
# Horningsham Primary School

# Maths Planning

# Year 5 and 6

# Year 5 and Year 6 Long Term Planning

| | Year 5 | Year 6 |
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| Number Place | • Children should identify the place value in large whole numbers.<br>• They should continue to use number in context, including measurement. Children extend and apply their understanding of the number system to the decimal numbers and fractions they have met so far.<br>• They should recognise and describe linear number sequences, including those involving fractions and decimals, and find the term-to-term rule. | • Children should use the whole number system - saying, reading and writing numbers accurately. |
| Addition Subtraction | • Children should practise using the formal written methods of columnar addition and subtraction with increasingly large numbers to aid fluency.<br>• They should practise mental calculations with increasingly large numbers to aid fluency. | • Children should practise addition, subtraction, multiplication and division for larger numbers, using the efficient written methods of columnar addition and subtraction, short and long multiplication, and short and long division (see Appendix 1).<br>• They should undertake mental calculations with increasingly large numbers and more complex calculations.<br>• Children should continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.<br>• Children should round answers to a specified degree of accuracy.<br>• Children explore the order of operations using brackets.<br>• Common factors can be related to finding equivalent fractions. |
| Multiplication and Division | • Children should practise and extend their use of the formal written methods of short multiplication and division (see National Curriculum Appendix 1). They apply all the multiplication tables and related division facts, commit them to memory and use them confidently to make larger calculations.<br>• They should use and understand the terms factor, multiple and prime, square and cube numbers.<br>• Children should interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding<br>• Children use multiplication and division as inverses to support the introduction of ratio in Year 6, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units such as kilometres and metres. Distributivity can be expressed as a(b +c) = ab + ac in preparation for using algebra. | |
| Measurement | • Children should use their knowledge of place value and multiplication and division to convert between standard units.<br>• Children should calculate the perimeter of rectangles and related composite shapes, including using the relations of perimeter or area to find unknown lengths. They calculate the area from scale drawings using given measurements.<br>• Children should use all four operations in problems involving time and money, including conversions. | • Using the number line, children should use, add and subtract positive and negative integers for measures such as temperature.<br>• They should know approximate conversions and be able to tell if an answer is sensible.<br>• They should relate the area of rectangles to parallelograms and triangles, and be able to calculate their areas, understanding and using the formula to do this.<br>• Children could be introduced to other compound units for speed, such as miles per hour, and apply their knowledge in science or other subjects as appropriate. |
| Properties of Shapes | • Children should become accurate in drawing lines with a ruler to the nearest millimetre, and measuring with a protractor. They use conventional markings for parallel lines and right angles.<br>• Children should use the term diagonal and make conjectures about the angles formed by diagonals and sides, and other properties of quadrilaterals, for example using dynamic geometry ICT tools.<br>• Children should use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems. | • Children should draw shapes and nets accurately, using measuring tools and conventional markings and labels for lines and angles.<br>• Children should describe the properties of shapes and explain how unknown angles and lengths can be derived from known measurements. These relationships might be expressed algebraically. |
| Position & Direction | • Children recognise/use reflection and translation in a variety of diagrams, including continuing to use a 2D grid and coordinates in the first quadrant. Reflection should be in lines parallel to the axes. | • Children should draw and label a pair of axes in all four quadrants with equal scaling.<br>• Children draw and label rectangles, parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes. |

