Year 6 End of Unit Milestones

Autumn Term – TEXTBOOK 6A
Chapter 1 Number and Place Value: Numbers to 10 Million

By the end of this unit, children will be able to:
- create and identify numbers to 10 000 000
- to write in numerals and words numbers to 10 000 000
- construct and record numbers to 10 000 000
- recognise the value of digits to 10 000 000
- compare and order numbers to 10 000 000 using place value
- round numbers to 10 000 000 to the nearest million, hundred thousand and ten thousand.

Autumn Term – TEXTBOOK 6A
Chapter 2 Calculations: Four Operations on Whole Numbers

By the end of this unit, children will be able to:
- use multiple operations and create expressions from a picture
- use the order of operations to solve expressions
- create and solve expressions using the four operations
- multiply numbers by multiples of 10
- use number bonds as a key strategy in multiplication
- multiply 3- and 4-digit numbers by 2-digit numbers with regrouping and renaming
- use both number bonds and the column method as key strategies
- estimate products of multiplying 3- and 4-digit numbers by a 2-digit number
- divide 3-digit numbers by 2-digit numbers using a variety of strategies
- use number bonds, short and long division and bar models to facilitate division by 2-digit numbers
- use number bonds, long and short division as key methods
- divide 3-digit numbers by 2-digit numbers writing remainders as decimals
- use pictorial representations to support word problems
- solve word problems involving multiple operations, including multiplication and division
- find common multiples in real-life situations
- common multiples in tandem with knowledge of time
- use multiplication and division to find largest common factors
- use prime numbers to create other numbers and to explore prime numbers above 100.

Autumn Term – TEXTBOOK 6A
Chapter 3 Fractions, Decimals & Percentages: Fractions

By the end of this unit, children will be able to:
- use concrete materials to simplify fractions; to recognise equivalence in fractions to ¼
- simplify fractions using division and common factors
- represent fractions using concrete materials and pictorial representations
- compare fractions and place them in order from smallest to largest
- compare and order fractions by finding common denominators
- compare and order fractions using common factors.
- add and subtract fractions with different denominators
- add and subtract mixed numbers, including fractions with different denominators
- add and subtract fractions with different denominators
- add and subtract mixed numbers
- multiply fractions using pictorial representations and abstract methods
- determine if the commutative law applies to fractions
- multiply fractions using concrete materials and pictorial representations and use concrete materials to understand and solve the multiplication of fractions
- to simplify equations using pattern blocks
- divide a fraction by a whole number and use pictorial representation to divide whole numbers into fractions
- divide fractions by whole numbers using concrete materials and pictorial representations
- divide fractions when the numerator and divisor are not easily divisible
- divide fractions by a whole number and use pictorial representations to support division.

Autumn Term – TEXTBOOK 6A
Chapter 4 Fractions, Decimals, Percentages: Decimals

By the end of this unit, children will be able to:
- read and write decimals to thousandths
- use concrete materials to represent decimals
- divide whole numbers by larger whole numbers;
- use Base 10 materials to represent tenths, hundredths and thousandths
- divide whole numbers that give rise to decimals
- calculate decimal fraction equivalents using short division
- convert fractions into decimals using bar models and short and long division
- use short division as the key strategy for turning fractions into decimals
- multiply decimals by whole numbers using partitioning or the worded method to help find the solution
- multiply whole numbers that include a decimal by other whole numbers; to use partitioning and the worded method as key strategies.
- multiply decimals by whole numbers, including regrouping and renaming
- multiply decimals by whole numbers using a variety methods (e.g. mental methods, column method, long multiplication)
- divide decimals using number bonds and number discs as the key strategies
- divide decimals using bar models, number bonds and long division as key strategies, including regrouping and renaming
- multiply decimals by a 2-digit whole number using number discs and the column method

● divide decimals by 2-digit numbers using number bonds and column method.

Spring Term – TEXTBOOK 6A
Chapter 5 Measurement
By the end of this unit, children will be able to: ● convert common measurements into metres, centimetres and millimetres ● convert units of measure into different units; to use knowledge of decimals and fractions to help convert units ● convert metres into kilometres as units of measure ● convert units of mass from grams to kilograms using decimals and fractions. ● convert units of volume from millilitres to litres.

Spring Term – TEXTBOOK 6B
Chapter 7 Fractions, Decimals & Percentages: Percentage
By the end of this unit, children will be able to: ● find the percentage of a whole number using division and multiplication ● use bar modelling as a pictorial approach to calculating percentage ● find the percentage of a quantity ● use bar model diagrams to support the division and multiplication of numbers towards the percentage. ● use percentage, bar models and fractions to compare amounts.

Spring Term – TEXTBOOK 6B
Chapter 8 Ratio and Proportion: Ratio
By the end of this unit, children will be able to: ● use ratios and fractions to compare objects ● find the relationship between ratios, percentages and fractions ● determine the ratio of a quantity using concrete materials ● simplify ratios using concrete materials in addition to division

- compare more than two quantities using the term 'ratio'
- use bar models to express ratios where there is more than one quantity
- compare quantity using both fractions and ratios
- compare quantities using bar models and common factors
- use multiplication and division to simplify ratios
- compare numbers using ratios and make decisions about simplifying ratios using division

Spring Term – TEXTBOOK 6B

Chapter 9 Algebra

By the end of this unit, children will be able to:
- write algebraic expressions using each of the four operations.
- evaluate algebraic expressions including the use of inverse operations
- to write and use formulae to solve problems
- replace a letter/variable with a number then solve the equation

Spring Term – TEXTBOOK 6B

Chapter 10 Measurement: Area and Perimeter

By the end of this unit, children will be able to:
- find the area and perimeter of rectangles
- calculate perimeter using the known area and vice versa
- find and calculate the area of a parallelogram
- use concrete materials and prior understanding of area to construct a formula for the area
- use prior knowledge of area to determine and solve the area of a triangle
- use and apply the formula for the area of a rectangle to solve problems involving triangles
- calculate the area of a triangle using a formula
- find the area of a parallelogram using an understanding of triangles
- use concrete materials to find the area of a parallelogram.

