


Subject	Year	Month		
Mathematics	10	September		
<b>Topic:</b>				
<b>Indices, powers and roots</b>				5 lessons
Content (Intent)				
<b>Prior Learning</b> Year 9 Indices and roots September		<b>Future Learning</b> Year 10 Factors, multiples & primes October		
<b>Objectives</b> <ul style="list-style-type: none"> <li>Use index notation for squares and cubes, including integer squares up to <math>10 \times 10</math>, the corresponding square roots and the cubes of 1, 2, 3, 4, 5 and 10;</li> <li>Understand the difference between positive and negative square roots;</li> <li>Recognise powers of 2, 3, 4, 5</li> <li>Use the laws of indices to multiply and divide numbers written in index notation;</li> <li>Use brackets and the hierarchy of operations with powers inside the brackets, or raising brackets to powers and evaluate expressions involving squares, cubes, roots and numbers in index form</li> <li>Use calculators for all calculations: positive and negative numbers, brackets, powers and roots, four operations.</li> <li>Use index notation for powers of 10, including negative powers and convert large and small numbers into standard form and back</li> </ul>				
<b>Pedagogical notes (implementation)</b>		<b>How will understanding be assessed &amp; recorded (Impact)</b>		
Pupils need to know how to enter negative numbers into their calculator. Use the language of 'negative' number and not minus number to avoid confusion with calculations. Note that the students need to understand the term 'surd' as there will be occasions when their calculator displays an answer in surd form, for example, $4\sqrt{2}$ .		<b>End of half term</b> Oct <b>End of Year</b> Year 10 exams in April		
		<b>How can parents help at home?</b>		
		<b>MathsWatch clips (Qualification KS4)</b>  29, 77, 81, 82, 83, 131, 207a		
<b>Further reading/discussion</b>				
<b>Reading / Enrichment</b>	<b>Literacy</b>	<b>Numeracy Links</b>	<b>Careers Links</b> Cryptologist Astronomer Physicist Engineer	