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| **Fractions** | • Children should be taught throughout that percentages, decimals and fractions are different ways of expressing proportions. They extend their knowledge of fractions to thousandths and connect to decimals and measures.<br>• Children should connect equivalent fractions >1 that simplify to integers with division and fractions >1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions.<br>• Children should connect multiplication by a fraction to using fractions as operators (fractions of), and to division, building on work from previous years. This relates to scaling by simple fractions.<br>• Children should practise adding and subtracting fractions to become fluent through a variety of increasingly complex problems. They should extend their understanding of adding and subtracting fractions to calculations that exceed 1 as a mixed number.<br>• Children should read and write proper fractions and mixed numbers accurately and practise counting forwards and backwards in simple fractions.<br>• Children should continue to develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities, writing remainders as fractions.<br>• Children extend counting from Year 4, using decimals and fractions including bridging zero, for example on a number line.<br>• Children should say, read and write decimal fractions and related tenths, hundredths and thousandths accurately and are confident in checking the reasonableness of their answers to problems.<br>• They should mentally add and subtract tenths, and one-digit whole numbers and tenths.<br>• They should practise adding and subtracting decimals including whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1. Children should go beyond the measurement and money models of decimals.<br>• Children should make connections between percentages, fractions and decimals and relate this to finding 'fractions of'. They recognise that percentages are proportions of quantities as well as operators on quantities. | • Children should practise, use and understand the addition and subtraction of fractions with different denominators by identifying equivalent fractions with the same denominator. They should start with fractions where the denominator of one fraction is a multiple of the other and progress to varied and increasingly complex problems.<br>• Children should use a variety of images to support their understanding of multiplication with fractions. They should use their understanding of the relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity. They practise with simple fractions and decimal fraction equivalents to aid fluency, including listing equivalent fractions to identify fractions with common denominators.<br>• Children can explore and make conjectures about converting a simple fraction to a decimal fraction. For simple fractions with recurring decimal equivalents, children should learn about rounding the decimal to three decimal places, or other appropriate approximations depending on the context.<br>• Children are introduced to the division of decimal numbers by one-digit whole numbers and, initially, in practical contexts involving measures and money.<br>• Children also develop their skills of rounding and estimating as a means of predicting and checking the order of magnitude of their answers to decimal calculations. |
| **Ratio & Proportion** | | • Pupils recognise proportionality in contexts when the relations between quantities are in the same ratio.<br>• Pupils link percentages or 360° to calculating angles of pie charts.<br>• Children should consolidate their understanding of ratio when comparing quantities, sizes and scale drawings by solving a variety of problems. They may use the notation a:b to record their work.<br>• Children should solve problems involving unequal quantities. These problems are the foundation for later formal approaches to ratio and proportion. |
| **Statistics** | • Children should connect their work on coordinates and scales to their interpretation of time graphs.<br>• They should begin to decide which representations of data are most appropriate and why. | • Children should connect their work on angles, fractions and percentages to the interpretation of pie charts.<br>• Children should both encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects.<br>• They should connect conversion from kilometres to miles in measure to its graphical representation.<br>• Children should know when it is appropriate to find the mean of a data set. |
| **Algebra** | | • Children should be introduced to the use of symbols and letters to represent variables and unknowns in mathematical situations that they already understand, such as:<br>  • missing numbers, lengths, coordinates and angles<br>  • formulae in mathematics and science<br>  • arithmetical rules (e.g. a + b = b + a)<br>  • generalisations of number patterns<br>  • number puzzles |

