**crest**

**ST CHARLES’ CATHOLIC PRIMARY SCHOOL**

**MATHS MEDIUM TERM PLANNING**

**crest**

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|  | **AUTUMN** | **SPRING** | **SUMMER** |
| **EYFS** | **Just Like Me**  **Number**   * Match and Sort * Compare Amounts   **Measure, Shape and Spatial Thinking**   * Compare size, mass and capacity * Exploring pattern | **Alive in 5**  **Number**   * Introducing zero * Comparing numbers to 5 * Composition of 4 and 5.   **Measure, Shape and Spatial Thinking**   * Compare mass (2) * Compare capacity (2) | **To 20 and Beyond**  **Number**   * Building numbers beyond 10 * Counting patterns beyond 10.   **Spatial Thinking**   * Spatial Reasoning (1) * Match, rotate, manipulate |
| **It’s Me 1 2 3!**  **Number**   * Representing 1,2 and 3 * Comparing 1,2 and 3 * Composition of 1,2 and 3.   **Measure, Shape and Spatial Thinking**   * Circles and Triangles * Positional Language | **Growing 6 7 8**  **Number**   * 6,7 and 8 * Combining 2 amounts * Making pairs   **Measure, Shape and Spatial Thinking**   * Length and height * Time. | **First Then Now**  **Number**   * Adding more * Taking away   **Spatial Thinking**   * Spatial Reasoning (2) * Compose and decompose |
| **Light and Dark**  **Number**   * Representing numbers to 5. * One more and less.   **Measure, Shape and Spatial Thinking**   * Shapes with 4 sides * Time. | **Building 9 and 10**  **Number**   * Counting to 9 and 10 * Comparing numbers to 10 * Bonds to 10.   **Measure, Shape and Spatial Thinking**   * 3D- shapes * Patterns | **Find my Pattern**  **Number**   * Doubling * Sharing and grouping * Even and odd   **Spatial Thinking**   * Spatial Reasoning (3) * Visualise and build. |
|  |  | **On the Move**  **Number**   * Deepening understanding * Patterns and relationships   **Spatial Thinking**   * Spatial Reasoning (4) * Mapping |
| **YEAR 1** | **Number and Place Value (Within 20)**  • Count to 100 forwards and backwards from any number  • Identify one more and one less, given a starting number to 100  • Read and write numbers 1 to 20 in numbers and words (phonetically plausible)  • Find and show numbers using objects and pictures including number lines and use: equal to, more than, less than (fewer), most, least  • Read, write numbers to 100 in digits, numerals.  • Count in jumps of 2, 5 and 10 | **Addition and Subtraction (Within 20)**  • Use number bonds and matching subtraction facts to 20  • Add and subtract 1 digit and 2 digit numbers to 20, including zero  • Tell how much different coins and notes are worth  • Add and subtract coins to the value of 20p  • Read, write and understand number statements using + - =  • Answer problems that use addition and subtraction, including missing number problems, using objects and pictures | **Multiplication and Division**  • Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. |
| **Addition and Subtraction (Within 10)**  • Use number bonds and matching subtraction facts to 20  • Add and subtract 1 digit and 2 digit numbers to 20, including zero  • Tell how much different coins and notes are worth  • Add and subtract coins to the value of 20p  • Read, write and understand number statements using + - =  • Answer problems that use addition and subtraction, including missing number problems, using objects and pictures | **Number and Place Value (Within 100)**  • Count to 100 forwards and backwards from any number  • Identify one more and one less, given a starting number to 100  • Read and write numbers 1 to 20 in numbers and words (phonetically plausible)  • Find and show numbers using objects and pictures including number lines and use: equal to, more than, less than (fewer), most, least  • Read, write numbers to 100 in digits, numerals.  • Count in jumps of 2, 5 and 10 | **Fractions**  • Find and name half (1/2) of an object, shape and amount  • Find and name quarter (1/4) as one of four equal parts of an object, shape and amount |
| **Shape**  • Recognise and name common 2D shapes such as rectangles, squares, circles, triangles, pentagons, hexagons  •Sort 2D shapes  • Recognise and name common 3D shapes such as cuboids, pyramids, spheres and cylinder  •Sort 3D shapes | **Measurement**  • Compare, describe and solve practical problems for:   * lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] * mass/weight [for example, heavy/light, heavier than, lighter than] * capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] * time [for example, quicker, slower, earlier, later]   • Measure and begin to record the following:   * lengths and heights * mass/weight * capacity and volume * time (hours, minutes, seconds)   • Recognise and know the value of different denominations of coins and notes | **Time**  • Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]  • Recognise and use language relating to dates, including days of the week, weeks, months and years  • Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. |
| **YEAR 2** | **Number and Place Value**  • Find and show numbers using different equipment such as number lines and number squares  • Read and write numbers to 100 in digits and words (spelt correctly)  • Say 10 more/less than any number up to 100  • Find the place value of each digit of a number with tens and units  • Use place value and number facts to answer questions • Compare amounts using these signs < > =  • Compare and order numbers from 0 to 100 using < > = • Derive and use related facts to 100 e.g 90+10 70+30 100-20=80 100-40=60 45+55 35+65 100- 55=45 100-75=25 | **Multiplication and Division**  • Remember and use multiplication and division facts for the 2,5 and 10 times tables and recognise odd and even numbers  • Count forward and backwards in jumps of 3 from zero • Answer questions involving multiplication and division mentally and with objects  • Show that multiplying 2 numbers can be done in any order but division cannot (commutative)  • Answer multiplication and division problems within the tables using X / =  • Derive and use halves (even numbers) and derive and use doubles of simple 2 digit numbers | **Measurement – Length, mass and capacity**  • Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels  • Compare and order lengths, mass, volume/capacity and record the results using >, < and = |
