| Block | Topic |
| :---: | :---: |
| 1 | Number and Place Value |
| 2 | Addition and Subtraction |
| 3 | Multiplication and Division |
| 4 | Fractions |
| 5 | Decimals and Money |
| 6 | Geometry |
| 7 | Statistics |
| 8 | Measure - Time |
| 9 | $\begin{gathered} \text { Measure - Length, Perimeter \& Area, } \\ \text { Mass \& Capacity } \end{gathered}$ |

# st Bede's 

Catholic Primary School

## Year 4

| Block 1 |  |  |  |
| :---: | :---: | :---: | :---: |
| Number and Place Value |  |  |  |
| Substantive Knowledge <br> National Curriculum | Ready to Progress | Key Performance Indicators | Sequence of learning Detailed in Planning Overview |
| Count in multiples of 25 and 1000 <br> NB multiples of 6, 7 and 9 will be covered in the multiplication unit. |  | - Can count in multiples of 25 and 100 and explain the link between the two amounts | *Introduction to resources <br> *Building 4 -digit numbers out of a range of concrete resources <br> *Counting in 1000s to gain confidence |
| Find 1000 more or less than a given number |  | - Can find 1000 more than a given number and explain which digit changes <br> - Can find 1000 less than a given number and explain which digit changes | *Composing 4-digit numbers and discussing column value of each digit of these numbers (including the role of o in a number) <br> *Standard and non-standard partitioning |
| Count backwards through zero to include negative numbers |  | - Can count backwards in a range of multiples to include negative numbers and understand the value of the digits | in a thousand, 100 tens in 1000, 1000 ones in 1000 and using this to represent a 4-digit number |
| Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) | 4NPV-1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100 ; apply this to identify and work out how many 100s there are in other four-digit multiples of 100 <br> 4NPV-2 Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and nonstandard partitioning | - Can identify the number of thousands, hundreds, tens and ones in a 4 -digit number | number <br> * Ordering and comparing numbers <br> beyond 1000 <br> *Counting in 1000s, 500s, 100s, 50s and 25s <br> * Positioning numbers on a blank and scaled number lines with a variety of starting and ending points and a range of increments. <br> *Substantial problem solving <br> *Rounding numbers to the nearest 10, |
| Order and compare numbers beyond 1000 | 4NPV-3 Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of | - Can identify the larger of two 4-digit numbers and explain reasoning | *Problem Solving <br> *Reading and representing numbers on a number line to include negative numbers |


|  | 1,000 and 100 , and rounding to the nearest of each. <br> 4NPV-4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with $2,4,5$ and 10 equal parts | - Can position 4-digit numbers on a number line and explain reasoning about where they are positioned | * Reading and writing Roman numerals up to 100 |
| :---: | :---: | :---: | :---: |
| Identify, represent and estimate numbers using different representations | 4NPV-1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100 ; apply this to identify and work out how many 100s there are in other four-digit multiples of 100 | - Can use equipment to represent numbers and to explain reasoning about the size of numbers |  |
| Round any number to the nearest 10,100 or 1000 | 4NPV-3 Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100 , and rounding to the nearest of each. | - Can round numbers to the nearest 10 <br> - Can round numbers to the nearest 100 <br> - Can round numbers to the nearest 1000 <br> - Can explain the rules of rounding |  |
| Solve number and practical problems that involve all of the above and with increasingly large positive numbers |  | - Solve problems involving place value, including word problems and problems linked to money and measure |  |
| Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. |  | - Can read Roman numerals to 100 <br> - Can understand how the numeral system developed over time |  |


