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(National Curriculum)						

	<p>of two numbers</p> <p>_____</p> <ul style="list-style-type: none"><li>• Use prime</li></ul>					
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	<ul style="list-style-type: none"> <li>• Calculate with positive indices (roots) using written methods</li> <li>• Calculate with negative indices in the context of standard form</li> <li>• Know how to square (or cube) a negative number</li> <li>• Substitute negative numbers into expressions</li> <li>• Enter negative numbers into a calculator</li> <li>• Interpret a calculator</li> </ul>	<p>steps are required</p> <ul style="list-style-type: none"> <li>• Rec- the solution to an equation &amp; substitution</li> <li>• Understand the meaning of the four inequalities &amp; symbols</li> <li>• Choose the correct inequality symbol for a particular situation</li> <li>• Represent practical situations as inequalities</li> <li>• Find the set of integers that are solutions to an inequality</li> <li>• Use set notation</li> </ul>	<p>expected outcomes</p> <p>Use experimental probability to calculate expected outcomes</p> <ul style="list-style-type: none"> <li>• Generate a sequence from a term to term rule</li> <li>• Understand the meaning of a position to term rule</li> <li>• Use a position to term rule to generate a sequence</li> </ul> <p>Use the nth term of a sequence to deduce if a given number is in a sequence</p> <ul style="list-style-type: none"> <li>• Plot graphs of</li> </ul>	<p>range from a grouped frequency table</p> <ul style="list-style-type: none"> <li>• Analyse and compare sets of data</li> <li>• Appreciate the limitations of different statistics (mean, median, mode, range)</li> <li>• Choose appropriate statistics to describe a set of data</li> <li>• Know the meaning of continuous data</li> <li>• Interpret a grouped frequency table for continuous data</li> </ul>	<ul style="list-style-type: none"> <li>• Identify ratios in a real life context</li> <li>• Write a ratio to describe a situation</li> <li>• Identify proportion in a situation</li> <li>• Find a relevant multiplier in a situation involving proportion</li> <li>• Use fractions in situations involving ratio or proportion</li> <li>• Understand the connections between ratios and fractions</li> <li>• Recognise a graph that illustrates direct proportion</li> </ul>	<ul style="list-style-type: none"> <li>• Use the concept of scaling in diagrams</li> <li>• Measure and state a specified bearing</li> <li>• Construct a scale diagram involving bearings</li> <li>• Use bearings to solve geometrical problems</li> <li>• Construct triangles (\$\$\$, \$4\$, 4\$4,</li> </ul>
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	<p>displaying with negative numbers</p> <ul style="list-style-type: none"> <li>Understand how to use the order of operations including powers and roots</li> </ul> <p>Use a calculator to evaluate numerical expressions involving powers (roots)</p> <ul style="list-style-type: none"> <li>Identify if a fraction is terminating or recurring</li> <li>Recall some decimal and fraction equivalents (e.g. tenths, fifths, eighths)</li> </ul>	<p>to list a set of integers</p> <ul style="list-style-type: none"> <li>Use a formal method to solve an inequality with unknowns on both sides</li> <li>Use a formal method to solve an inequality involving brackets</li> <li>Know how to deal with negative number terms in an inequality</li> <li>Know how to show a range of values that solve an inequality on a number line</li> <li>Know when to use an open or closed circle at the end of a range of values</li> </ul>	<p>functions of the form <math>y = mx + c</math> (<math>m &gt; 0</math> &amp; <math>m &lt; 0</math>)</p> <ul style="list-style-type: none"> <li>Understand the concept of the gradient of a straight line</li> <li>Find the gradient of a straight line on a unit grid</li> <li>Find the y-intercept of a straight line</li> <li>Find the equation of a line through one point with a given gradient</li> <li>Find the equation of a line through two given points</li> </ul>	<ul style="list-style-type: none"> <li>Construct a grouped frequency table for continuous data</li> <li>Construct histograms for grouped data with equal class intervals</li> <li>Interpret histograms for grouped data with equal class intervals</li> <li>Construct and use the horizontal axis of a histogram correctly</li> </ul>	<p>Recognise a graph that illustrates inverse proportion</p>	
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	<ul style="list-style-type: none"><li>• Write a decimal as a fraction _____</li><li>• Write a fraction in its lowest terms b&amp; cancelling common factors _____</li><li>• 2den t f&amp; when a fraction can be scaled to tenths or hundredths</li><li>• . onvert a fraction to a decimal b&amp; scaling (when possible) _____</li><li>• Use a calculator to change an&amp; fraction to a decimal _____</li><li>• Write a decimal as a percentage</li></ul>					
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	<p>as a percentage</p> <p>_____</p> <ul style="list-style-type: none"> <li>• Aecognise when a fract on (percentage) should be interpreted as a number</li> <li>• Aecognise when a fract on (percentage) should be interpreted as a operator</li> <li>• 2den t&amp; the mult plier for a percentage increase or decrease when the percentage is greater than +!!J " _____</li> <li>• Use calculators to increase an amount b&amp; a percentage greater than +!!J " _____</li> </ul>					
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	<p>—</p> <ul style="list-style-type: none"> <li>• Solve problems involving percentage change —</li> </ul> <p>—</p> <ul style="list-style-type: none"> <li>• Solve original value problems when working with percentages</li> </ul> <p>—</p> <ul style="list-style-type: none"> <li>• Solve financial problems including simple interest</li> </ul> <p>—</p> <ul style="list-style-type: none"> <li>• Understand the meaning of giving an exact solution</li> </ul> <p>Solve problems that require exact calculation with fractions</p>					
	<p>4 5</p> <p>4</p> <p>3</p>	<p>6 7 !</p> <p>3</p>	<p>4 5</p> <p>4</p> <p>3</p>	<p>6 7 !</p> <p>3</p>	<p>4 5</p> <p>4</p> <p>3</p>	<p>6 " 7 !</p> <p>3</p>

