

Year 8 Spring Term

Sequenced	Block 7: Tables and probability	Block 8: Brackets, equations and inequalities	Block 9: Sequences and Indices	Block 10: Fractions and percentages	Block 11: Standard index form	Block 12: Number sense
Key Knowledge	<p>To know:</p> <ul style="list-style-type: none"> <li>how to find probability as fractions, decimals and percentages</li> <li>common outcomes linked to probability e.g. flipping a coin, rolling a dice, 52 cards, parity (odd/even numbers)</li> <li>mutually exclusive outcomes cannot occur at the same time</li> </ul>	<p>To know:</p> <ul style="list-style-type: none"> <li>know that expand a bracket means multiply out</li> <li>know that a binomial consists of two terms</li> <li>know the difference between identities, equations, formulae and inequalities</li> <li>know the methods for solving equations and inequalities</li> </ul>	<p>To know:</p> <ul style="list-style-type: none"> <li>the difference between linear and non-linear sequences</li> <li>that the position to term rule can be represented algebraically</li> <li>know the difference between like and unlike terms</li> <li>know that a power is repeated multiplication</li> <li>know the addition and subtraction laws of indices</li> </ul>	<p>To know:</p> <ul style="list-style-type: none"> <li>key conversions between fractions, percentages and decimals. 1%, 10%,25%, 33.3%, 50%,66.6%, 75%,100%</li> <li>understand and use multipliers e.g. 82% is 0.82</li> <li>know decrease is subtracting from the original</li> <li>know increase is adding to the original</li> </ul>	<p>To know:</p> <ul style="list-style-type: none"> <li>positive powers of 10</li> <li>negative powers of 10 as decimal equivalent</li> <li>standard form is written in the form <math>a \times 10^n</math> where <math>1 \leq a &lt; 10</math></li> </ul>	<p>To know:</p> <ul style="list-style-type: none"> <li>estimating is not an accurate answer</li> <li><b>know what an error interval using inequalities (H)</b></li> <li>Conversions: 100p =£1 Length 1000m = 1km 100cm = 1m 10mm=1cm Capacity 1000ml = 1l 100cl = 1l Number of days in each month, 7 days in a week 60 seconds in a minute, 60 minutes in an hour, 24 hours in a day</li> <li><b>Area conversions</b> <b>1cm<sup>2</sup> = 10mm x 10mm = 100mm<sup>2</sup> (H)</b></li> </ul>
Key Skills	<p>To be able to:</p> <ul style="list-style-type: none"> <li>draw &amp; interpret a sample space diagram</li> <li>draw &amp; interpret a Venn diagram</li> <li>draw &amp; interpret a two-way-table</li> <li>calculate total frequency from above.</li> <li>use the product rule for counting</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>expand a single bracket or expand and simplify multiple single brackets</li> <li>factorise an expression</li> <li><b>expand a pair of binomials (H)</b></li> <li>form and solve equations and inequalities with brackets</li> <li><b>Form and solve equations and inequalities with unknowns on both sides (H)</b></li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>Generate sequences given a rule in words and algebraically</li> <li><b>Write the rule for the nth term of a sequence (H)</b></li> <li>Add and subtract expression with indices</li> <li>Multiply and divide expressions with indices</li> <li>Simplify expressions using the addition and subtraction laws of indices</li> <li><b>Explore powers of powers (H)</b></li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>convert fluently between fractions, decimals and percentages</li> <li>find percentage of an amount</li> <li>use a multiplier to find percentages of an amount</li> <li>find multipliers for decreases and increases</li> <li>express one number as a percentage of another with and without a calculator</li> <li>calculate percentage change</li> <li>calculate original values by using reverse percentages</li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>convert numbers greater than 1 into standard form</li> <li>convert numbers less than 1 into standard form</li> <li>convert numbers in standard form back to ordinary numbers</li> <li>be able to add and subtract numbers in standard form</li> <li>be able to multiply and divide numbers in standard form</li> <li><b>convert negative indices into fractions (H)</b></li> </ul>	<p>To be able to:</p> <ul style="list-style-type: none"> <li>use standard units of mass, length, time, money and other measures, including with decimal quantities</li> <li>round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures]</li> <li>use approximation through rounding to estimate answers <b>and calculate possible resulting errors expressed using inequality notation <math>a &lt; x \leq b</math> (H)</b></li> <li>use a calculator and other technologies to calculate results accurately and then interpret them appropriately</li> </ul>
	Tier 2 and 3 key vocabulary	Tier 2 and 3 key vocabulary		Tier 2 and 3 key vocabulary	Tier 2 and 3 key vocabulary	Tier 2 and 3 key vocabulary
Subject specific	outcome sample space table two way table Venn diagram total frequency expected relative frequency product rule	expression simplify substitute term coefficient equivalent positive negative solve equation inequality greater than less than satisfy expand multiply out factorise fully product factor HCF identity like terms quadratic unknown form check solution set side balance check variable subject formula	sequence term nth term linear non-linear common difference generate expression position constant Fibonacci substitute integer algebraic expand bracket coefficient  index indices powers base exponent product numerator denominator	fraction, percentage, decimal, equivalent, denominator, numerator, estimate, hundredth, tenth, multiplier, increase, decrease, profit, loss, change	base, index, power, exponent, standard form, negative, place value, commutative, reciprocal, root	round, significant, power, nearest, integer, decimal point, decimal place, estimate, change, deposit, interest, debit, credit