| Block 2 |  |  |  |
| :---: | :---: | :---: | :---: |
| Addition and Subtraction |  |  |  |
| Substantive Knowledge <br> National Curriculum | Ready to Progress | Key Performance Indicators | Sequence of learning Detailed in Planning Overview |
| Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate | 4NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100), | - Can use place value to calculate mentally <br> - Can add and subtract multiples of 1,10 , 100 and 1000 <br> - Can subtract by finding the difference <br> - Can calculate mentally by reordering <br> - Can calculate mentally by compensating <br> - Can use a written methods to add two 4digit numbers, including bridging 10 and 100 <br> - Can use a written methods to subtract two 4-digit numbers, including bridging 10 and 100 <br> - Can use a written methods to add and 3 and 4 -digit number together, including bridging 10 and 100 <br> - Can use a written methods to subtract a 3digit number from a 4-digit number, including bridging 10 and 100 <br> - Can reflect on when it is appropriate to use a standard written method in an addition or subtraction calculation with up to 4 digits | *Scaling known facts by 10,100 and 1000 to create related facts <br> *Adding multiples of $1,10,100$ and 1000 to a number with no bridging <br> *Adding 1 digit to a 3 or 4 -digit number using bridging <br> *Adding a multiple of 10 to a 3 or 4 -digit number using bridging <br> *Adding a multiple of 100 to a 4-digit number using bridging <br> *Subtracting multiples of $1,10,100$ and 1000 from a number with no bridging <br> *Subtracting 1 digit from a 3 or 4 -digit number using bridging <br> *Subtracting a multiple of 10 from a 3 or 4 -digit number using bridging <br> *Subtracting a multiple of 100 from a 4-digit number using bridging <br> *Using the concept of 'finding the difference' within subtraction <br> *Understanding the inverse relationship between addition and subtraction and generating fact families |
| Estimate and use inverse operations to check answers to a calculation |  | - Can estimate the answer of an addition or subtraction up to 4 digits Can use addition and subtraction to calculate the inverse | *Using inverse operations within addition and subtraction to check calculations <br> *Reordering calculations to look for known facts and aid efficiency |
| Solve addition and subtraction two-step problems in contexts, deciding which operations |  | - Can identify whether a word problem needs to be solved using addition, subtraction or combination of both | * Compensating <br> *Estimation <br> *Standard written method of addition <br> *Standard written method of subtraction |


| and methods to use and why. |  | - Can identify the most appropriate method of calculation to use to solve a problem <br> - Can use a calculation skill in a problem using units of measure (km, m, cm, mm, $\mathrm{kg}, \mathrm{g}, \mathrm{l}, \mathrm{ml}$, hours, minutes and seconds) | *Adjusting (consid this method) <br> *Reflecting on the *Solve addition and contexts, deciding and why. | which children can grasp and retain <br> ost efficient strategy subtraction two step problems in wich operations and methods to use |
| :---: | :---: | :---: | :---: | :---: |
| Block 3 |  |  |  |  |
| Multiplication and Division |  |  |  |  |
| Substantive Knowledge <br> National Curriculum | Ready to Progress | Key Performance Indicators |  | Sequence of learning Detailed in Planning Overview |
| Recall multiplication and division facts for multiplication tables up to $12 \times 12$ | 4NF-1 Recall multiplication and division facts up to $12 \times 12$ and recognise products in multiplication tables as multiples of the corresponding number. | - Can explain how to use known facts to derive others <br> - Can recall the 2 x 5 x 10 x tables from Year 2 <br> - Can recall the 3x 4x 8x tables from Year 3 <br> - Can recall the $6 x$ table <br> - Can recall the 7x table <br> - Can recall the 9x table <br> - Can recall the 11x table <br> - Can recall the $12 x$ table <br> - Can derive related division facts <br> - Understands that division cannot be done in any order |  | *Recap 2, 5 and 10 times tables including patterns and generalisations <br> *Recap 4, 8 and 3 times tables including patterns and generalisations <br> *Teach 6, 12, 9, 11 and 7 times tables <br> *Links and the development of multiplication <br> *Multiplying by 10 and 100 <br> *Dividing by 1,10 and 100 <br> *Using scaling numbers by 10 and |
| Use place value, known and derived facts to multiply and divide mentally, including: multiplying by o and 1 ; dividing by 1 ; multiplying together three numbers | 4NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100) | - Understands how a multiplication fact can be used to multiply by a multiple of 10 <br> - Understands how a multiplication fact can be used to multiply by a multiple of 100 <br> - Understands how to multiply 3 one-digit numbers together <br> - Understands the effect of multiplying by 1 and o <br> - Understands the effect of dividing by 1 <br> - Understands how a multiplication fact can be used to solve a division calculation |  | 100 to solve calculations using known facts <br> *Using arrays investigate fact families and the commutative law and inverse relationship of multiplication and division *Solve missing box calculations using known facts and inverse operations <br> *Find factors of numbers using a systematic approach <br> *Multiplying 3 numbers using the most efficient strategy |


