Block by block Yearly Overview
Year 5

TERM 1

Using and Applying
- Solve one and two-step problems involving whole numbers, simple fractions and decimals, money and measures, including time and temperature, perimeter and applying multiplicative scaling
- Represent a problem using number sentences involving more than one operation; draw and interpret diagrams and graphs
- Report orally on solutions to problems, providing explanations and decisions supported with an argument and reasons
- Identify and describe patterns, properties and relationships to establish invariants, apply in unfamiliar situations to make deductions; investigate a given statement and test with examples; collect data to create graphs and support an argument

Block A Term 1

Place Value
- Count in multiples of 6 and 9
- Recognise the place value in each digit of a 4 digit number (Th, H, T, Units or ones)
- Round any number to the nearest 10, 100 1000
- Order and compare numbers beyond 1000

Addition and Subtraction
- Add and subtract mentally 3 digit by 3 digit numbers using knowledge of number bonds
- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- Estimate and use inverse operations to check answers to a calculation

Measurement
- Convert between different units of measurement in LENGTH (km and m, cm and m, cm and mm)
- Understand and use equivalences between metric units and common imperial units in length- feet and inches
- Measure and calculate the perimeter of a rectilinear figure including squares in cm and m
- Estimate, compare and calculate different measures of length

Geometry (Properties of Shape)
- Compare and classify geometric shapes including quadrilaterals and triangles based on their properties and sizes

- Identify lines of symmetry in 2-D shapes presented in different orientations
- Complete a simple symmetric figure with respect to a specific line of symmetry

Block B Term 1

Place Value
- Count in multiples of 7

(see multiplication and division domain for other mental objectives)

Multiplication and Division
- Recall multiplication and division facts for 12 x12
- Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers.
- Recognise and use factor pairs and commutativity in mental calculations
- Multiply two digit and three digit numbers by a one digit number using formal written layout.
- Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Fractions
- Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten
- Recognise and write decimal equivalents of any number of tenths or hundredths
- Recognise and write decimal equivalents to ¼ ½ ¾
- 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
- Round decimals with one decimal place to the nearest whole number
- Compare numbers with same number of decimal places up to two decimal places
- Solve simple measure and money problems involving decimals to two decimal places

Statistics
- Interpret and present discrete and continuous data using appropriate graphical methods including bar charts and time graphs
- Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs

Block C Term 1

Place Value

- Count in multiples of 25
- Count backwards through zero to include negative numbers
- Find 1000 more or less than a given number
- Round any number to the nearest 10, 100, 1000
- Identify represent and estimate numbers using different representations

Addition and Subtraction
- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why

Measurement
- Convert between different units of metric measures in WEIGHT/ MASS (kg and g)
- Understand and use equivalences between metric units and common imperial units in weight (pounds and stones)
- Use all four operations to solve problems involving mass, including scaling

Geometry (Properties of Shape)
- Identify acute and obtuse angles and compare and order angles up to two rights angles by size

Block D Term 1

Place Value
- Count in multiples of 25
- Count backwards through zero to include negative numbers
- Find 1000 more or less than a given number
- Round any number to the nearest 10, 100, 1000
- Identify represent and estimate numbers using different representations

Multiplication and Division
- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
- Multiply numbers up to 4 digits by a one or two digit number using a formal written method
- Multiply and divide numbers mentally drawing upon known facts

- 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

Fractions
- Recognise and show, using diagrams, families of common equivalent fractions
- Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
- Add and subtract fractions with the same denominator
- Recognise and write decimal equivalents of any number of tenths or hundredths
- Recognise and write decimal equivalents to ¼ ½ ¾
- solve simple measures and money problems involving fractions

Geometry (Position and Direction)
- Describe the positions on a 2D grid as co-ordinates in the first quadrant
- Plot specified points and draw sides to complete a polygon
- Describe movements between positions as translations of a given unit to the left/right and up/down

TERM 2

Using and Applying
- Solve one and two-step problems involving whole numbers, simple fractions and decimals, money and measures, including time and temperature, perimeter and applying multiplicative scaling
- Represent a problem using number sentences involving more than one operation; draw and interpret diagrams and graphs
- Report orally on solutions to problems, providing explanations and decisions supported with an argument and reasons
- Identify and describe patterns, properties and relationships to establish invariants, apply in unfamiliar situations to make deductions; investigate a given statement and test with examples; collect data to create graphs and support an argument

Block A Term 2

Place Value
- Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit
- Round any number up to 1,000,000 to the nearest 10, 100, 1000
- Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000

Addition and Subtraction
- Add and subtract numbers with more than 4 digits (up to 10,000) using the formal written methods (columnar addition and subtraction)
- Use rounding to check answers to calculations and determine, in the context of the problem, levels of accuracy

Measurement
- Convert between different units of metric measures in CAPACITY/ VOLUME (l and ml)
- Understand and use equivalences between metric units and common imperial units in capacity (pints)
- Estimate volume (e.g. using 1cm³ blocks to build cubes and cuboids) and capacity (e.g. using water)
- Use all four operations to solve problems involving capacity, including scaling

Geometry (Properties of Shape)
- 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 360˚; angles at a point on a straight line and ½ a turn (total 180˚); other multiples of 90˚
- 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

Block B Term 2

Place Value
- Revise counting in multiples of 4 and 8
- Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000

Multiplication and division
- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- 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
- Establish whether a number up to 100 is prime and recall prime numbers up to 19
- 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 addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

Fractions
- Read and write decimal numbers as fractions (e.g. 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 and order and compare numbers with up to three decimal places.

