Year 6 Autumn Term

Mathematical aspect	Mathematical themes	National Curriculum statement
Weeks 1 & 2	**Number and arithmetic** Understand numbers up to 7/8 digits - place value Read, write and say numbers up to 7 digits To know the value of each digit on 7/8 -digit numbers Comparing and ordering numbers including negative numbers Rounding to the nearest 10, 100 and 1000. Expose rounding on a number line/ rule of 5 and above. Identifying the correct digit when rounding to the nearest 10, 100 or 1000 and degrees of accuracy To be able to read, write and say numbers to 10, 000,000 using the comma separator Expose rounding on a number line/ rule of 5 and above. Identifying the correct digit when rounding to the nearest 10, 100 or 1000 Mental and written addition and subtraction of large numbers Mental calculations strategies – making good choices about what to do in my head, jottings and when a written method is needed. Recognising the arithmetic in the question so they can choose and effective method. Eg 2999 – 1242 being seen as 3000 as 1243. Use negative numbers in context, and calculate intervals across zero. See patterns and explain them. Realise that 0 counts as a number and has a place on the number line. Understand the concept of negative numbers. Use a number line to add and subtract	To read, write, order and compare numbers at least to 10,000,000 and determine the value of each digit. To round any whole number to a required degree of accuracy. To solve number problems and practical problems that involve all of the above. To perform mental calculations, including with mixed operations and large numbers. Use negative numbers in context, and calculate intervals across zero. Solve number and practical problems that involve negative numbers.
Weeks 3-5	**Written methods: <u>Revise addition and subtraction, multiplication and division methods</u>** Using effective processors so arithmetic is secure and applying bond knowledge. Efficiency and accuracy, and procedural competence Using rounding to check the reasonableness of the answer	To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication. ● To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret

	Understanding the columns Understanding the process of where to start and how to track through the written method No crossing of boundaries Crossing of boundaries (generating an exchanging digit) Written methods for multiplication and division: HTU × ÷ TU and HTU × ÷ U Using expanded and compact multiplication to secure success and allow for seeing what is happening Short methods with remainders Long division – from statement teach to transfer this into the notation. Then use a partial table to record times tables facts of the divisor. Following the processes including bringing the digit down.	remainders as whole number remainders, fractions or by rounding, as appropriate for the context. ● To solve problems involving addition, subtraction, multiplication and division. ● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Weeks 6-8	**Fractions: comparing and ordering and fractions as numbers** **(refer to fractions policy)** Understand the denominator as equal parts and the numerator as how many equals parts numerator Understanding the whole and parts Variety of models used to understand the structure of fractions Developing understanding or denominator e.g the bigger the denominator the smaller the fraction Strategies for converting mixed numbers and improper fractions and vice-versa Simplifying fractions Understanding the relationship between timetables Understanding how to multiply a fraction by a whole integer Understanding how to read and interpret the calculation eg 6 x 1 ½ can be read as one and a half six times or six, one and a half times Use image to ensure that the understanding of multiplying fractions by fractions is understood. Teach the convention of the reciprocal eg dividing by 2 becomes multiplying be a half.	To compare and order fractions, including fractions >1. ● To use common factors to simplify fractions; use common multiples to express fractions in the same denomination. To add and subtract fractions with different denominators, using the concept of equivalent fractions. ● To multiply simple pairs of proper fractions, writing the answer in its simplest form (1/4 ÷ 1/2 = 1/8). ● To divide proper fractions by whole numbers (1/3 ÷ 2 = 1/6).
Week 9	Opportunities to go richer and deeper Close the gap and revision of concepts. Cross –curriculum learning	

Week 10	**Properties of number** Understanding vocabulary and having clear definitions and generalisations. To use and understand the terms: factor, multiples, primes, squares, cubes composite numbers Understanding the notice of squared and cube numbers	● To identify common factors, common multiples and prime numbers. To recognise and use square and cube numbers
Week 11	**Order of calculations** BODMAS conventions If equal weighting in the calculation, the order in which the calculation needs to be tackles. Practicing how to insert brackets and the fact the answer can be different	To perform mental calculations, including with mixed operations and large numbers. ● To use their knowledge of the order of operations to carry out calculations involving the four operations. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To solve problems involving addition, subtraction, multiplication and division. ● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Seasonal theme: bonfire party to include fractions, fire and ice project etc Translate the new position of the tree onto the Christmas wrapping paper		
Week 12	**Position and movement** Plotting coordinates on the x and y axis in all four quadrants To be able to read and write the notation of coordinates To be able to use the language to describe a shape as being translated Appropriate language and vocabulary	To describe positions on the full co-ordinate grid (all four quadrants). To draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes. Predict missing coordinates using properties of shape