|  | number 10 or 100 times the size. <br> 4MD-3 Understand and apply the distributive property of multiplication |  | *Solving problems including using scaling and correspondence <br> *Strategies for mental calculation (partitioning, doubling and halving, compensating) <br> Consolidation and problem solving with mental strategies <br> *Written strategy for multiplication (Check school calculation policy) <br> * Written strategy for division if stated in school calculation policy *Solve a range of problems using multiplication and division using an efficient strategy. <br> *Solve multi-step problems involving all 4 operations. Choose an efficient method for calculating and explain which methods have been used. |
| :---: | :---: | :---: | :---: |
| Recognise and use factor pairs and commutativity in mental calculations | 4MD-2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication. | - Can identify factors of a 2-digit number <br> - Understands that multiplication can be done in any order |  |
| Multiply two-digit and three-digit numbers by a one-digit number using formal written layout | 4MD-1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. | - Can use a formal written method to multiply TU by U <br> - Can use a formal written method to multiply HTU by U |  |
| 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 mobjects. | 4NF-2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders | - Can solve word problems involving multiplication <br> - Can solve word problems involving division <br> - Can solve scaling problems involving measures <br> - Can solve correspondence problems e.g. There are 3 starters, mains and desserts on a menu, how many possible meals could you have? |  |


| Block 4 |  |  |  |
| :---: | :---: | :---: | :---: |
| Fractions |  |  |  |
| Substantive Knowledge National Curriculum | Ready to Progress | Key Performance Indicators | Sequence of learning Detailed in Planning Overview |
| Recognise and show, using diagrams, families of common equivalent fractions | $4 \mathrm{~F}-1$ Reason about the location of mixed numbers in the linear number system <br> $4 \mathrm{~F}-2$ Convert mixed numbers to improper fractions and vice versa. | - Can use multiplication to generate equivalent fractions. <br> - Can simplify fractions using common factors | *Recapping children's prior knowledge of fractions <br> *Investigating using pictorial or practical resources how to make a whole <br> *Placing fractions on a 0-1 number line |
| 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 |  | - Can use unit fractions to solve a problem. <br> - Can use non-unit fractions to solve a problem. | improper fractions on a number <br> line <br> Converting mixed numbers and improper fractions <br> *Equivalent fractions using multiplication <br> *Finding fractions of an amount (unit and non-unit fractions) |
| Add and subtract fractions with the same denominator | $4 \mathrm{~F}-3$ Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers | - Can add and subtract fractions with a common denominator | *Adding fractions with the same denominator (total may exceed one whole) <br> *Subtracting fractions with the same denominator (start number may be more than one whole) |


| Block 5 |  |  |  |
| :---: | :---: | :---: | :---: |
| Decimals and Money |  |  |  |
| Substantive Knowledge <br> National Curriculum | Ready to Progress | Key Performance Indicators | Sequence of learning Detailed in Planning Overview |
| Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. |  | - Understands hundredths are dividing an object or a number into 100 equal parts. <br> - Understand tenths are dividing an object or a number into 10 equal parts. <br> - Understands hundredths can be made by dividing tenths into 10 equal parts. <br> - Can find and place hundredths on a number line. <br> - Can use hundredths in money and measure <br> - Can compare and order numbers to 2dp | *Recap year 3 decimals unit and look at counting in tenths <br> *Using money, base 10 or a bead string investigate a hundredth as a fraction and a decimal (1 out of10o beads is $1 / 100$ or 0.01 because we have 1 in the hundredth column <br> *Count up and down in hundredths <br> *Compare and order decimals <br> *Positioning hundredths on a number line and using this to order and compare decimals to 2 dp <br> *Rounding Decimals <br> *Dividing a 1 or 2 -digit number by 10 or 100 and reading the answer as ones, tenths and hundredths *Identifying where 0.5 , 0.25 and 0.75 would be on a number line and discussing that these are positioned at $1 / 2,1 / 4$ and $3 / 4$ *Solve problems involving money |
| Recognise and write decimal equivalents of any number of tenths or hundredths |  | - Can identify and calculate $\frac{1}{10}$ as a decimal <br> - Can identify the pattern when finding other tenths. <br> - Can identify and calculate $\frac{1}{100}$ as a decimal <br> - Can identify the pattern when finding other hundredths. |  |
| Recognise and write decimal equivalents to $1 / 4$, $1 / 2$ and $3 / 4$ |  | - Can recall decimal equivalent to $1 / 2$ <br> - Can recall decimal equivalent to $1 / 4$ <br> - Can recall decimal equivalent to $3 / 4$ |  |
| 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 | 4MD-1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. | - Can explain the effect of dividing a one-digit number by 10 <br> - Can explain the effect of dividing a two-digit number by 10 <br> - Can explain the effect of dividing a one-digit number by 100 <br> - Can explain the effect of dividing a two-digit number by 100 |  |
| Round decimals with one decimal place to the nearest whole number |  | - Can identify the nearest whole number to a one decimal place number. |  |



