

Number - Structure and calculation	
KS3 No (b)	Order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥
KS4 No (1)	Order positive and negative integers, decimals and fractions; use the symbols =, ≠, <, >, ≤, ≥
KS3 No (a)	Understand and use place value for decimals, measures and integers of any size
KS3 No (d)	Use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative
KS4 No (2)	Apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative; understand and use place value (e.g. when working with very large or very small numbers, and when calculating with decimals)
KS3 No (e)	Use conventional notation for the priority of operations, including brackets, powers, roots and reciprocals
KS3 No (f)	Recognise and use relationships between operations including inverse operations
KS4 No (3)	Recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions; use conventional notation for priority of operations, including brackets, powers, roots and reciprocals
KS3 No (c)	Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property
KS4 No (4)	Use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation theorem
KS4 No (5)	Apply systematic listing strategies including use of the product rule for counting
KS3 No (g)	Use integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5 and distinguish between exact representations of roots and their decimal approximations
KS4 No (6)	Use positive integer powers and associated real roots (square, cube and higher), recognise powers of 2, 3, 4, 5; estimate powers and roots of any given positive number
KS4 No (7)	<u>Calculate with roots, and with integer and fractional indices</u>
KS3 No (p)	Appreciate the infinite nature of the sets of integers, real and rational numbers.
KS4 No (8)	Calculate exactly with fractions, surds and multiples of π ; simplify surd expressions involving squares (e.g. $\sqrt{12} = \sqrt{4 \times 3} = 2\sqrt{3}$) and rationalise denominators
KS3 No (h)	Interpret and compare numbers in standard form $A \times 10^n$ $1 \leq A < 10$, where n is a positive or negative integer or zero
KS4 No (9)	Calculate with and interpret standard form $A \times 10^n$, where $1 \leq A < 10$ and n is an integer.
Number - Fractions, decimals and percentages	
KS3 No (j)	Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100%
KS3 No (i)	Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 2/7 or 0.375 and 8/3)
KS4 No (10)	Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 or 3/8 ; change recurring decimals into their corresponding fractions and vice versa
KS4 No (11)	Identify and work with fractions in ratio problems
KS3 No (k)	Interpret fractions and percentages as operators
KS4 No (12)	Interpret fractions and percentages as operators.
Number - Measures and accuracy	
KS3 No (l)	Use standard units of mass, length, time, money and other measures, including with decimal quantities
KS4 No (13)	Use standard units of mass, length, time, money and other measures (including standard compound measures) using decimal quantities where appropriate
KS3 No (m)	Round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures]
KS3 No (n)	Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x \leq b$
KS3 No (o)	Use a calculator and other technologies to calculate results accurately and then interpret them appropriately
KS4 No (14)	Estimate answers; check calculations using approximation and estimation, including answers obtained using technology
KS4 No (15)	Round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures); <u>use inequality notation to specify simple error intervals due to truncation or rounding</u>
KS4 No (16)	<u>Apply and interpret limits of accuracy, including upper and lower bounds</u>