

**Be the best that you can be**

***St Joseph’s Primary School***



**Mathematics**



Maths at St Joseph’s

**Intent**

At St Joseph’s RC Primary School our curriculum intends to give children in our care the opportunity to ‘be the best that they can be.’ We want our children to develop a love of learning which enhances their knowledge and skills but also develop a lifelong curiosity for Maths. We aim to do this in a learning environment where all feel welcome, safe and secure so that they can live life to the full.

At St Joseph’s, the intent of mathematics is to deliver a curriculum which is accessible to all and that will support and build on previously acquired knowledge and skills. Following the National Curriculum’s Programmes of Study we aim to maximise the development of every child’s ability and academic achievement by delivering daily lessons that are creative and engaging, building on children’s prior knowledge and skills, taught promoting the use of the concrete to pictorial to abstract approach.

We aim to develop children’s enjoyment of maths and provide opportunities for children to build a conceptual understanding of maths before applying their knowledge to everyday problems and challenges.

We want our pupils to

* Become fluent in the fundamentals of mathematics and children are enabled to use written methods accurately.
* Develop conceptual understanding and the ability to recall and apply knowledge rapidly.
* Build upon children’s knowledge and understanding from Nursery to year 6
* Develop resilience that enables all children to reason and problem solve with increased confidence and complexity.

**Implementation**

In EYFS, Nursery follows the new Early Years curriculum objectives and builds in pre-requisite skills for the Reception class. Then when children reach Reception class they begin the Early Years ‘White Rose’ Maths scheme, which has been linked to the pre-requisite skills ready for Year One. Well planned sequences of learning support children to develop and refine their maths skills and to know more and remember more of their maths.

In Key Stages One and Two, teachers cover objectives set out in the Programmes of Study from the National Curriculum and follow the ‘White Rose’ schemes of work to reduce teacher workload and support subject knowledge. To ensure full topic coverage, the school uses the ‘White Rose’ scheme of work supplemented with additional resources from ‘Twinkl’ in nursery. Our provision for maths includes

* Daily maths lessons include fluency, reasoning and problem solving.
* Lessons use a ‘fluid teaching’ format to ensure there is appropriate challenge for all learners. Children working below age expected standard are taught the pre-requisite skills and receive ‘booster’ sessions to ensure catch up.
* Concrete manipulatives and pictorial representations are used to support conceptual understanding and to make links across topics

At St Joseph’s, our approach to the teaching of mathematics develops children's ability to work both independently and collaboratively. We recognise that in order for pupils to progress to deeper and more complex problems, children need to be confident and fluent in Maths, and so all staff ensures that the school’s calculation policy is taught and applied.

All maths lessons begin with an Arithmetic/Recap session and conclude with a daily problem that links to the lesson objective, developing an understanding of problem solving in maths. In KS1, children have routine daily Number Sense sessions (from Jan 2022) to improve fluency. Lessons also include daily arithmetic/ times table practice, reviews of previously taught skills, knowledge and vocabulary and opportunities to reason and problem solve. Where possible Maths will be taught through practical application using a cross curricular approach.

Children’s progress and attainment are assessed at the end of each ‘White Rose’ unit and there are additional tests completed by pupils on a termly basis.

In addition half termly book scrutiny allows subject leaders and SLT to acknowledge and respond to strengths and weaknesses in teaching and learning in maths across the school and key stages

**Impact**

Children at St Joseph’s will understand and value the importance of Mathematics and will make good progress so that they are prepared for Key Stage 3.

As a result of good teaching and learning our children will be able to independently apply their mathematical knowledge to a range of increasingly complex problems and in different contexts, using written methods accurately. They will be able to apply their mathematical knowledge across the curriculum and will realise that mathematics plays a vital role in their everyday lives.

As our pupils progress further in their education, we intend for them to be able to understand the world, have the ability to reason mathematically and a sense of enjoyment and curiosity about the subject.



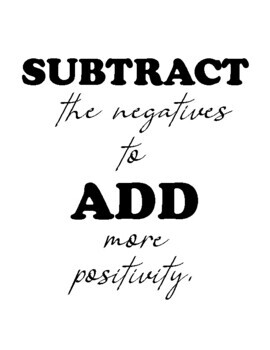
Mathematics

Progression Map and End Points

|  |  |  |
| --- | --- | --- |
|  |  |  |

[Type the company name]

