Long Term Planning

National Curriculum Objectives and Small steps Overview

Term 1

Unit	Number and Place Value	Addition and Subtraction
National Curriculum Objectives	• read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above • read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	• Pupils should be taught to: • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign
Small Steps Guidance	**Whiterose Autumn 1 Number and Place Value** • Review learning from Year 4 using cold task to identify gaps to feed into planning. • Read and write numbers to 100000 • Partition numbers to 100000 • Add/Subtract 10, 100 and 1000 • Order and compare 5 digit numbers • Rounding to the nearest 10,100 and 1000 • Read, write, partition numbers to 1 million • Partition numbers to 1 million • Compare numbers to 1 million • Count on and back in powers of 10. • Negative numbers • Roman Numerals	**Whiterose Autumn 2 Addition and Subtraction** • Review learning from Year 4 using cold task to identify gaps to feed into planning. • Add 2 4 digit numbers 1 exchange • Add 2 4 digit numbers multiple exchange • Subtract 4 digit numbers 1 exchange • Subtract 4 digit numbers multiple exchange • Rounding to estimate and check • Inverse operations • Multi-step problems involving addition and subtraction

1 Day a week

Unit	Shape and Angles
National Curriculum Objectives	• Review 2D and 3D shape knowledge from Year 4 including names and properties of 2D and 3D shapes, symmetry, perpendicular/parallel lines, basic angles in shapes, quadrilaterals and types of triangles. (Up to this point there has been a lot of knowledge covered which can be forgotten if not reviewed) • identify 3-D shapes, including cubes and other cuboids, from 2-D representations • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • use the properties of rectangles to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
Small Steps Guidance	• Review 2D and 3D shape names and properties from Year 3 and 4 throughout angles section. • Understand and use degrees • Classify angles • Estimate angles • Measure angles to 180 • Draw lines and angles accurately • Calculate angles around a point • Calculate angles on a straight line • Classify and describe 2D shapes • Regular and irregular polygons • Lengths and angles in shapes. • Identify 3D shapes including cubes and other cuboids.

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Term 2

Unit	Equivalent Fractions	Adding and Subtracting fractions
National Curriculum Objectives	• Compare and order fractions whose denominators are all multiples of the same number • identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, + = = 1] 5 2 5 4 5 6 5 1	• add and subtract fractions with the same denominator and denominators that are multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
Small Steps Guidance	**Whiterose Spring Equivalent Fractions only** • Review learning from Year 4 using cold task to identify gaps to feed into planning. • Fractions of a whole • Comparing fractions using understanding of whole and half • Using models to understand equivalent fractions. • Abstract method for equivalent fractions. • Adding fractions to explore fractions larger than a whole – improper fractions/mixed numbers • Using models to convert between improper and mixed numbers. • Compare and order fractions greater than 1 including number lines	**Whiterose Spring - Adding and subtracting fractions.** • Adding and subtracting fractions to a whole • Adding and subtracting fractions over a whole same denominator (mixed numbers and improper fractions) begin to simplify. • Adding fractions with different denominators under a whole. • Subtracting fractions with different denominators under a whole • Adding mixed fractions with different denominators • Subtracting mixed fractions with different denominators. • Multiplying fractions by integers.

1 Day a week

Unit	Shape and Angles	Statistics (line graphs)
National Curriculum Objectives	Continued from Term 1	• solve comparison, sum and difference problems using information presented in a line graph
Small Steps Guidance		**White rose Autumn** Interpret Charts Comparision sum and difference Introduce line graphs Draw line graphs Use line graphs to solve problems.

Term 3

Unit	Multiplication
National Curriculum Objectives	• multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers • multiply and divide numbers mentally drawing upon known facts
Small Steps Guidance	✓ Multiply by 10, 100 and 1000 (through mental/oral starters) ✓ Divide by 10,100 and 1000 (through mental/oral starters) ✓ Multiply 2 digit by 1 digit (revise expanded and short) ✓ Multiply 3 digit by 1 digit (short) ✓ Multiply 4 digit by 1 digit (short) ✓ Multiply 2 digit by 2 digit (expanded then short) ✓ Multiply a 3 digit number by a 2 digit number ✓ Multiply a 4 digit number by a 2 digit number