| Block 6 |  |  |  |
| :---: | :---: | :---: | :---: |
| Geometry |  |  |  |
| Substantive Knowledge <br> National Curriculum | Ready to Progress | Key Performance Indicators | Sequence of learning Detailed in Planning Overview |
| Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes | 4G-2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons. | Can recall and recognise in a variety of shapes that: <br> - an equilateral triangle has three equal sides and three equal angles <br> - isosceles triangles have two equal sides and two equal angles <br> - right angled triangles have one right angle <br> - scalene triangles have no equal sides and no equal angles <br> - triangles cannot have more than one obtuse angle <br> - squares have four equal sides and four right angles <br> - rectangles have two pairs of equal and parallel sides and four right angles <br> - parallelograms have two pairs of equal and parallel sides <br> - rhombuses have four equal sides, two pairs of parallel sides <br> - trapeziums have one pair of parallel sides <br> - kites have two pairs of equal sides which are adjacent, two equal angles <br> - Can recall the names of other polygons and their associated numbers of sides | *Recap 2D shape - names and properties of shapes (regular and irregular shapes) <br> *Recognising angles (obtuse, acute and right angles) <br> *Comparing angles <br> *Identifying angles in shapes <br> *Investigating triangles, classifying and sorting <br> *Investigating quadrilaterals, classifying and sorting <br> *Investigating symmetrical patterns (one line of symmetry, 2 lines of symmetry, line of symmetry parallel to gridlines, line of symmetry at an angle to the gridlines) <br> *Exploring symmetry in shapes <br> *Complete a simple symmetric figure with respect to a specific line of symmetry |
| Identify acute and obtuse angles and compare and order angles up to two right angles by size |  | - Can identify acute angles on their own and within shapes <br> - Can identify obtuse angles on their own and within shapes <br> - Can compare two or more angles up to $180^{\circ}$ | *Using coordinates to position points and to read the position of points using the language of $x$ and y axis *Can use knowledge of properties of shapes to plot a missing coordinate of a given |
| Identify lines of symmetry in 2-D shapes presented in different orientations | 4G-3 Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry | - Can recall and recognise in different shapes that: <br> - A square has four lines of symmetry <br> - A rectangle has two lines of symmetry <br> - A rhombus has two lines of symmetry | polygon <br> *Can use the language of coordinates and positional |


|  | and complete a symmetric figure or pattern with respect to a specified line of symmetry. | - A parallelogram has no lines of symmetry <br> - A trapezium may or may not have a line of symmetry <br> - A kite has one line of symmetry <br> - An equilateral triangle has three lines of symmetry <br> - An isosceles triangle has one line of symmetry <br> - A regular polygon has the same of lines of symmetry as it has sides | language to describe how a shape has been translated <br> *Can translate a shape when given coordinates and positional language <br> *Substantial problem solving |
| :---: | :---: | :---: | :---: |
| Complete a simple symmetric figure with respect to a specific line of symmetry |  | Can complete a pattern drawn on a square grid with: <br> - one line of symmetry drawn parallel to the gridlines <br> - one line of symmetry drawn at an angle to the gridlines <br> - two lines of symmetry |  |
| Describe positions on a 2-D grid as coordinates in the first quadrant |  | - Can distinguish between the x and y axis. <br> - Can draw a pair of axes in one quadrant with equal scales and integer labels. |  |
| Describe movements between positions as translations of a given unit to the left/right and up/down | 4G-1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant | - Can describe position of a vertex of a 2D shape in the first quadrant using a pair of coordinates. <br> - Can translate a shape using left/right and up/down |  |
| Plot specified points and draw sides to complete a given polygon |  | - Can use properties of shape to complete the vertices of a simple shape. |  |


