2.1 Place value, ordering and rounding

Outcome	3a G	4c F	4b F	4a F	5c E	5b E	5a E	6c D	6b D
2.1a Place value	understand and use decimal notation and place value		multiply and divide integers and decimals by 10, 100, 1000 and explain the result	read and write positive integer powers of 10	multiply and divide integers and decimals by 0.1, 0.01			extend knowledge of integer powers of 10	recognise the equivalence of 0.1, 1/10 and 10^{-1}
2.1b Using decimals	compare and order decimals in different contexts	know that when comparing measurements the units must be the same	order decimals						
2.1c Rounding				round positive whole numbers to the nearest 10, 100 or 1000, and decimals to the nearest whole number or one decimal place	round positive numbers to any given power of 10	round decimals to the nearest whole number or to one or two decimal places			use rounding to make estimates and to give solutions to problems to an appropriate degree of accuracy

2.1 Place value, ordering and rounding

6a D	7c C	7b C	7a B	8c B	8b A	8a A	EP A*
multiply and divide by any integer power of 10				express numbers in standard index form, both in conventional notation and on a calculator display			
			convert between ordinary and standard index form representations		use standard index form to make sensible estimates for calculations involving multiplication and/or division		
	round to a given number of significant figures	use significant figures to approximate answers when multiplying or dividing large numbers		understand how errors can be compounded in calculations		understand upper and lower bounds	

2.2 Integers, powers and roots

Outcome	3a G	4c F	4b F	4a F	5c E	5b E	5a E	6c D	6b D
2.2a Directed numbers			understand negative numbers as positions on a number line			order, add and subtract integers in context		add, subtract, multiply and divide integers	
2.2b Multiples				recognise and use multiples, factors, primes (less than 100), common factors, highest common factors and lowest common multiples in simple cases	use simple tests of divisibility			use multiples, factors, common factors, highest common factors, lowest common multiples and primes	
2.2c Squares and roots					recognise the squares of numbers to at least 12 x 12 and the corresponding roots		recognise the first few triangular numbers	use squares, positive and negative square roots, cubes and cube roots, and index notation for small positive integer powers	
2.2d Indices									
2.2e Roots as indices									

2.2 Integers, powers and roots

6a D	7c C	7b C	7a B	8c B	8b A	8a A	EP A*
find the prime factor decomposition of a number	use the prime factor decomposition of a number						
	use ICT to estimate square roots and cube roots						
		use index notation for integer powers	know and use the index laws for multiplication and division of positive integer powers		use index notation with negative and fractional powers, recognising that the index laws can be applied to these as well	use inverse operations, understanding that the inverse operation of raising a positive number to power n is raising the result of this operation to power 1/n	understand and use rational and irrational numbers
							know that fractional indices are equivalent to the inverse root

2.3 Fractions, decimals, percentages, ratio and proportion

Outcome	3a G	4c F	4b F	4a F	5c E	5b E	5a E	6c D	6b D
2.3a Expressing fractions	use fractions to describe parts of shapes		use diagrams to compare two or more simple fractions	express a smaller whole number as a fraction of a larger one	simplify fractions by cancelling all common factors and identify equivalent fractions	use division to convert a fraction to a decimal; convert improper fractions to mixed numbers and vice versa	convert terminating decimals to fractions		recognise that a recurring decimal is a fraction
2.3b Fraction operations					calculate simple fractions of quantities and measurements (whole number answers); add and subtract simple fractions and those with common denominators	add and subtract fractions by writing them with a common denominator	multiply a fraction by an integer	multiply and divide an integer by a fraction	calculate fractions of quantities (fraction answers)
2.3c Expressing percentages		understand percentage as the 'number of parts per 100'			calculate simple percentages and use percentages to compare simple proportions		interpret percentage as the operator 'so many hundredths of' and express one given number as a percentage of another	calculate percentages and find the outcome of a given percentage increase or decrease	
2.3d Equivalence of fractions, decimals and percentages					recognise the equivalence of percentages, fractions and decimals				
2.3e Ratio					use direct proportion in simple contexts; understand the relationship between ratio and proportion	use ratio notation, simplify ratios and divide a quantity into two parts in a given ratio	solve simple problems involving ratio and proportion using informal strategies	apply understanding of the relationship between ratio and proportion; simplify ratios, including those expressed in different units, recognising links with fractions notation	divide a quantity into two or more parts in a given ratio

2.3 Fractions, decimals, percentages, ratio and proportion

6a D	7c C	7b C	7a B	8c B	8b A	8a A	EP A*
order fractions by writing them with a common denominator or by converting them to decimals		understand the equivalence of simple algebraic fractions	Know that a recurring decimal is an exact fraction.	distinguish between fractions with denominators that have only prime factors 2 or 5 (terminating decimals), and other fractions (recurring decimals)	use an algebraic method to convert a recurring decimal to a fraction		
multiply and divide two fractions		use efficient methods to add, subtract, multiply and divide fractions, interpreting division as a multiplicative inverse	Cancel common factors before multiplying or dividing.	understand and apply efficient methods to add, subtract, multiply and divide fractions, interpreting division as a multiplicative inverse			
recognise when fractions or percentages are needed to compare proportions	solve problems involving percentage changes			calculate an original amount when given the transformed amount after a percentage change	use calculators for revers percentage calculations by doing an appropriate division		
use the equivalence of fractions, decimals and percentages to compare proportions							
use the unitary method to solve simple problems involving ratio and direct proportion	use proportional reasoning to solve problems, choosing the correct numbers to take as 100%, or as a whole	compare two ratios	interpret and use ratio in a range of contexts	understand and use proportionality and calculate the result of any proportional change using multiplicative methods		calculate an unknown quantity from quantities that vary in direct proportion using algebraic methods where appropriate	understand and use direct and inverse proportion; solve problems involving inverse proportion (including inverse squares) using algebraic methods