Gainford CE Primary and Preschool

Maths Learning Plan **Term 1**

Year 5

Topic or Activity	Year 5 Term 1 Knowledge Based Learning Objectives
Number: Place Value	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 1000 000
	Interpret negative numbers in context, count forwards and backwards with positive and negative
	whole numbers, including through zero
	Round any number up to 1000 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
Number: Addition & Subtraction	Add and subtract numbers mentally with increasingly large numbers
	Add and subtract whole numbers with more than 4 digits, including using formal written methods
	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
Statistics	Solve comparison, sum and difference problems using information presented in a line graph
	Complete, read and interpret information in tables, including timetables
Number: Multiplication &	Multiply and divide numbers mentally drawing upon known facts
Division	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
	Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)
	Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
	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

Measurement: Perimeter & Area	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres				
	Calculate and compare the area of squares and rectangles including using standard units, square				
	centimetres (cm ²) and square metres (m ²) and estimate the area of irregular shapes				

Year 5 | Autumn Term | Week 1 to 3 - Number: Place Value



Overview Small Steps

Numbers to 10,000 Roman Numerals to 1,000 Round to nearest 10, 100 and 1,000 Numbers to 100,000 Compare and order numbers to 100,000 Round numbers within 100,000 Numbers to a million Counting in 10s, 100s, 1,000s, 10,000s, and 100,000s Compare and order numbers to one million Round numbers to one million Negative numbers

NC 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, 1,000, 10,000 and 100,000

Solve number problems and practical problems that involve all of the above.

Read Roman numerals up to 1,000 (M) and recognise years written in Roman numerals.

Year 5 | Autumn Term | Week 4 to 5 - Number: Addition & Subtraction



Overview Small Steps

- Add whole numbers with more than 4 digits (column method)

 Subtract whole numbers with more than 4 digits (column method)
- Round to estimate and approximate

 Inverse operations (addition and subtraction)
- Multi-step addition and subtraction problems

NC Objectives

Add and subtract numbers mentally with increasingly large numbers.

Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). 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.

Year 5 | Autumn Term | Week 6 to 7 – Statistics



Overview

Small Steps



NC Objectives

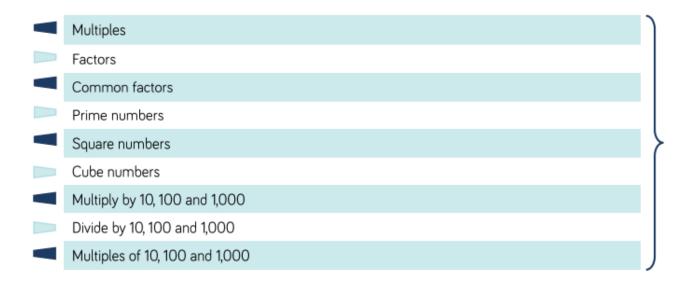
Solve comparison, sum and difference problems using information presented in a line graph.

Complete, read and interpret information in tables including timetables.

Year 5 | Autumn Term | Week 8 to 9 – Number: Multiplication & Division



Overview Small Steps



NC Objectives

Multiply and divide numbers mentally drawing upon known facts.

Multiply and divide whole numbers by 10, 100 and 1,000

Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.

Recognise and use square numbers and cube numbers and the notation for squared (2) and cubed (3)

Solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.

Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.

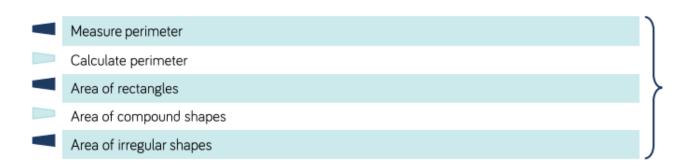
Establish whether a number up to 100 is prime and recall prime numbers up to 19

Year 5 | Autumn Term | Week 10 to 11 - Measurement: Perimeter & Area



Overview

Small Steps



NC Objectives

Measure and calculate the perimeter of composite rectilinear shapes in cm and m.

Calculate and compare the area of rectangles (including squares), and including using standard units, cm², m² estimate the area of irregular shapes.