Spring Term – TEXTBOOK 6B
Chapter 11 Measurement: Volume
By the end of this unit, children will be able to: ● find the volume of cubes and cuboids using concrete materials ● determine the formula for the volume of cubes and cuboids and apply it to calculate the volume of shapes ● estimate the volume of objects and spaces ● calculate the volume of boxes using the formula for volume of cubes and cuboids ● apply the formula for the volume of a cube or cuboid.

Spring Term – TEXTBOOK 6B
Chapter 12 Properties and Shapes: Geometry
By the end of this unit, children will be able to: ● solve problems involving angles(including opposite angles) ● solve problems involving angles without protractors ● determine and show the sum of the angles inside a triangle and in quadrilaterals ● use the knowledge of angles inside a triangle and a quadrilateral to solve problems involving angles in other shapes ● name the parts of a circle ● calculate diameter and radius using parts of a circle

Spring Term – TEXTBOOK 6B
Chapter 13 Geometry: Position and Movement
By the end of this unit, children will be able to: ● represent negative numbers on both vertical and horizontal number lines ● describe the positions of objects on a coordinate grid; to use x and y axes to determine the position of objects on a grid ● describe the position of points using coordinates on a grid ● recognise and draw polygons on a coordinate grid ● describe the translation of shapes on a coordinate grid ● translate and reflect shapes on a coordinate grid ● reposition objects so they can be reflected in the x and y axis as the mirror line.

Summer Term – TEXTBOOK 6B
Chapter 14 Graphs and Averages
By the end of this unit, children will be able to: ● calculate the average (mean) of sets of values ● solve problems involving the mean ● use the mean and the number of values to calculate the total ● show information on graphs ● transfer information from a table to a pie chart ● read and interpret pie charts ● use percentages in pie charts. ● use knowledge of angles to interpret pie charts ● interpret the information in line graphs that show distance and time. ● read and interpret line graphs ● answer questions about the information in line graphs.

Summer Term – TEXTBOOK 6B
Chapter 15 Place Value and Number: Negative Numbers
By the end of this unit, children will be able to: ● add and subtract negative numbers using a number line ● solve problems using negative numbers.

Summer Term – TEXTBOOK 6A
Chapter 6: Word Problems
By the end of this unit, children will be able to: ● To use bar models to solve word problems involving the four operations. ● To use the bar model heuristic to solve word problems involving money. ● To use the bar model heuristic to solve complex word problems involving ratio. ● To use the bar model heuristic to solve complex word problems involving time. ● To solve word problems that apply the bar model heuristic and involve fractions. ● To create and solve complex word problems using the four operations.

Summer Term – TEXTBOOK 6B
Chapter 9: Algebra

By the end of this unit, children will be able to:
- To determine a pattern using concrete materials and pictorial representation; to use a table to identify a repeating pattern; to
- express a rule using a letter or symbol.
- To determine a pattern using concrete materials and pictorial representation; to use a table to identify a repeating pattern; to express
- the relationship between consecutive numbers in terms of a symbol or letter.
- To determine a pattern using concrete materials and pictorial representation; to use a table to identify a pattern; to express the
- relationship between consecutive numbers in terms of a symbol or letter.
- To determine a pattern using concrete materials and pictorial representation; to use a table to identify a pattern; to express
- unknown numbers in terms of a letter or symbol, including using a number before a letter for multiplication.
- To use a table to identify a pattern; to write algebraic expressions using each of the four operations.

Summer Term – TEXTBOOK 6B
Chapter 10: Geometry

By the end of this unit, children will be able to:
- To determine a pattern using concrete materials and pictorial representation; to use a table to identify a repeating pattern; to
- express a rule using a letter or symbol.
- To determine a pattern using concrete materials and pictorial representation; to use a table to identify a repeating pattern; to express
- the relationship between consecutive numbers in terms of a symbol or letter.
- To determine a pattern using concrete materials and pictorial representation; to use a table to identify a pattern; to express the
- relationship between consecutive numbers in terms of a symbol or letter.
- To determine a pattern using concrete materials and pictorial representation; to use a table to identify a pattern; to express
- unknown numbers in terms of a letter or symbol, including using a number before a letter for multiplication.
- To use a table to identify a pattern; to write algebraic expressions using each of the four operations.

- To use algebra to describe the positions of coordinates in relationship to one another.
- To represent translation and reflection using algebraic notation.

Summer Term – TEXTBOOK 6B

Chapter 12: Geometry

By the end of this unit, children will be able to:
- To draw triangles using measurements and angles as the starting point; to use a protractor to draw triangles using angles.
- To construct triangles using a protractor and ruler; to use ratio to determine the dimensions of a triangle.
- To construct the nets of 3-D shapes by identifying the faces and the 2-D shapes that construct them.
- To construct the nets of 3-D shapes by identifying the faces and the 2-D shapes that construct them.