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| F Unit 1: Number | **Road Map** |
| In this unit you will learn about number. The aims are as follows:**LG1**: Knowledge**LG2**: Application**LG3**: Skills | Assessment Grades |  |  |
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| **Themes** | **Learning Goals/Outcomes/Content** |  |  |  |
| 1a Integers and place value | Use and order positive and negative numbers (integers); |  |  |  |
| Order integers, decimals, use the symbols <, > and understand the ≠ symbol;  |  |  |  |
| Add and subtract positive and negative numbers (integers); |  |  |  |
| Recall all multiplication facts to 10 × 10, and use them to derive quickly the corresponding division facts;  |  |  |  |
| Multiply or divide any number by powers of 10; |  |  |  |
| Multiply and divide positive and negative numbers (integers); |  |  |  |
| Use brackets and the hierarchy of operations (not including powers); |  |  |  |
| Round numbers to a given power of 10; |  |  |  |
| Check answers by rounding and using inverse operations |  |  |  |
| 1b Decimals | Use decimal notation and place value; |  |  |  |
| Identify the value of digits in a decimal or whole number; |  |  |  |
| Compare and order decimal numbers using the symbols <, >; |  |  |  |
| Understand the ≠ symbol (not equal); |  |  |  |
| Write decimal numbers of millions, e.g. 2 300 000 = 2.3 million;  |  |  |  |
| Add, subtract, multiply and divide decimals; |  |  |  |
| Multiply or divide by any number between 0 and 1; |  |  |  |
| Round to the nearest integer; |  |  |  |
| Round to a given number of decimal places;  |  |  |  |
| Round to any given number of significant figures; |  |  |  |
| Estimate answers to calculations by rounding numbers to 1 significant figure; |  |  |  |
| Use one calculation to find the answer to another |  |  |  |

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| 1c Indices, powers and roots | Find squares and cubes: |  |  |  |
| recall integer squares up to 10 x 10 and the corresponding square roots; |  |  |  |
| understand the difference between positive and negative square roots; |  |  |  |
| recall the cubes of 1, 2, 3, 4, 5 and 10; |  |  |  |
| Use index notation for squares and cubes; |  |  |  |
| Recognise powers of 2, 3, 4, 5; |  |  |  |
| Evaluate expressions involving squares, cubes and roots: |  |  |  |
| add, subtract, multiply and divide numbers in index form; |  |  |  |
| cancel to simplify a calculation; |  |  |  |
| Use index notation for powers of 10, including negative powers; |  |  |  |
| Use the laws of indices to multiply and divide numbers written in index notation; |  |  |  |
| Use the square, cube and power keys on a calculator; |  |  |  |
| Use brackets and the hierarchy of operations with powers inside the brackets, or raising brackets to powers;  |  |  |  |
| Use calculators for all calculations: positive and negative numbers, brackets, powers and roots, four operations. |  |  |  |
| 1d Factors, multiples and primes | List all three-digit numbers that can be made from three given integers; |  |  |  |
| Recognise odd and even numbers; |  |  |  |
| Identify factors, multiples and prime numbers; |  |  |  |
| Recognise two-digit prime numbers; |  |  |  |
| List all factors of a number and list multiples systematically; |  |  |  |
| Find the prime factor decomposition of positive integers and write as a product using index notation; |  |  |  |
| Find common factors and common multiples of two numbers; |  |  |  |
| Find the LCM and HCF of two numbers, by listing, Venn diagrams and using prime factors: include finding LCM and HCF given the prime factorisation of two numbers; |  |  |  |
| Understand 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; |  |  |  |
| Solve simple problems using HCF, LCM and prime numbers. |  |  |  |

**Links:**

LG1: You will need to carry out processes involving numbers with confidence and fluency in almost all future GCSE topics.

LG2: You will apply the number processes from this topic to lots of other areas of Maths.

LG3: You will use your problem solving skills and mastery of number to solve complex Mathematical problems such as problems to do with money.