| **Addition and Subtraction**  • Recall and use addition and subtraction facts to 20  • Add and subtract a 2 digit number and tens mentally and when using objects, number lines and pictures  • Add and subtract two 2 digit numbers mentally and when using objects, number lines and pictures  • Add and subtract three 1 digit numbers mentally and when using objects, number lines and pictures  • Show that adding 2 numbers can be done in any order but subtraction can not  • Show that subtraction is the opposite of addition and use this to check my work  • Solve problems with addition and subtraction including those involving numbers, | **Statistics**  • Read and draw simple pictograms, tally charts, block diagrams and simple tables  • Ask and answer questions about totalling and comparing grouped data | **Position and Direction**  • Order mathematical objects in patterns and sequences  • Use mathematical vocabulary to describe position, direction and movement. This could include movement in a straight line (e.g. right, left, forward, backward, turn, clock wise, anti-clock wise) |
| **Money**  • Use the £ and p signs  • Use notes and coins to make particular amounts  • Find different ways for coins to add up to an amount  • Add and subtract money and give change | **Properties of Shape**  • Notice and explain the properties of 2D shapes e.g the number of sides and lines of symmetry (Y1 shapes plus octagon and quadrilaterals both regular and irregular)  • Recognise right angles  • Draw and/or construct 2D and 3D shapes  • Compare and sort common 2D and 3D shapes and everyday objects (1 criteria for 1 or 2, more than 1 criteria for 3)  • Notice and explain the properties of 3-D shapes e.g. the number of edges, vertices and faces (Y1 plus cones, prism, pyramid),  • Spot 2-D shapes on the surface of 3-D shapes such as a circle on a cylinder and a triangle on a pyramid | **Time**  • Compare and sequence intervals of time  • Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times  • Know the number of minutes in an hour and the number of hours in a day. |
|  |  | **Fractions**  • Find, name and write fractions of a length, shape, set of objects or amount, including 1/3, 1/4, 2/4, and 3/4  • Write and recognise equivalence of simple fractions (1/2s and 1/4s) |  |
| **YEAR 3** | **Number and Place Value**  • Read and write numbers to 1000 in numerals / digits and words  • Find, show and estimate numbers using objects and pictures  • Find 10 or 100 more or less than a given number  • Recognise the place value of each digit of a number with hundreds, tens and units  • Compare and order numbers up to 1000  • Round numbers to the nearest 10/100 up to 1000. | **Fractions**  • Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10  • Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators  • Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators  • Recognise and show, using diagrams, equivalent fractions with small denominators  • Add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7 ]  • Compare and order unit fractions, and fractions with the same denominators  • Solve problems that involve all of the above. | **Properties of Shape**  • Draw 2D shapes and make 3D shapes with modelling materials  • Recognise 3D shapes in different orientations and describe them  • Recognise angles as properties of shape. I know that angles are a description of a turn  • Spot horizontal and vertical lines and pairs of perpendicular and parallel lines |
| **Addition and Subtraction**  • Add and subtract numbers in my head, including a three digit number and ones  • Add and subtract numbers in my head, including a three digit number and tens  • Add and subtract numbers in my head, including a three digit number and hundreds  • Add and subtract numbers with up to three digits using formal column methods  • Estimate the answer to a calculation and use this and inverse operations to check answers  • Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction  • Add and subtract money giving change, using pounds and pence. I can do this with real coins and notes. | **Measurement – Length and Perimeter**  • Measure, compare, add and subtract: lengths (m/cm/mm)  • Measure the perimeter of simple 2-D shapes | **Measurement – Mass and Capacity, Time and Money**  • Measure, compare, add and subtract: mass (kg/g); volume/capacity (l/ml)  • Add and subtract amounts of money to give change, using both £ and p in practical contexts  • Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks  • Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o’clock, a.m./p.m., morning, afternoon, noon and midnight  • Know the number of seconds in a minute and the number of days in each month, year and leap year  • Compare durations of events [for example to calculate the time taken by particular events or tasks]. |