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	<p>Pupils use mathematics as an integral part of classroom activities. They represent their work with objects or pictures and discuss it. They recognise and use a simple pattern or relationship.</p>	<p>Pupils develop their own strategies for solving problems and use these strategies both in working within mathematics and in applying mathematics to practical contexts. When solving problems, with or without 2. K, they check their results are reasonable by considering the context. They look for patterns and relationships, presenting information and results in a clear and organised way, using 2. K appropriately. They search for a solution by trying out ideas of their own.</p>	<p>Pupils are able to solve a range of standard tasks and solve quite complex problems both independently and systematically by breaking them down into smaller, more manageable tasks. They interpret, discuss and synthesise information presented in a variety of mathematical forms, using appropriate mathematical language. They begin to give mathematical justifications, making connections between the current situation and situations they have seen before.</p>

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	organised work, using 2. K appropriately and search for a solution by trying out ideas of their own	solutions, looking for equivalence to different problems with similar structures and appreciate the difference between mathematical explanation and experimental evidence	mathematical language and symbols effectively in presenting a convincing, reasoned argument. Their reports include mathematical justifications, distinguishing between evidence and proof and explaining their solutions to problems involving a number of features or variables
	In order to explore mathematical situations, carry out tasks or tackle problems, pupils identify the mathematical aspects and obtain necessary information and calculate accurately, using 2. K where appropriate and check their working and results, considering whether these are sensible and show understanding of situations by describing them mathematically using symbols, words and diagrams and draw simple conclusions of their own and explain their reasoning	Pupils develop and follow alternative approaches and compare and evaluate representations of a situation	

?upils will develop their spelling of -e& mathematical wordsF Khis will be monitored using spelling tests at the start and end of each unitF Khis will be \$?4B  
 mar-edf ?upils will be given opportuni tes to write in sentences and paragraphs when suited to the topicf

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**Develop fluency**

consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots

select and use appropriate calculation strategies to solve increasingly complex problems

use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships

substitute values in expressions, rearrange and simplify expressions, and solve equations

move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs]

develop algebraic and graphical fluency, including understanding linear and simple quadratic functions

use language and properties precisely to analyse numbers, algebraic expressions, 2-D and 3-D shapes, probability and statistics!

**Reason mathematically**

extend their understanding of the number system" make connections between number relationships, and their algebraic and graphical representations

extend and formalise their knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically



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