


Subject	Year	Month		
Mathematics	7	November		
Topic:				
FACTORS AND MULTIPLES				5 LESSONS
Content (Intent)				
<p>Prior Learning</p> <p>KEY STAGE 2:</p> <ul style="list-style-type: none"> Find factors of integers Recall multiplication facts to 12×12 and associated division facts Divisibility checks for 2, 3, 5, 9 Find multiples of numbers <p>First half term</p> <ul style="list-style-type: none"> Divisibility checks repeated Power and Roots introduced 		<p>Future Learning</p> <ul style="list-style-type: none"> Y8 : Product of Primes, HCF, LCM (with Venn Diagrams) Y10: Product of primes extended 		
<p>Objectives</p> <ul style="list-style-type: none"> Full understanding of language: factors, multiples, primes, Square number, Cube number, (triangular number) Find common factors of numbers Find the HCF of two (or three) numbers Find the LCM of two (or three) numbers Recognise and solve problems involving LCM and HCF 		<p>For teaching purposes</p> <p>Possible questions</p> <ul style="list-style-type: none"> Eratosthenes Sieve: why is there no need to go further than the multiples of 7? If this method was extended to test prime numbers up to 200, how far would you need to go ? Kenny says '20 is a square number because $10^2 = 20$'. Explain why Kenny is wrong. Always / Sometimes / Never: The lowest common multiple of two numbers is found by multiplying the two numbers together. <p>Possible misconceptions</p> <ul style="list-style-type: none"> Many pupils believe that 1 is a prime number – a misconception which can arise if the definition is taken as 'a number which is divisible by itself and 1' A common misconception is to believe that $5^3 = 5 \times 3 = 15$ Extra (Set 1 and 2): The square root of a number can also be negative. 		
Pedagogical notes (implementation)		How will understanding be assessed & recorded (Impact)		
<p><i>A prime number is a number with <u>exactly two</u> factors.</i> <i>This to minimize the misconception of "1"</i> <i>Do not use "divisible by one and itself"</i></p> <p><i>Recognising the language in worded problems : smallest possible, longest possible, in common, same, etc.</i></p>		<p>BAM task 3 – HCF and LCM End of term Assessment in December End of Year Assessment in June/July</p> <p>How can parents help at home?</p> <p>MathsWatch clips (Qualification KS3) N10, N11, N30a, N31a, N31b</p>		
Further reading/discussion				
<p>Reading / Enrichment</p> <p>KM: Perfect numbers: includes use of factors, primes and powers</p> <p>KM: Exploring primes activities: Factors of square numbers; Mersenne primes; LCM sequence; n^2 and $(n + 1)^2$; n^2 and $n^2 + n$; $n^2 + 1$; $n! + 1$; $n! - 1$; $x^2 + x + 41$</p> <p>KM: Use the method of Eratosthenes' sieve to identify prime numbers, but on a grid 6 across by 17 down instead. What do you notice?</p> <p>KM: Square number puzzle</p> <p>KM: History and Culture: Goldbach's Conjectures</p> <p>NRICH: Factors and multiples</p>	<p>Literacy</p> <p>Multiples and Factors Common LCM and HCF</p> <p>Square number, Cube number powers, indices Prime number</p> <p>Extra: link to Linear sequences Triangular number</p>	<p>Numeracy Links</p>	<p>Careers Links</p> <p>Cryptography GCHQ Encryption Basic numeracy requirement for all careers</p>	