Knowledge Rich Curriculum Plan

Year 10 Foundation+ – Number 2

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this, students need to already know that…*	Assessment
To learn how to identify factors, multiples and primes and find HCF and LCM from lists.	• Students will know what factors are and be able to list all factors of a number systematically • Students will know what multiples are and be able to list multiples of a number systematically • Students will know at least the first 10 prime numbers and be able to identify prime numbers from a list. • Students will know how to find of at least 2 numbers by listing.	**Prime Number** – In maths, prime numbers are whole numbers greater than 1, that have only two factors: 1 and the number itself. **Multiple –** A multiple is a number in the given number's multiplication tables **Factor –** A factor is a number that divides into a given number without leaving a remainder.	• Students need a secure understanding of their multiplication tables	
To learn how to express a number as a product of its primes and calculate the HCF and LCM using Venn Diagrams	• Students will know how to find the prime factor decomposition of positive integers and write as a product using index notation. They will also understand that the prime decomposition is unique for every number. • Students will know that the prime factor decomposition of a positive integer is unique – whichever factor pair you start with – and that every number can be written as a product of two factors. • Students will know how to find the lowest common multiple (LCM) and highest common factor (HCF) of two numbers from their prime factorisation using a Venn diagram • Students will know how to solve more complex problems involving HCF or LCM including problems involving real life contexts	**Common –** shared by, coming from, or done by two or more people, groups, or things. **Highest Common Factor** – the largest number that both or all of the numbers can be divided by **Lowest Common Multiple** – the smallest number that is in both numbers' times tables **Product** – in maths, a product is the result of multiplication **Product of Primes** – a product in which every factor is a prime number	• Students need to know how to find factors and multiples for a number	
To learn how to convert between standard form and ordinary numbers.	• Students will know that a number written in standard form is written as a x 10^n where $1 \le a < 10$ • Students will know how to write large and small numbers in standard form in the form a x 10^n where $1 \le a < 10$ • Students will know how to convert numbers from being written in standard form back into ordinary numbers • Students will know when a number is/isn't written in standard form because either a > 10 or a < 0 • Students will know how to adjust a number written in the form a x 10^n where a > 10 or a ≤ 0 so that it is written in standard form (in the form a x 10^n where $1 \le a < 10$) • Students will know how to compare numbers written in standard form and how the x10^n affects the size of one number compared with another	**Standard form -** a way of writing down very large or very small numbers easily, a number is written in standard form when it is written in the form a x 10^n where $1 \le a < 10$	• Students need to be able to multiply and divide by powers of 10	
To learn how to add and subtract numbers written in standard form.	• Students will know that to add and subtract numbers written in standard form they must convert them into ordinary numbers first, add or subtract the numbers and then convert the answer back into standard form (where necessary) • Students will know how to solve more complex problems with numbers written in standard form both with and without a calculator (as appropriate)		• Students will need to know how to convert from standard form to ordinary numbers and vice versa. • Students will need to know how to add and subtract integers and decimals.	

Lesson/Learning Sequence	Intended Knowledge: *Students will know that…*	Tiered Vocabulary	Prior Knowledge: *In order to know this, students need to already know that…*	Assessment
To learn how to multiply and divide numbers written in standard form.	• Students will know and understand that the quickest way to multiply numbers written in standard form we multiply together the 'a' in both number, multiply the 10^n and then combine the two answers • Students will know and understand that the quickest way to divide numbers written in standard form is to divide the 'a' in both number, divide the 10^n and then combine the two answers		• Students will need to know the index laws for multiplication and division	
To learn how to use a calculator effectively	• Students will know how to use a calculator to carry out complex calculations and round answers as appropriate to the question • Students will know how to use a calculator to calculate with numbers written in standard form	Significant figures – the digits in a number that contribute to the degree of accuracy of the value and that we start counting significant figures at the first nonzero digit.	• Students will need to know how to round to decimal places and significant figures	