| **Multiplication and Division**  • Recall and use multiplication and division facts for the 3, 4 and 8 times tables  • Derive and use doubles of all numbers up to 100 and their corresponding halves.  • Calculate multiplication and division problems, both mentally and in writing, using the times tables, including two digit numbers times one digit numbers  • Multiply 2 digit by 1 digit  • Solve problems, including missing number problems, involving multiplication and division, including factors and correspondence. |  | **Statistics**  • Interpret and present data using bar charts, pictograms and tables  • Solve one-step and two-step questions e.g. "How many more?" and "How many fewer?" e.g. using information presented in scaled bar charts, pictograms and tables  • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time charts |
| **YEAR 4** | **Number and Place Value**  • Recognise the place value of each digit of a 4 digit number (thousands, hundreds, tens and units)  • Recognise the place value of any 4 digit number.  • Find 1000 more or less than a given number  • Order and compare numbers up to 100,000.  • Round numbers to the nearest 10, 100 or 1000 | **Fractions Including Decimals**  • Recognise and show, using diagrams, families of common equivalent fractions  • Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.  • 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 4 1 , 2 1 , 4 3  • 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 the same number of decimal places up to two decimal places  • Solve simple measure and money problems involving fractions and decimals to two decimal places. | **Properties of Shape**  • Identify acute and obtuse angles. I can compare and order angles up to two right angles by size  • 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  • Use line symmetry with two lines of symmetry |
| **Addition and Subtraction**  • Add and subtract numbers with up to four digits using formal column methods  • Use estimating and inverse operations to check my answers  • Solve two step addition and subtraction problems using different methods and explain why I used them | **Measurement**  • Convert between different units of measure [for example, kilometre to metre; hour to minute]  • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres  • Find the area of rectilinear shapes by counting squares • Estimate, compare and calculate different measures, including money in pounds and pence  • Read, write and convert time between analogue and digital 12- and 24-hour clocks  • Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. | **Position and Direction**  • Describe positions on a 2-D grid as coordinates in the first quadrant  • Describe movements between positions as translations of a given unit to the left/right and up/down  • Plot specified points and draw sides to complete a given polygon. |
| **Multiplication and Division**  • Recall times tables facts up to 12x12 9multiplication & division)  • Use place value and number facts to multiply and divide mentally, including multiplying by 1 and 0; dividing by 1; and multiplying together 3 numbers  • Divide one and two digit numbers by 10 and 100 and can explain the effect this has on place value  • Recognise and use factor pairs and commutativity in mental calculations |  | **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. |
| **YEAR 5** | **Number and Place Value**  • Count forwards/backwards in steps of powers of 10 for any given number up to 1,000,000.  • Keep multiplying a number by 10 or 100 up to 1,000,000 and count back  • Recognise the place value of any number up to 1,000,000.  • Read, write, order and compare numbers to at least 1,000,000 (one million) and say the value of each digit  • Round numbers up to 1,000,000 to the nearest 10, 100, 1000, 10,000 or 100,000  • Solve number and practical problems that involve ordering and comparing numbers to 1 000 000, counting forwards or backwards in steps, negative numbers and rounding | **Fractions**  • Compare and order fractions whose denominators are all multiples of the same number  • Find, name and write equivalent fractions of a given fraction including tenths and hundredths  • Identify mixed numbers and improper fractions and convert from one to another such as 2/5 + 4/5 = 6/5 = 1 1/6  • Add and subtract fractions whose denominators are all multiples of the same number  • Multiply fractions by whole numbers using objects and pictures | **Properties of Shape**  • Tell the difference between regular and irregular polygons. I can do this using reasoning about equal sides and angles  • Use sorting diagrams to solve problems.  • Identify 3-D shapes, including cubes and other cuboids, from 2-D representations  • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles  • Draw given angles, and measure them in degrees (o ) • Identify:   * angles at a point and one whole turn (total 360o ) * angles at a point on a straight line and 2 1 a turn (total 180o ) * other multiples of 90o |
| **Addition and Subtraction**  • Add and subtract 2 and 3 digit numbers in my head  • Add and subtract numbers with up to 4 digits using formal written methods  • Use rounding to check answers to calculations and determine levels of accuracy  • Solve addition and subtraction problems needing more than one step and can work out which operation and method is the most suitable  • Solve word problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • Solve two step word problems involving all 4 operations | **Measurement**  • Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)  • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints  • Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres  • Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2 ) and square metres (m2 ) and estimate the area of irregular shapes  • Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]  • Solve problems involving converting between units of time  • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. | **Position and Direction**  • Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. |