| Block 7 |  |  |  |
| :---: | :---: | :---: | :---: |
| Statistics |  |  |  |
| Substantive Knowledge <br> National Curriculum | Ready to Progress | Key Performance Indicators | Sequence of learning Detailed in Planning Overview |
| Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. | No specific Ready to Progress statements for statistics but use the opportunity to consolidate prior statements as appropriate e.g 4NPV4 Divide 1,00o into 2, 4, 5 and 10 equal parts, and read | - Understands which is the best method of recording data e.g. compare data presented in a bar chart and line graph and reason as to which is the most effective <br> - Can use an appropriate scale when representing data <br> - Can answer questions from a range of different graphs e.g. In which months was the temperature below $10^{\circ} \mathrm{C}$ ? | *Draw and interpret pictograms <br> *Draw and interpret bar charts <br> *Answer questions from a range of different graphs <br> - using discrete data <br> *Solve comparison, sum and difference problems using information presented in charts <br> *Introduce continuous data and discuss how this is different to discreet <br> *Represent continuous data as a line graph (link to science/topic) |
| Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | scales/number lines marked in multiples of 1,000 with $2,4,5$ and 10 equal parts | - Can answer questions from a bar chart that involve comparison, sum and difference <br> - Can answer questions from a pictogram that involve comparison, sum and difference <br> - Can answer questions from a table that involve comparison, sum and difference <br> - Can answer questions from a line graph that involve comparison, sum and difference | *Read and interpret a range of line graphs and answer questions on the data <br> * Answer questions from a range of different graphs <br> - using discrete data <br> *Collect continuous data and choose how to present this and with what scale <br> *Problem solving |


| Block 8 |  |  |  |
| :---: | :---: | :---: | :---: |
| Measure - Time |  |  |  |
| Substantive Knowledge <br> National Curriculum | Ready to Progress | Key Performance Indicators | Sequence of learning Detailed in Planning Overview |
| Convert between different units of measure [for example, kilometre to metre; hour to minute] |  | - Knows and understands the relationships between familiar units of measurement <br> - Can use multiplication and division to aid conversion <br> - Can convert an hour into minutes and vice versa <br> - Can suggest the most appropriate unit of measure | *Reading and writing time on analogue clocks <br> *Reading and writing time on digital clocks and converting time between analogue and digital 12-hour clocks <br> *Reading and writing time on 24 -hour clocks and converting from 12 -hour to 24 -hour digital clocks and analogue clocks <br> *Solve problems involving converting from hours to minutes; minutes to seconds; years to |
| Read, write and convert time between analogue and digital 12- and 24hour clocks |  | - Can read and understand 24-hour time <br> - Can relate 24 hr notation to am and pm Can covert 12 hr into 24 hour and vice versa | *Making links and consolidation |
| Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days |  | - Can solve problems involving familiar conversions Can interpret the answer in more than one measure |  |


| Block 9 |  |  |  |
| :---: | :---: | :---: | :---: |
| Measure - Length, Perimeter, Area, Capacity \& Mass |  |  |  |
| Substantive <br> Knowledge National Curriculum | Ready to Progress | Key Performance Indicators | Sequence of learning Detailed in Planning Overview |
| Convert between different units of measure [for example, kilometre to metre; hour to minute] | No specific Ready to Progress statements for Length and Perimeter but use the opportunity to consolidate prior statements as appropriate e.g. 4NPV-3 Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of | - Knows and understands the relationships between familiar units of measurement <br> - Can use multiplication and division to aid conversion. <br> - Can convert km into m and vice versa. <br> - Can convert l into ml and vice versa. <br> - Can convert g into kg and vice versa <br> - Can suggest the most appropriate unit of measure. | *Recap tools and language of measure. <br> *Recap units of measure and which units are used to measure different things. <br> *Convert between different units of measure [for example, kilometre to metre, mm to cm ] <br> *Convert between different units of measure [g to kg] <br> *Convert between different units of |
| Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. | 1,000 and 100 , and rounding to the nearest of each. <br> NPV-4 Divide 1,0oo into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with $2,4,5$ and 10 equal parts | - Can measure sides of a rectangle to calculate the perimeter. <br> - Can generalise about the perimeter of a rectangle using words and symbols. <br> - Can use the formulae $2(\mathrm{~L}+\mathrm{W})$ to calculate perimeter of a rectangle. Can work out the perimeter of irregular shapes. | measure [l to ml] <br> *Estimate, compare and calculate different measures <br> *Problem solving around the concepts covered <br> *Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. |
| Find the area of rectilinear shapes by counting squares | 4MD-1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. | - Can relate area to arrays and multiplication. <br> - Can find the area of a rectangle by counting squares. <br> Can generalise about the area of a rectangle using words and symbols. | *Find the area of rectilinear shapes by counting squares |
| Estimate, compare and calculate different measures, including money in pounds and pence |  | - Can use decimal place value knowledge to compare different measures. <br> - Can calculate with measures This is within Decimals \& Money Block |  |