**St Joseph’s RC Primary School**



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **St Joseph’s RC Primary School**  **Mathematics Curriculum Progression** | | | | |
|  | **End of EYFS** | **End of KS1** | **End of Lower KS2** | **End of Upper KS2** |
| **Place Value** | * Counts in steps of 1 from 0 to 20 forwards and backwards and then beyond * Counting in 1’s forwards and backwards from any number up to 20 and then beyond recognising the pattern of the counting system. * Link the number symbol (numeral) with its cardinal number value. * Explore the composition of numbers to 10. * Automatically recall number bonds for numbers 0–5 and some to 10. * Have a deep understanding of number to 10, including the composition of each number. * Subitise (recognise quantities without counting) up to 5. * Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. | * Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward * Recognise the place value of each digit in a two-digit number (tens, ones) identify, represent and estimate numbers using different representations, including the number line * Compare and order numbers from 0 up to 100; use and = signs * Read and write numbers to at least 100 in numerals and in words * Use place value and number facts to solve   problems | * Count in multiples of 6, 7, 9, 25 and 1000 * Find 1000 more or less than a given number * Count backwards through zero to include negative numbers * Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) * Order and compare numbers beyond 1000 * Identify, represent and estimate numbers using different representations * Round any number to the nearest 10, 100 or 1000 * Solve number and practical problems that involve all of the above and with increasingly large positive numbers * Read Roman numerals to 100 (I to C) and understand how, over time, the numeral system changed to include the concept of zero and place value. | * Read, write, order and compare numbers up to 10 000 000 and Determine the value of each digit * Round any whole number to a required degree of accuracy * Use negative numbers in context, and calculate intervals across zero * Solve number problems and practical problems that involve all of the above. |
| **Addition and Subtraction** | * Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. | * Solve problems with addition and subtraction: * Using concrete objects and pictorial representations, including those involving numbers, quantities and measures * Applying their increasing knowledge of mental and written methods * Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 * Add and subtract number using concrete objects,   pictorial representations, and mentally, including:   * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three one-digit numbers * Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot * Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | * Add and subtract numbers with up to 4 digits using the efficient written methods of columnar addition and subtraction where appropriate * Estimate and use inverse operations to check answers to a calculation * Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why | * Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient 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 whole number using the formal written method of short division, and 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 * Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why * Solve problems involving addition, subtraction, multiplication and division * Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| **Multiplication and Division** | * Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally | * Recall and use multiplication and division facts for * The 2, 5 and 10 multiplication tables, including recognising odd and even numbers * Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs * Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot * Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. | * Recall multiplication and division facts for multiplication tables up to 12 × 12 * Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers * Recognise and use factor pairs and commutativity in mental calculations * Multiply and divide two-digit and three-digit numbers by a one-digit number using formal written layout * Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as *n* objects are connected to *m* objects |
| **Fractions (including decimals and percentages)** | * In practical activities explore halves of whole amounts | * Recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity * Write simple fractions for example, ½ of 6 = 3 and recognise the equivalence of 2/4 and ½. | * 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 a 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 ¼; ½; ¾ * Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, 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. | * Use common factors to simplify fractions; use common multiples to express fractions in the same denomination * Compare and order fractions, including fractions >1 * Associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) * 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 (e.g. 1/4 × 1/2 = 1/8) * Divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6). * Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are 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 and to compare proportions. |
| **Measurement** | * Compare length, weight 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 = * Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value * Find different combinations of coins that equal the same amounts of money. * Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change * 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. | * Convert between different units of measure (e.g. 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 | * Solve problems involving the calculation and conversion of units of measure, using decimal notation 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 three decimal places * Convert between miles and kilometres * Recognise that shapes with the same areas can have different perimeters and vice versa * Calculate the area of parallelograms and triangles * Recognise when it is necessary to use the formulae for area and volume of shapes * Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3) and extending to other units, such as mm3 and km3. |
| **Geometry (Properties of Shapes)** | * Select, rotate and manipulate shapes in order to develop spatial reasoning skills. * Selects a particular named shape. * Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can. | * Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line * Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces * Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] * Compare and sort common 2-D and 3-D shapes and everyday objects | * Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes * Identify acute and obtuse angles and compare and order angles up to two right angles by size * 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. | * Draw 2D 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 * Recognise angles where they meet at a point, are on a straight line, and are vertically opposite and find missing angles |
| **Geometry (Position and Direction)** | * Continue, copy and creates repeating patterns. * Uses everyday language to talk about position and distance. | * Order and arrange combinations of mathematical * objects in patterns and sequences * Use mathematical vocabulary to describe position, * direction and movement, including movement in a * straight line and distinguishing between rotation as * a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anticlockwise | * Describe positions on a 2D 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. | * Describe positions on the full coordinate grid (all four quadrants) * Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. |
| **Statistics** |  | * Interpret and construct simple pictograms, tally charts, block diagrams and simple tables * Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity * Ask and answer questions about totalling and comparing categorical data. | * 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. | * Interpret and construct pie charts and line graphs and use these to solve problems * Calculate and interpret the mean as an average |
| **Ratio and Proportion** |  |  | * 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 100, and as a decimal * Solve problems which require knowing percentage and decimal equivalents of , , , , and those fractions with a denominator of a multiple of 10 or 25. | * 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 e.g. of measures and such as 15% of 360 and the use of percentages for comparison * Solve problems involving similar shapes where the scale factor if known or can be found * Solve problems involving unequal sharing and grouping using knowledge and multiples |
| **Algebra** | * Explore and represent patterns within numbers up to 10 | * Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9. * Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | * Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. | * Express missing number problems algebraically * Use simple formulae expressed in words * Generate and describe linear number sequences * Find pairs of numbers that satisfy number sentences involving two unknowns. * Enumerate all possibilities of combinations of two variables |