| **Multiplication and Division**  • Multiply and divide whole and decimal numbers by 10, 100 and 1000  • Find multiples and factors of a number and can identify factors common to 2 different numbers  • Recall prime numbers up to 19.  • Use vocabulary relating to prime numbers, prime factors and composite numbers  • Work out if any given number up to 100 is a prime number  • Identify and use square and cube numbers and their notations  • Solve problems involving multiplication and division including using factors and multiples, squares and cubes • Use known tables to derive other number facts.  • Multiply numbers with up to 4 digits by a one or two digit number using formal written methods (including long multiplication for 2 digit numbers) 29 Solve two step word problems involving all 4 operations |  | **Statistics**  • Solve comparison, sum and difference problems using information presented in a line graph  • Complete, read and interpret information in tables, including timetables. |
| **YEAR 6** | **Number and Place Value**  • Read, write, order and compare numbers to at least 10,000,000 (ten million) and say the value of each digit • Round any whole number to 10, 100, 1,000,10,000, and 100,000  • Fluently add and subtract decimal numbers and round when required to specified degree of accuracy.  • Solve problems and reason about place value and number.  • Use understanding of place value to multiply and divide whole numbers and decimals with up to 3 decimal places by 10, 100 and 1,000.  • Explain the place value of any digit in a number with up to 3 decimal places and multiply or divide these by 10, 100 or 1000 | **Fractions**  • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination  • Compare and order fractions, including fractions > 1  • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions  • Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8 ]  • Divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6 ]  • Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8 ]  • Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places  • Multiply one-digit numbers with up to two decimal places by whole numbers  • Use written division methods in cases where the answer has up to two decimal places  • Solve problems which require answers to be rounded to specified degrees of accuracy  • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. | **Properties of Shape**  • Draw 2-D shapes using given dimensions and angles  • Recognise, describe and build simple 3-D shapes, including making nets  • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons  • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius  • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. |
| **Addition and Subtraction**  • Add and subtract mentally with increasingly large numbers.  • Add and subtract whole numbers with more than 4 digits, using formal written methods  • Fluently add and subtract decimal numbers and round when required to specified degree of accuracy.  • Solve word and practical problems with more than one step and operation and explain why I used them  • Use estimation to check answers to calculations and determine an appropriate degree of accuracy. | **Ratio and Proportion**  • Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts  • Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison • Solve problems involving similar shapes where the scale factor is known or can be found  • Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. | **Position and Direction**  • Describe positions in all four quadrants on a full coordinate graph  • Draw and translate simple shapes on the co-ordinate plane in all 4 quadrants.  • Use reasoning to solve problems related to co-ordinates, reflections and translations. |
| **Multiplication and Division**  • Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication  • Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context  • Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context  • Perform mental calculations, including with mixed operations and large numbers  • Identify common factors, common multiples and prime numbers  • Use their knowledge of the order of operations to carry out calculations involving the four operations | **Algebra**  • Use simple formulae  • Create and describe linear number sequences  • Record missing number problems algebraically  • Find pairs of numbers which complete an equation with two unknowns  • Create a list of possibilities of the combination of two variables | **Statistics**  • Present, complete, read and interpret information in tables, bar charts and sorting diagrams  • Interpret and construct pie charts and line graphs. I can use these to solve problems  • Calculate and interpret the mean as an average |
|  |  | **Measurement**  • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate  • 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 up to three decimal places  • Convert between miles and kilometres  • Recognise that shapes with the same areas can have different perimeters and vice versa  • Recognise when it is possible to use formulae for area and volume of shapes  • Calculate the area of parallelograms and triangles  • Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3 ) and cubic metres (m3 ), and extending to other units [for example, mm3 and km3 ]. |  |