# Medium Term Planning for Y5 and Y6 Autumn Term 1

| Wk | Topic | Y5 Curriculum Objective | Y6 Curriculum Objective |
|---|---|---|---|
| 1 | **Place value** to 1,000,000<br>**Place value** and rounding off | ● To read, write, order and compare numbers at least to 1,000,000 and determine the value of each digit.<br>● To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. | ● To read, write, order and compare numbers at least to 10,000,000 and determine the value of each digit.<br>● To round any whole number to a required degree of accuracy.<br>● To solve number problems and practical problems that involve all of the above. |
| 2 | Mental **addition and subtraction**<br>Mental and written **addition, subtraction** of large numbers | ● To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).<br>● To add and subtract numbers mentally with increasingly large numbers.<br>● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | ● To perform mental calculations, including with mixed operations and large numbers.<br>● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. |
| 3 | **Factors** of numbers and **prime numbers**<br>**Multiples, factors and prime numbers** | ● To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.<br>● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.<br>● To solve problems involving multiplication and division where larger numbers are used by decomposing them into factors.<br>● To know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.<br>● To establish whether a number up to 100 is prime and recall prime numbers up to 19. | ● To perform mental calculations, including with mixed operations and large numbers.<br>● To identify common factors, common multiples and prime numbers.<br>● To solve problems involving addition, subtraction, multiplication and division. |
| 4 | Using **multiplication and division** facts<br>Written methods for **multiplication and division:** HTU × TU and HTU × U | ● To multiply and divide numbers mentally drawing upon known facts.<br>● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.<br>● To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. | ● To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication.<br>● To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.<br>● To solve problems involving addition, subtraction, multiplication and division.<br>● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| 5 | **Angles**<br>**Circles and angles** | ● To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles<br>● To draw given angles, and measure them in degrees (º).<br>● To identify:<br>• angles at a point and one whole turn (total 360º)<br>• angles at a point on a straight line and $^1/_2$ a turn (total 180º)<br>• other multiples of 90º. | ● To illustrate and name parts of circles, including radius diameter and circumference.<br>● To recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. |
| 6 | **Length, perimeter and area**<br>Units of **measure** | ● To convert between different units of measure (for example, kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre).<br>● To understand and use equivalences between metric units and common imperial units such as inches, pounds and pints.<br>● To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.<br>● To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.<br>● To 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. | ● To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate.<br>● To use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa using decimal notation to three decimal places.<br>● To convert between miles and kilometres. |

# Medium Term Planning for Y5 and Y6 Autumn Term 2

| Wk | Topic | Y5 Curriculum Objective | Y6 Curriculum Objective |
|---|---|---|---|
| 1 | Written methods for **multiplication**<br><br>Written methods for **multiplication and division** | • To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.<br>• 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.<br>• To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. | • To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication.<br>• To divide numbers up to 4 digits by a two-digit whole number using efficient written methods of long division and interpret remainders as whole numbers, remainders, fractions or by rounding as appropriate in the context. |
| 2 | **Divide** 4-digit numbers<br><br>**Multiplying** decimals by 10, 100 and 1000 | • To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context.<br>• To multiply and divide numbers mentally drawing upon known facts.<br>• To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. | • To identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100, 1000 where the answers are up to three decimal places.<br>• To solve problems which require answers to be rounded to specified degrees of accuracy. |
| 3 | **Fractions and decimals:** tenths and hundredths<br><br>Comparing, ordering and simplifying **fractions** | • To compare and order fractions whose denominators are all multiples of the same number.<br>• To identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.<br>• To read and write decimal numbers as fractions (for example, 0.71 = $^{71}/_{100}$). | • To compare and order fractions, including fractions >1.<br>• To use common factors to simplify fractions; use common multiples to express fractions in the same denomination. |
| 4 | **Decimals:** tenths, hundredths, thousandths<br><br>**Order of operations** | • To read, write, order and compare numbers with up to three decimal places.<br>• To read and write decimal numbers as fractions (for example, 0.71 = $^{71}/_{100}$).<br>• To round decimals with two decimal places to the nearest whole numbers and to one decimal place.<br>• To recognise and use thousandths and relate them to tenths, hundredths and decimals equivalents.<br>• To solve problems involving number up to three decimal places. | • To perform mental calculations, including with mixed operations and large numbers.<br>• To use their knowledge of the order of operations to carry out calculations involving the four operations.<br>• To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.<br>• To solve problems involving addition, subtraction, multiplication and division.<br>• To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| 5 | **2D and 3D shapes**<br><br>**2D and 3D shapes** | • To distinguish between regular and irregular polygons based on reasoning about equal sides and angles.<br>• To use the properties of rectangles to deduce related facts and find missing lengths and angles.<br>• To identify 3D shapes including cubes and cuboids from 2D representations. | • To draw 2D shapes using given dimensions and angles.<br>• To compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.<br>• To recognise, describe and build simple 3D shapes, including making nets. |
| 6 | **Tables and bar charts**<br><br>**Pie charts** | • To complete, read and interpret information in tables, including timetables. | • To interpret and construct pie charts and line graphs and use these to solve problems. |
| **Assess and review** | | • **To assess the half-term's work.** | |

