Year 7 Number 1

Place Value, Rounding and Estimation

Calculations with integers and decimals (Including negative numbers and algebra)

	Knowledge, Skills, Understanding	
Higher	Pupils/I can: Use one calculation to find the answer to another Understand that each of the headings in the place value system, to the right of the tens column, can be written as a power of ten Write numbers as a decimal number of millions or thousands, e.g. 23 600 000 as 23.6 million Round numbers and measures to an appropriate degree of accuracy (dp or sig fig) Use numbers of any size rounded to 1 significant figure to make standardized estimates for calculations with one step Know there are different ways of finding an approximate answer Estimate answers to calculations by rounding numbers to 1 sig. fig Check reasonableness of answers Estimate answers to one- or two-step calculations Use standard column procedures to add and subtract integers and decimals of any size Understand the effect of multiplying or dividing any number between 0 and 1 Use knowledge of place value to calculate the product or division of two decimals where one or both are between 0 and 1. Divide integers and decimals, including by decimals such as 0.6 and 0.06 (divisions related to 0.t × 0.t or 0.t × 0.0h, 0.0h × 0.t and 0.0h × 0.0h) Multiply and divide by decimals, dividing by transforming to division by an integer Recognise and use relationships between operations, including inverse operations simplify algebraic expressions by collecting like terms Use arithmetic operations with algebra Add and subtract decimals - positive and negative Add and subtract positive integers from negative integers Multiply and divide decimals - positive and negative To understand the difference between squaring a negative number and subtracting a squared number within a more complex calculation	

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	Knowledge, Skills, Understanding	
Intermediate	Pupils/I can: Be able to order negative decimals. Decimals should be to 2 or 3 significant figures (ascending and descending) Understand the effect of multiplying by any integer power of 10 Understand the effect of dividing by any integer power of 10 Round numbers to significant figures Make estimates and approximations of calculations - use a range of ways to find an approximate answer Check a result by considering if it is of the right order of magnitude Work with numbers rounded to whole numbers or to 1 or 2 decimal places to estimate solutions Use rounding to the nearest 10 or a nice number, e.g. 62 to 63 when dividing by 9 etc. use symbols = , ≠, <, >, ≤, ≥ Be able to add and subtract integers and decimal with varying numbers of decimal places Extend written methods to U.t × U Multiply integers and decimals with one or two places by single-digit whole numbers Use inverse operations Divide decimals with one or two places by single-digit whole numbers Be able to multiply and divide any number by 0.1 and 0.01 Use mental strategies for multiplication - doubling and halving strategies Be able to use > or < correctly between two negative decimals. Decimals should be to 2 or 3 significant figures simplify algebraic expressions by collecting like terms Use arithmetic operations with algebra Add and subtract decimals - positive and negative Add and subtract positive integers from negative integers Multiply and divide decimals - positive and negative	

Year 7 Number 1

Place Value, Rounding and Estimation

Calculations with integers and decimals (Including negative numbers and algebra)

	Knowledge, Skills, Understanding	
Foundation	Pupils/I can: Able to order positive and negative integers Able to order positive decimals. Decimals should be to 4 or 5 significant figures (Ascending and Descending) Able to use > or < correctly between two positive decimals. Decimals should be to 4 or 5 significant figures Know what each digit represents in numbers with up to two decimal places Put digits in the correct place in a calculation Compare decimals in different contexts Understand and use decimal notation and place value Round positive whole numbers to the nearest 10, 100 or 1000 Round decimals to the nearest whole number Approximate before carrying out an addition or subtraction Use standard column procedures to add and subtract whole numbers Understand addition and subtraction as they apply to whole numbers and decimals Use standard column procedures to add and subtract decimals with up to two places Apply four operations in correct order to integers Use notation and symbols correctly Simplify simple linear algebraic expressions by collecting like terms (e.g. a + a + a, 3b + 2b) Know by heart multiplication facts up to 10 × 10 Partition to multiply mentally TU × U Able to double and half numbers Understand that halving is the reverse of doubling Multiply and divide integers by 10 and 100, and explain the effect Extend written methods to HTU × U Multiply and divide decimals by 10, 100, 1000, and explain the effect Know the result of multiplying a number by 0 Understand multiplication as it applies to whole numbers and decimals Understand division as it applies to whole numbers and decimals Extend written methods to HTU ÷ U and TU × TU Check a result by working it backwards Add, subtract multiply and divide integers - positive and negative Apply simple tests of divisibility (2, 3, 4, 5, 6, 9, 10, 25) Recognise and use multiples and factors (divisors) and use simple tests of divisibility	