Year 5 Spring Term

Mathematical aspect	Mathematical themes	National Curriculum statement
Weeks 1	**Calculation and arithmetic of addition and subtraction – linked to word problems** Mental and written methods for large numbers Recognising the arithmetic in the question so they can choose and effective method. Eg 2999 – 1242 being seen as 3000 as 1243. 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 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)	To add and subtract whole numbers with more than 4 digits ● To add and subtract numbers mentally with increasingly large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction). ● To add and subtract numbers mentally with increasingly large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ● To solve problems involving numbers up to three decimal places.
Weeks 2-3	**Calculation and arithmetic : Multiplication and division (progression through calculation policy) linked to word problems** Apply tables knowledge in the context of place value eg 6 x 7 = 42 and 60 x 7 etc Understanding the relationships between the multiplication and division statements eg 6 x 7 = 42, 7 x 6 = 42 and 42 ÷ 7 = 6 Facts and mental to written methods Mental strategies for partitioning for multiplication (96 x 6 could be 90 x 6 and 6 x 6) Mental strategies for rearranging for division (96 ÷ 6 could be partitioned into 60 ÷ 6 and 36 ÷6) distributive law Understanding multiplication as commutative	To multiply and divide numbers mentally drawing upon known facts. ● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ● To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ● To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers. To divide numbers up to 4 digits by a one-digit number using

	Short standard method to long method – understanding the process of long multiplication so that the place value is secure Understand the associative law Short division method backed up by models and images (refer to calculation on policy)	the efficient written method of short division and interpret remainders appropriately for the context. ● To multiply and divide numbers mentally drawing upon known facts. ● To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Week 4	**Graphs and time** Read and interpret information in tables and line graphs. Read and interpret information presented in tables eg train/flight etc. Use the data to answer questions, Understand how line graphs are used to represent a given set of data, Constructing line graphs that have more than one data set to represent. Be able to read 24-hour time. Be able to manage the absence of information in a table. Use a timeline to find the difference in time rather than addition or subtraction. Read columns and rows in a table. In line graphs, see the data as cumulative and independent Ensure pupils do not confuse one line for the other when there is more than one set of data. Interpret the relationship between two data sets.	Complete, read and interpret information in tables, including timetables. Solve comparison, sum and difference problems using information presented in a line graph.
Spring themes integrated into number: Contextualised learning: look for opportunities within topic curriculum		
Weeks 5-7	**Fractions: Add and subtract fractions with different denominator** **Multiply fractions** **(refer to fractions policy)** Understand the denominator as equal parts and the numerator as how many equals parts numerator	To compare and order fractions whose denominators are all multiples of the same number. To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. To recognise mixed numbers and improper fractions and

	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	convert from one form to the other; write mathematical statements > 1 as a mixed number: 2/5 + 4/5 = 6/5 = 11/5. To add and subtract fractions with the same denominator and multiples of the same number. To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
Weeks 8-10	**Decimals** Read and write decimal numbers. Compare decimal numbers to find which is greater and smaller. Learn about tenths, hundredths and thousandths. Be able to count, order and record the decimals in different ways. Begin to see equivalence between tenths and hundredths. See a link between different decimal values Be able to compare and order the numbers. Understand how to continue linear number sequences. Round decimals to the nearest whole number. Link tenths and hundredths with dividing by 10 and 100. Understand 1⁄10 is read as 1 tenth and 0.1 is also read as 1 tenth. Know that 1⁄10 = 0.1 = 1 tenth. Have a good understanding of the base-10 number system. Be able to relate 1 tenth to 1 part out of 10 equal parts of 1. Know that there are ten 0.1 in 1. Know that 1 is 10 times as much as 0.1. Understand the role of zero as a placeholder. Be able to relate 1 hundredth to 1 part out of 100 equal parts of 1.	Read and write decimal numbers as fractions [for example, 0.71 = 71/100]. Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Read, write, order and compare numbers with up to three decimal places. Solve problems involving number up to three decimal places.

	Be able to relate 1 hundredth to 1⁄100. Be able to relate 1 hundredth to 0.01. Relate that 1 hundredth = 1⁄100 = 0.01. Know that there are ten 0.01 in 0.1. Know that 0.1 is 10 times as much as 0.01. Identify hundredths using decimals. Convert fractions into tenths and hundredths. Write fractions as decimals. Represent decimals using concrete materials or pictorial representation. Write decimal numbers and mixed numbers on a number line. Convert fractions to compare them with decimals. Refer to decimals as tenths, hundredths and thousandths. Use the 'greater than' and 'less than' symbols. Identify which number is bigger by looking at the first decimal place. Add and subtract decimals – understand place value. Use the column method to add and subtract decimals. Rename and regroup tenths, hundredths and thousandths using the column method. Lay out the column method accurately, using decimal numbers.	
Week 11	**Position and movement** Naming and plotting points on a grid Translation of a shape. Realise translations are described in two movements: horizontal and vertical. Describe the movement of a shape on a grid as the first step in describing reflections. Remember how to write coordinates with x and then y in brackets. Use language of horizontal and verticals to describe the axis. Visualise shapes which are incomplete. Placing mixed n umbers on a number line or an axis. Explain what translation means. Record the vertices of a shape after a translation and write	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

	the coordinates correctly. Use concrete materials to support understanding	
Week 12: Opportunities for richer and deeper learning. Closing the gap. Cross-curriculum learning		