# Medium Term Planning for Y5 and Y6 Spring Term 1

| Wk | Topic | Y5 Curriculum Objective | Y6 Curriculum Objective |
|---|---|---|---|
| 1 | **Negative numbers, and solving problems** involving numbers<br><br>**Calculating with large numbers** | • To read, write, order and compare numbers at least to 1,000,000 and determine the value of each digit.<br>• To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.<br>• To interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero.<br>• To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000.<br>• To solve number problems and practical problems that involve all of the above. | • To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication.<br>• To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.<br>• To perform mental calculations, including with mixed operations and large numbers.<br>• To use their knowledge of the order of operations to carry out calculations involving the four operations.<br>• To solve problems involving addition, subtraction, multiplication and division. |
| 2 | **Addition and subtraction** of large numbers and money<br><br>**Multiplying and dividing decimals** | • To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).<br>• To add and subtract numbers mentally with increasingly large numbers.<br>• To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.<br>• To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.<br>• To solve problems involving numbers up to three decimal places. | • To multiply one-digit numbers with up to two decimal places by whole numbers.<br>• To use written division methods in cases where the answer has up to two decimal places.<br>• To solve problems which require answers to be rounded to specified degrees of accuracy. |
| 3 | **Long multiplication, square numbers and cube numbers**<br><br>**Percentages, decimals and fractions** | • To multiply and divide numbers mentally drawing upon known facts.<br>• To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.<br>• To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.<br>• 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.<br>• To recognise and use square numbers and cube numbers, and the notation for squared ($^2$) and cubed ($^3$).<br>• To 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. | • To solve problems involving the calculation of percentages of whole numbers or measures and the use of percentages for comparison.<br>• To recall and use equivalences between simple fractions, decimals and percentages, including different contexts. |
| 4 | **Adding and subtracting fractions**<br><br>**Simple formulae** | • To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: $^2/_5 + {}^4/_5 = {}^6/_5 = 1\,{}^1/_5$.<br>• To add and subtract fractions with the same denominator and multiples of the same number. | • To express missing number problems algebraically.<br>• To use simple formulae expressed in words.<br>• To find pairs of numbers that satisfy number sentences involving two unknowns.<br>• To enumerate all possibilities of combinations of two variables. |
| 5 | **Reflections and translations**<br><br>**Area and volume** | • To 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. | • To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places, where appropriate.<br>• To use read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit and vice versa, using decimal notation to three decimal places.<br>• To calculate the area of parallelograms and triangles.<br>• To recognise when it is necessary to use the formulae for area and volume of shapes. |
| 6 | **Mass**<br><br>Line graphs | • To convert between different units of measure (kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre).<br>• To understand and use basic equivalences between metric units and common imperial units such as inches, pounds and pints.<br>• To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling. | • To interpret and construct pie charts and line graphs and use these to solve problems. |

