


Subject	Year	Month	
<b>Mathematics</b>	8	September	
<b>PRODUCTS OF PRIMES AND STANDARD FORM</b>			7 LESSONS
<b>Content (Intent)</b>			
<p><b>Prior Learning</b></p> <p>Y7 Oct :</p> <ul style="list-style-type: none"> <li>- Rounding (to nearest, dp, sf)</li> <li>- Estimating by rounding to the first significant figure</li> <li>- Powers and roots</li> <li>- Multiplying and dividing by powers of 10</li> </ul> <p>Y7 Nov :</p> <ul style="list-style-type: none"> <li>- Prime numbers</li> <li>- Factors, multiples</li> <li>- HCF and LCM from a list of numbers</li> </ul>	<p><b>Future Learning</b></p> <p>Y9 September:</p> <ul style="list-style-type: none"> <li>- Apply <b>the four operations</b> in calculations using standard form</li> <li>- Use standard form on a scientific calculator including interpreting the standard form display of a scientific calculator</li> </ul> <p>Y10 September:</p> <ul style="list-style-type: none"> <li>- Factors, multiples and primes</li> <li>- Standard form and surds</li> </ul>		
<p><b>Objectives</b></p> <ul style="list-style-type: none"> <li>• Write a number as a product of its prime factors</li> <li>• Use prime factorisations and Venn diagrams to find the HCF and LCM of 2 numbers (<b>Challenge:</b> Use the method above to find HCF and LCM of 3 numbers. )</li> <li>• Round numbers to one and two decimal places</li> <li>• Round numbers to one or two significant figures</li> <li>• Use standard form to write large numbers</li> <li>• Use standard form to write small numbers</li> </ul>	<p><b>For teaching purposes</b></p> <p>Possible questions</p> <ul style="list-style-type: none"> <li>• Show me two (three-digit) numbers with a highest common factor of 18</li> <li>• Show me two numbers with a lowest common multiple of 240.</li> <li>• Jenny writes <math>7.1 \times 10^{-5} = 0.000071</math>. Kenny writes <math>7.1 \times 10^{-5} = 0.000071</math>. Who do you agree with? Give reasons for your answer.</li> </ul> <p>Misconceptions</p> <ul style="list-style-type: none"> <li>• pupils believe that 1 is a prime number</li> <li>• may think <math>35\ 934 = 36</math> to two significant figures</li> <li>• may incorrectly connect the power to the number of zeros</li> <li>• with negative powers of 10, pupils may think that the power indicates how many zeros should be placed between the decimal point and the first non-zero digit</li> </ul>		
<b>Pedagogical notes (implementation)</b>	<b>How will understanding be assessed &amp; recorded (Impact)</b>		
<ul style="list-style-type: none"> <li>• A <b>prime number</b> is a number with <i>exactly two</i> factors. This to minimize the misconception of "1"</li> <li>• <b>Venn diagram</b> requires the universal set (box) and use "intersection"</li> <li>• '<b>standard form</b>' = 'scientific notation' = 'standard index form'</li> <li>• Explore the ways to enter and interpret numbers in standard form on a scientific calculator.</li> </ul>	<p><b>8BAM1</b> Standard Form  <b>End of term</b> Assessment in December  <b>End of Year</b> Assessment in June</p> <p style="background-color: #e1eef6;"><b>How can parents help at home?</b></p> <p><b>MathsWatch clips (Qualification KS3)</b>  Prime factors: N30a, N30b, N31a, N31b  Rounding: N27a, N27b, N38  Standard form: N45a, N45b</p>		
<b>Further reading/discussion</b>			
<p><b>Reading / Enrichment</b></p> <p><a href="#">Use 5040 when writing prime factors</a></p> <p><a href="#">KM: Ben Nevis</a></p> <p><a href="#">KM: Astronomical numbers</a></p> <p><a href="#">KM: Interesting standard form</a></p> <p><a href="#">KM: Powers of ten</a></p> <p><a href="#">KM: Maths to Infinity: Standard form</a></p> <p><a href="#">The scale of the universe animation (external site)</a></p>	<p><b>Literacy</b></p> <p>Prime number  Prime factor  Prime factorisation  Product  Venn diagram  Intersection  Highest common factor  Lowest common multiple  Standard form  Significant figure</p> <p><b>Notation</b></p> <p><math>5^3</math> is read as '5 cubed'  Standard form : <math>a \times 10^b</math>, <math>1 \leq a &lt; 10</math></p>	<p><b>Numeracy Links</b></p>	<p><b>Careers Links</b></p> <p>Chemistry  Physicist  Astronomy  Engineering  Medical research  Internet security  Computing</p>