Statistics
- Solve comparison, sum and difference problems using information presented in a line graph (link to x and ÷ context)
- Complete, read and interpret information in tables, including timetables

Block C Term 2

Place Value
- Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
- Solve number and practical problems involving numbers up to 1,000,000

Addition and Subtraction

- Add and subtract numbers mentally with increasingly large numbers
- Add and subtract numbers with more than 4 digits (up to 10,000) using the formal written methods (columnar addition and subtraction)
- Use rounding to check answers to calculations and determine, in the context of the problem, levels of accuracy

Measurement
- Solve problems involving converting between units of time
- Use all four operations to solve problems involving time
- Revise any other gaps in time knowledge from previous year's PoS

Geometry (Properties of Shape)
- 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

Block D Term 2

Place Value
- Revise counting in multiples of 3, 6, 12
- Solve number and practical problems involving numbers up to 1,000,000

Multiplication and 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
- Establish whether a number up to 100 is prime and recall prime numbers up to 19
- 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.
- Recognise and use square numbers and cube numbers, and the notation for squared (^{2})
- Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

Fractions
- 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
- to 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

Shape (Position and Direction)
- Identify, describe and represent the position of a shape following a reflection (and translation) using the appropriate language and know that the shape has not changed

TERM 3

Using and Applying
- Solve one and two-step problems involving whole numbers, simple fractions and decimals, money and measures, including time and temperature, perimeter and applying multiplicative scaling
- Represent a problem using number sentences involving more than one operation; draw and interpret diagrams and graphs
- Report orally on solutions to problems, providing explanations and decisions supported with an argument and reasons
- Identify and describe patterns, properties and relationships to establish invariants, apply in unfamiliar situations to make deductions; investigate a given statement and test with examples; collect data to create graphs and support an argument

Block A Term 3

Place Value
- Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 1,000,000
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero.

Addition and Subtraction
- Add and subtract numbers with more than 4 digits (up to 1,000,000) using the formal written methods (columnar addition and subtraction)
- Add and subtract numbers mentally with increasingly large numbers
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Measurement
- Measure and calculate the perimeter of composite rectilinear shapes in cm and m
- Calculate and compare the area of rectangles (including squares) using standard units cm² and m² and estimate the area of irregular shapes
- Solve problems involving converting between units of time

Geometry (Properties of Shape)
- Draw given angles, and measure them in degrees
- Identify- angles at a point and one whole turn 360˚; angles at a point on a straight line and ½ a turn (total 180˚); other multiples of 90˚

Statistics
- Solve comparison, sum and difference problems using information presented in a line graph (link to x and ÷ context)
- Complete, read and interpret information in tables, including timetables

Block B Term 3

Place Value

- Revise counting in multiples of 9 and 25
- Solve number and practical problems involving numbers up to 1,000,000

Multiplication and Division

- Know and use the vocabulary of prime numbers, prime factors and composite (non prime) numbers
- 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 whole numbers and those involving decimals by 10, 100 and 1000
- Recognise and use square numbers and cube numbers and the notation (^{2} ^{3})
- Solve problems involving addition, subtraction, multiplication and division including using their knowledge of factors and multiples, squares and cubes
  Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Fractions

- 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
- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- 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 hundred and as a decimal fraction
- Solve problems which require knowing percentage and decimal equivalents of ½ ¼ 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25

Block C Term 3

Place Value

- 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 through zero.

Addition and Subtraction

- Add and subtract numbers mentally with increasingly large numbers
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Measurement

- Calculate and compare the area of rectangles (including squares) using standard units cm² and m² and estimate the area of irregular shapes
- Use all four operations to solve problems involving length, mass, volume and money using decimal notation including scaling

Geometry (Properties of Shape)
- 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

Block D Term 3

Place Value
- Revise counting in multiples of 7
- Solve number and practical problems involving numbers up to 1,000,000

Multiplication and 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
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
- Recognise and use square numbers and cube numbers and the notation (^{2} ^{3})
- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Fractions
- 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 hundred and as a decimal fraction
- Solve problems which require knowing percentage and decimal equivalents of ½ ¼ 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25

Geometry (Position and Direction)
- Identify, describe and represent the position of a shape following a translation and (reflection) using the appropriate language and know that the shape has not changed