# Medium Term Planning for Y5 and Y6 Spring Term 2

| Wk | Topic | Y5 Curriculum Objective | Y6 Curriculum Objective |
|---|---|---|---|
| 1 | **Addition and subtraction:** mental and written methods for large numbers<br>**Calculating with large numbers** | ● To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).<br>● To add and subtract numbers mentally with increasingly large numbers.<br>● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.<br>● To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. | ● To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication.<br>● To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.<br>● To perform mental calculations, including with mixed operations and large numbers.<br>● To use their knowledge of the order of operations to carry out calculations involving the four operations.<br>● To solve problems involving addition, subtraction, multiplication and division. |
| 2 | **Multiplication and division:** written methods<br>**Multiplying and dividing decimals** | ● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.<br>● 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.<br>● To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context.<br>● To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. | ● To multiply one-digit numbers with up to two decimal places by whole numbers.<br>● To use written division methods in cases where the answer has up to two decimal places.<br>● To solve problems which require answers to be rounded to specified degrees of accuracy. |
| 3 | Calculating with **fractions**<br>**Percentages, decimals and fractions** | ● To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: $^2/_5 + {}^4/_5 = {}^6/_5 = 1\,^1/_5$.<br>● To add and subtract fractions with the same denominator and multiples of the same number.<br>● To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. | ● To solve problems involving the calculation of percentages of whole numbers or measures and the use of percentages for comparison.<br>● To recall and use equivalences between simple fractions, decimals and percentages, including different contexts. |
| 4 | **Percentages**<br>**Simple formulae** | ● To 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. | ● To express missing number problems algebraically.<br>● To use simple formulae expressed in words.<br>● To find pairs of numbers that satisfy number sentences involving two unknowns.<br>● To enumerate all possibilities of combinations of two variables. |
| 5 | **Capacity**<br>**Area and volume** | ● To convert between different units of measure (kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre).<br>● To understand and use basic equivalences between metric units and common imperial units such as inches, pounds and pints.<br>● To estimate volume and capacity<br>● To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling | ● To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places, where appropriate.<br>● To use read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit and vice versa, using decimal notation to three decimal places.<br>● To calculate the area of parallelograms and triangles.<br>● To recognise when it is necessary to use the formulae for area and volume of shapes. |
| 6 | **Data:** Line graphs/ comparative graphs<br>**Data**: Line graphs | ● To solve comparison, sum and difference problems using information presented in a line graph. | ● To interpret and construct pie charts and line graphs and use these to solve problems. |
| **Assess and review** | | ● **To assess the half-term's work.** | |

# Medium Term Planning for Y5 and Y6 Summer Term 1

| Wk | Topic | Y5 Curriculum Objective | Y6 Curriculum Objective |
|---|---|---|---|
| 1 | **Negative numbers and Roman numerals**<br>**Problems involving number** | • To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.<br>• To interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero.<br>• To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000.<br>• To solve number problems and practical problems that involve all of the above.<br>• To read numerals to 1000 (M) and recognise years written in Roman numerals. | • To read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.<br>• To round any whole number to a required degree of accuracy.<br>• To use negative numbers in context and calculate intervals across zero.<br>• To solve number problems and practical problems that involve all the above. |
| 2 | **Adding and subtracting** large and small numbers<br>**Adding and subtracting** large and small numbers | • To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).<br>• To add and subtract numbers mentally with increasingly large numbers.<br>• To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.<br>• To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.<br>• To solve problems involving numbers up to three decimal places. | • To perform mental calculations, including with mixed operations and large numbers.<br>• To solve addition and subtraction multi-step problems in contexts, deciding which operations to use and why.<br>• To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| 3 | Long **multiplication and division** with remainders<br>**Long multiplication and division** | • 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.<br>• To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context.<br>• To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. | • To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written methods of long multiplication.<br>• To divide numbers up to 4 digits by two digit whole numbers using the efficient written method of long division and interpret remainders as whole number remainders, fractions or by rounding, as appropriate for the context.<br>• To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| 4 | Working with **fractions**<br>Working with **fractions** | • To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: $^2/_5 + ^4/_5 = ^6/_5 = ^{11}/_5$.<br>• To add and subtract fractions with the same denominator and multiples of the same number. | • To add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.<br>• To multiply simple pairs of proper fractions, writing the answer in its simplest form.<br>• To divide proper fractions by whole numbers. |
| 5 | **Shape**: Diagonals and problems involving angles<br>Problems involving **percentages, fractions and decimals** | • To know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles<br>• To draw given angles, and measure them in degrees (º).<br>• To identify:<br>  ◦ angles at a point and one whole turn (total 360º)<br>  ◦ angles at a point on a straight line and $^1/_2$ a turn (total 180º)<br>  ◦ other multiples of 90º.<br>• To use the properties of a rectangle to deduce related facts and find missing lengths and angles.<br>• To distinguish between regular and irregular polygons based on reasoning about equal sides and angles. | • To solve problems involving the calculation of percentages of whole numbers or measures and the use of percentages for comparison.<br>• To recall and use equivalences between simple fractions, decimals and percentages including in different contexts. |
| 6 | **Volume, time and money**<br>**Ratio and proportion** | • To estimate volume (e.g. using 1 $cm^3$ blocks to build cubes and cuboids) and capacity (e.g. using water).<br>• To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling<br>• To solve problems involving converting between units of time. | • To solve problems involving the relative size of two quantities where missing values can be found by using integer multiplication and division facts.<br>• To solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.<br>• To solve problems involving similar shapes where the scale factor is known or can be found. |
| **Assess and review** | | • **To assess the half-term's work.** | |