1 Day a week

Unit	Properties of Number
National Curriculum Objectives	• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
Small Steps Guidance	**Properties of number** **(This tends to be covered through mental oral starters and individual lessons)** ✓ Identify factors and factor pairs ✓ Identify common factors ✓ Prime numbers ✓ Square numbers ✓ Cube numbers (this may be taught alongside volume depending on children's previous skills)

Term 4

Unit	Division	Fractions Decimals and Percentages
National Curriculum Objectives	• divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. • Review finding fractions of number from Year 4.	• read and write decimal numbers as fractions [for example, 0.71 = 100 71] • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal • Solve problems which require knowing percentage and decimal equivalents of , , , , and those fractions with a denominator of a multiple of 10 or 25. 2 1 4 1 5 1 5 2 5 4
Small Steps Guidance	White rose Spring Term ➢ Multiply by 10, 100 and 1000 (through mental/oral starters) ➢ Divide by 10,100 and 1000 (through mental/oral starters) ➢ Divide 2 digit by 1 digit (including remainders) ➢ Divide 3 digit by 1 digit (including remainders) ➢ Divide 4 digit by 1 digit (including remainders) ➢ Solve problems involving division interpreting remainders. ➢ Use division to find fractions of numbers. Reviewing 4 objectives	Whiterose Spring Term Fractions ➢ Decimals up to 2 places ➢ Decimals as fractions ➢ Understanding thousandths ➢ Thousandths as decimals ➢ Rounding decimals ➢ Comparing and ordering decimals ➢ Understand percentages ➢ Percentage as fraction and decimal. ➢ FDP equivalence ➢ Calculate fractions of quantity ➢ Calculate fractions of amounts ➢ Using fractions as operators. ➢ Calculate 10% of a number ➢ Solving problems with fractions, decimals and percentages.

1 Day a week

Unit	Area and Perimeter
National Curriculum Objectives	• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes
Small steps Guidance	Whiterose Autumn ➢ Measure perimeter ➢ Perimeter on a grid ➢ Perimeter of rectangles ➢ Perimeter of rectilinear shapes ➢ Calculate perimeter ➢ Area of rectangles ➢ Area of compound shapes ➢ Area of irregular shapes

Term 5

Unit	Decimals
National Curriculum Objectives	• read and write decimal numbers as fractions [for example, 0.71 = 100 • 71] • 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
Small Steps Guidance	White Rose Summer ➢ Adding decimals within 1 ➢ Subtracting decimals within 1 ➢ Complements to 1 ➢ Adding decimals crossing the whole ➢ Adding decimals with the same number of decimal places ➢ Adding decimals with a different number of places ➢ Subtracting decimals with the same number of places ➢ Subtracting decimals with a different number of places. ➢ Adding and subtracting wholes and decimals ➢ Decimal sequences ➢ Multiplying decimals by 10, 100 and 1000 ➢ Dividing decimals by 10, 100 and 1000

1 Day a week

Unit	Position and Direction Translation and Reflection
National Curriculum Objectives	• 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.
Small Steps Guidance	Whiterose Summer Term ➢ Describe a position ➢ Draw on a grid ➢ Position on the first quadrant ➢ Translation ➢ Translation with coordinates ➢ Lines of symmetry ➢ Complete a symmetric figure ➢ Reflection ➢ Reflection with coordinates

Term 6

Unit	Measurement – Length, Mass Volume and Capacity	Time
National Curriculum Objectives	• estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] • Find cube numbers and relate to volume • solve problems involving multiplication and division including using their knowledge of cubes • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. •	• solve problems involving converting between units of time • complete, read and interpret information in tables, including timetables
Small Steps Guidance	White Rose Summer ➢ Revise length and mass and solve problems with 4 operations. ➢ What is volume ➢ Compare volume ➢ Cube numbers and volume ➢ Estimate volume ➢ Estimate Capacity ➢ Solve problems with volume and all 4 operations.	Review time objectives from Year 3 and 4 including telling the time and solving problems with time duration ➢ Convert units of time ➢ Read tables including two way tables. ➢ Read timetables.

1 Day a week

Unit	Converting Units	
National Curriculum Objectives	• convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	
Small Steps Guidance	Volume and Mass ➢ ml and l ➢ Imperial units – Pints ➢ mg and g ➢ g and kg ➢ Imperial units- lbs and ozs	Length ➢ Mm and cm ➢ Cm and m ➢ M and km ➢ Imperial- inches, feet and miles