> <li>→ Find pairs of numbers that satisfy an equation with two unknowns.</li> <li>→ Enumerate possibilities of combinations of two variables.</li> </ul>	<ul style="list-style-type: none"> <li>→ Recognise when it is possible to use formulae for area and volume of shapes.</li> <li>→ Calculate the area of parallelograms and triangles.</li> <li>→ Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm<sup>3</sup>, m<sup>3</sup> and extending to other units (mm<sup>3</sup>, km<sup>3</sup>).</li> </ul>
Small Steps	<ul style="list-style-type: none"> <li>→ <b>Three decimal places.</b></li> <li>→ Multiply decimals by integers.</li> <li>→ Divide decimals by integers.</li> <li>→ Fractions to decimals (2).</li> </ul>	<ul style="list-style-type: none"> <li>→ Read and interpret line graphs.</li> <li>→ Draw line graphs.</li> <li>→ Use line graphs to solve problems.</li> <li>→ Circles.</li> <li>→ Read and interpret pie charts.</li> <li>→ Pie charts with percentages.</li> <li>→ Draw pie charts.</li> <li>→ The mean.</li> </ul>	<ul style="list-style-type: none"> <li>→ Percentage of an amount (2).</li> <li>→ Percentages – missing values.</li> <li>→ Percentage increase and decrease.</li> </ul>	<ul style="list-style-type: none"> <li>→ Ratio and fractions.</li> <li>→ Using scale factors.</li> <li>→ Calculating scale factors.</li> <li>→ Ratio and proportion problems.</li> </ul>	<ul style="list-style-type: none"> <li>→ Find a rule – two steps.</li> <li>→ Word problems.</li> <li>→ Solve two step equations.</li> </ul>	<ul style="list-style-type: none"> <li>→ Area of a triangle (3).</li> <li>→ Area of a parallelogram.</li> <li>→ What is volume?</li> <li>→ Volume – counting cubes.</li> <li>→ Volume of a cuboid.</li> </ul>

Summer

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
	Place Value	Decimals	Number Four Operations	Fractions		Percentages Ratio
Vocabulary	Number numeral million place value digit round accuracy estimate negative number integer positive minus power decimal places ascending descending value	Place value value tenths hundredths thousandths integer rounded accuracy equivalent	Addition add total combined more subtraction subtract take away minus less multiplication groups of times by division groups of formal method short multiplication/division mental calculation known facts derived facts multi-step regroup	Decimal fraction percentage equivalents % increase/decrease simplify degree of accuracy numerator denominator common multiple common denominator equivalent proper improper mixed number integer		Relative scale scale factor proportion ratio as a:b Decimal fraction percentage equivalents % percentage of an amount missing value percentage increase/decrease
KIRFS	Find simple percentages of amounts (1%, 5% 10% etc)					
Y5 Consolidation	→ See previous	→ See previous	→ See previous	→ See previous		→ See previous
Y6 NC	<ul style="list-style-type: none"> <li>→ Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.</li> <li>→ Round any whole number to a required degree of accuracy.</li> <li>→ Use negative numbers in context, and calculate intervals across zero.</li> <li>→ Solve number and practical problems that involve all of the above.</li> </ul>	<ul style="list-style-type: none"> <li>→ Multiply one-digit numbers with up to 2 decimal places by whole numbers.</li> <li>→ Use written division methods in cases where the answer has up to 2 decimal places.</li> <li>→ Solve problems which require answers to be rounded to specified degrees of accuracy.</li> </ul>	<ul style="list-style-type: none"> <li>→ Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why.</li> <li>→ Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication.</li> <li>→ Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context.</li> <li>→ Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context.</li> <li>→ Perform mental calculations, including with mixed operations and large numbers.</li> <li>→ Identify common factors, common multiples and prime numbers.</li> <li>→ Use their knowledge of the order of operations to carryout calculations involving the four operations.</li> <li>→ Solve problems involving addition, subtraction, multiplication and division.</li> <li>→ Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.</li> </ul>	<ul style="list-style-type: none"> <li>→ Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</li> <li>→ Solve problems which require answers to be rounded to specified degrees of accuracy. <i>revisited</i></li> <li>→ Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</li> </ul>	<ul style="list-style-type: none"> <li>→ Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.</li> <li>→ Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.</li> <li>→ Solve problems involving similar shapes where the scale factor is known or can be found.</li> </ul>	
Small Steps	<ul style="list-style-type: none"> <li>→ Numbers to ten million. Revisited</li> <li>→ Compare an order any number. Revisited</li> <li>→ Round any numbers. Revisited</li> <li>→ Negative numbers. Revisited</li> </ul>	<ul style="list-style-type: none"> <li>→ Multiply decimals by integers. Revisited</li> <li>→ Divide decimals by integers. Revisited</li> </ul>	<ul style="list-style-type: none"> <li>→ See previous small steps and use teacher judgement</li> <li>→ Add and subtract whole numbers. Revisited</li> <li>→ Multiply up to 4-digit by 1-digit number. Revisited</li> <li>→ Long division (3).</li> <li>→ Long division (4).</li> </ul>	<ul style="list-style-type: none"> <li>→ See previous small steps and use teacher judgement</li> <li>→ Mixed addition and subtraction. → Fraction of an amount. Revisited</li> <li>→ Finding the whole.</li> <li>→ Mixed addition and subtraction. → Revisited</li> <li>→ Four rules with fractions. Revisited</li> <li>→ Revisited</li> </ul>	<ul style="list-style-type: none"> <li>→ Percentages –missing values. Revisited</li> <li>→ Percentage increase and decrease. Revisited</li> <li>→ Calculating scale factors. Revisited</li> <li>→ Ratio and proportion problems</li> </ul>	

Summer

		Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
		<b>Statistics</b>		<b>Shape Investigations</b>		<b>Investigations</b>	<b>Investigations</b>
<b>Vocabulary</b>		Properties of a circle radius diameter circumference interpret construct pie chart line graph mean average		All		All	All
<b>KIRFS</b>		REVISE ALL KIRFS					
<b>Y5 Consolidation</b>		→ Solve calculation problems using information from a range of table and charts. → Continue to read the time, interpret timetables and use units of time, including to <b>solve problems involving converting between units of time.</b>		→ Apply understanding of number properties to solve routine and non-routine problems and puzzles involving numbers, money or measure. → Apply understanding of number properties to solve routine and non-routine problems and puzzles involving numbers, money or measure. → Solve problems, involving reasoning about shapes and their properties. Explain solutions orally or using writing, diagrams, practical materials or dynamic geometry ICT tools. → Use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals, e.g. through using dynamic geometry ICT tools.		→ Apply the skills of collecting, representing and interpreting statistical data across the curriculum within and beyond mathematics, sometimes in response to an enquiry of interest to and suggested by pupils. → Apply understanding of number properties to solve routine and non-routine problems and puzzles involving numbers, money or measure. → Apply measuring skills to an appropriate degree of accuracy, alongside the skills of thinking mathematically to solve problems.	→ See previous
<b>Y6 NC</b>		→ Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. → Interpret and construct pie charts and line graphs and use these to solve problems. → Calculate the mean as an average.		All		All	All
<b>Small Steps</b>		→ Read and interpret pie charts. Revisited → Pie charts with percentages. Revisited → Draw pie charts. Revisited		All		All	All