# Medium Term Planning for Y5 and Y6 Summer Term 2

| Wk | Topic | Y5 Curriculum Objective | Y6 Curriculum Objective |
|---|---|---|---|
| 1 | **Addition and subtraction** of money<br>**Solving problems involving money** | • To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction).<br>• To add and subtract numbers mentally with increasingly large numbers.<br>• To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | • To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication.<br>• To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.<br>• To perform mental calculations, including with mixed operations and large numbers.<br>• To use their knowledge of the order of operations to carry out calculations involving the four operations.<br>• To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.<br>• To solve problems involving addition, subtraction, multiplication and division.<br>• To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| 2 | **Multiplication and division** of money<br>**Number puzzles** | • 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.<br>• To multiply and divide numbers mentally drawing upon known facts.<br>• To identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.<br>• To solve problems involving multiplication and division where larger numbers are used by decomposing them into factors.<br>• To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. | • To express missing number problems algebraically.<br>• To use simple formulae expressed in words.<br>• To generate and describe linear number sequences.<br>• To find pairs of numbers that satisfy number sentences involving two unknowns.<br>• To enumerate all possibilities of combinations of two variables. |
| 3 | **Decimals and fractions**<br>**Fractions** with different denominators | • To read, write, order and compare numbers with up to three decimal places.<br>• To read and write decimal numbers as fractions (for example, 0.71 = $^{71}/_{100}$).<br>• To recognise and use thousandths and relate them to tenths, hundredths and decimals equivalents.<br>• To round decimals with two decimal places to the nearest whole numbers and to one decimal place. | • To multiply simple pairs of proper fractions, writing the answer in its simplest form ($^1/_4 \div {}^1/_2 = {}^1/_8$).<br>• To use common factors to simplify fractions; use common multiples to express fractions in the same denomination.<br>• To add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions. |
| 4 | Problems involving **percentages**<br>Problems involving **percentages and decimals** | • To 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.<br>• To solve problems which require knowing percentage and decimal equivalents of $^1/_2$, $^1/_4$, $^1/_5$, $^4/_5$ and those with a denominator of a multiple of 10 or 25. | • To solve problems involving the calculation of percentages of whole numbers or measures such as 15% of 360 and the use of percentages for comparison.<br>• To recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. |
| 5 | **Perimeter, area and scale drawing**<br>Problems involving **measures** | • To measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.<br>• To 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.<br>• To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. | • To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places where appropriate.<br>• To use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a large unit and vice versa, using decimal notation to three decimal places. |
| 6 | **Data:** Using tables, and line graphs<br>Using **data** | • To complete, read and interpret information in tables, including timetables.<br>• To solve comparison, sum and difference problems using information presented in a line graph. | • To interpret and construct pie charts and line graphs and use these to solve problems.<br>• To calculate and interpret the mean as an average. |