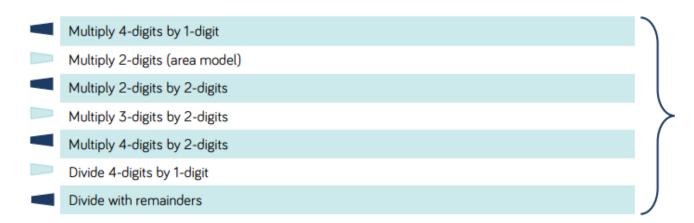
Maths Learning Plan <u>Term 2</u> <u>Year 5</u>

Topic or Activity	Year 5 Term 2 Knowledge Based Learning Objectives				
Number: Multiplication &	Multiply and divide numbers mentally drawing upon known facts				
Division .	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				
	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				
	Solve problems involving addition, subtraction, multiplication and division and a combination of these,				
	including understanding the meaning of the equals sign				
Niverbau Functions	Compare and order fractions whose denominators are all multiples of the same number				
Number: Fractions					
	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 (e.g. $^2/_5 + ^4/_5 = ^6/_5 = 1^1/_5$)				
	Add and subtract fractions with the same denominator and multiples of the same number				
	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and				
	diagrams Not in WRMaths				
Number: Decimals &	Read, write, order and compare numbers with up to three decimal places				
Percentages	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				
	Solve problems involving numbers up to three decimal places				
	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 as a decimal fraction				
	Read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$)				
	Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$, and				
	those with a denominator of a multiple of 10 or 25				

Year 5 | Spring Term | Week 1 to 3 - Number: Multiplication & Division



Overview Small Steps



NC Objectives

Multiply and divide numbers mentally drawing upon known facts.

Multiply numbers up to 4 digits by a one or two digit number using a formal written method, including long multiplication for 2-digit numbers.

Divide numbers up to 4 digits by a 1digit number using the formal written method of short division and interpret remainders appropriately for the context.

Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.

Year 5 | Spring Term | Week 4 to 9 - Number: Fractions



Overview Small Steps

- Equivalent fractions
- Improper fractions to mixed numbers
- Mixed numbers to improper fractions
- Number sequences
- Compare and order fractions less than 1
- Compare and order fractions greater than 1
- Add and subtract fractions
- Add fractions within 1
- Add 3 or more fractions
- Add fractions
- Add mixed numbers
- Subtract fractions
- Subtract mixed numbers
- Subtract breaking the whole

NC Objectives

Compare and order fractions whose denominators are 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 $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$

Add and subtract fractions with the same denominator and denominators that are multiples of the same number.

Year 5 | Spring Term | Week 10 to 11 - Number: Decimals & Percentages



Overview

Small Steps



NC Objectives

Read, write, order and compare numbers with up to three decimal places.

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.

Solve problems involving number up to three decimal places.

Recognise the percent 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 $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25

Maths Learning Plan <u>Term 3</u> <u>Year 5</u>

Topic or Activity	Year 5 Term 3 Knowledge Based Learning Objectives				
Number: Decimals	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents				
	Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits				
	in the answer as ones, tenths and hundredths Y4 objective				
	Convert between different units of metric measure (e.g. kilometre and metre; centimetre and millimetre)				
Geometry: Properties of Shape	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations				
, a coperate of chapt	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				
	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles				
	Draw given angles, and measure them in degrees °				
	Identify angles at a point and one whole turn (total 360°); angles at a point on a straight line and ½ a				
	turn (total 180°); other multiples of 90°				
Geometry: Position & Direction	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				
Measurement: Converting Units	Convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre;				
	centimetre and millimetre; gram and kilogram; litre and millilitre)				
	Understand and use equivalences between metric units and common imperial units such as inches,				
	pounds and pints				
	Solve problems involving converting between units of time				
Measurement: Volume	Estimate volume (e.g. using 1 cm ³ blocks to build cubes and cuboids) and capacity (e.g. using water)				
	Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using				
	decimal notation including scaling.				

Year 5 | Summer Term | Week 1 to 4 - Number: Decimals



Overview

Small Steps

Adding decimals within 1

Complements to 1

Adding decimals – crossing the whole

Adding decimals with the same number of decimal places

Subtracting decimals with the same number of decimal places

Adding decimals with a different number of decimal places

Subtracting decimals with a different number of decimal places

Subtracting decimals with a different number of decimal places

Adding and subtracting wholes and decimals

Decimal sequences

Multiplying decimals by 10, 100 and 1,000

Dividing decimals by 10, 100 and 1,000

NC Objectives

Recognise and write decimal equivalents of any number of tenths or hundredths.

Find the effect of dividing a one or two digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths

<u>Solve simple measure</u> and money <u>problems involving fractions and</u> decimals to two decimal places.

Convert between different units of measure [for example, kilometre to metre]