|  |  |
| --- | --- |
| **St Joseph’s RC Primary School**  **Maths End Points** | |
| **EYFS** | |
| **Number** | **Numerical patterns** |
| **The children should be able to:**  Have a deep understanding of number to 10, including the composition of each number.  Subitise (recognise quantities without counting) up to 5.  Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts | **The children should be able to:**  Verbally count beyond 20, recognising the pattern of the counting system.  Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.  Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. |

|  |  |  |
| --- | --- | --- |
| **Year 1**  **By the end of:** | | |
| **Autumn term** | **Spring term** | **Summer term** |
| **The children should be able to:**  Number and place value  Sort, count and represent objects including from a larger group.  Represent objects.  Recognise numbers as words.  Count on from any number.  1 more and 1 less  Count backwards within 10.  Compare groups by matching.  Know the meaning of fewer, more, same, less than, greater than, equal to  Compare and order objects and numbers.  Use a number line.  Addition and subtraction.  Addition  add more.  Find a part of a whole.  Fact families – the eight facts  Subtraction  find a part.  Understand the vocabulary:  take away/cross out.  , how many left?  Subtract using a number line.  Add or subtract 1 or 2.  Shape  Recognise and name and sort 3-D shapes  Recognise and name and sort 2-D shapes. Identify and build patterns with 2-D and 3-D shapes. | **The children should be able to:**  Place Value (within 20)  Count within 20  Understand the numbers 10, 11, 12, 13 14, 15, 16,17, 18, 19 and 20.  To know and find 1 more and 1 less of numbers to 20.  Use a number line to 20.  Estimate on a number line to 20.  Compare and order numbers to 20.  Addition and subtraction. (Within 20)  Addition  Add by counting on within 20.  Add ones using number bonds.  Find and make number bonds to 20.  Recognise doubles and near doubles.  Subtraction  Subtract ones using number bonds.  Be able to count back  To find the difference.  Solve missing number problems.  Place value within 50.  Count from 20 to 50 (20, 30, 40 and 50)  Count by making groups of tens.  Groups of tens and ones  Partition into tens and ones  Use a number line to 50 and estimate on a number line to 50.  1 more, 1 less than numbers between 20 and 50.  Length and height.  Compare lengths and heights.  Measure length using objects.  Measure length in centimetres.  Mass and volume  Heavier and lighter  Measure and compare mass  Full and empty  Compare volume  Measure and compare capacity | **The children should be able to:**  Multiplication and division  Count in 2s 10s and 5s  Recognise equal groups  Add equal groups and use grouping and sharing.  Make arrays  Make doubles  Fractions  Recognise a half of an object or a shape  Find a half of an object or a shape  Recognise a half of a quantity  Find a half of a quantity  Recognise a quarter of an object or a shape  Find a quarter of an object or a shape  Recognise a quarter of a quantity  Find a quarter of a quantity  Position and direction.  Describe turns  Describe position – left and right  Describe position – forwards and backwards Describe position – above and below  Ordinal numbers  Place value (within 100)  Count from 50 to 100  Know Tens to 100  Partition into tens and ones  Use a number line to 100  1 more, 1 less of number up to 100  Compare numbers with the same number of tens  Compare any two numbers  Money.  Unitising  Recognise coins and notes  Count in coins  Time.  Before and after  Days of the week  Months of the year  Hours, minutes, and seconds  Tell the time to the hour  Tell the time to the half hour |
| **Year 2**  **By the end of:** | | |
| **Autumn term** | **Spring term** | **Summer term** |
| **The children should be able to:**  Place value  Count objects to 100 by making 10s  Recognise tens and ones  Use a place value chart  Partition numbers to 100  Write numbers to 100 in words  Flexibly partition numbers to 100  Write numbers to 100 in expanded form 10s on the number line to 100  10s and 1s on the number line to 100 Step 11 Estimate numbers on a number line Step 12 Compare objects and numbers  Order objects and numbers  Count in 2s, 5s and 10s and 3s  Addition and subtraction  Number bonds to 10  Fact families - addition and subtraction bonds within 20  Number bonds to 100 (tens)  Add by making 10  Add three 1-digit numbers  Add to the next 10 Add across a 10  Add two 2-digit numbers (not across a 10 and across a 10)  Subtract across 10  Subtract from a 10  Subtract a 1-digit number from a 2-digit number (across a 10)  10 more, 10 less  Add and subtract 10s  Subtract two 2-digit numbers (not across a 10 and across a 10)  Mixed addition and subtraction  Compare number sentences  Missing number problems  Shape  Recognise 2-D and 3-D shapes  Count sides and vertices on 2-D shapes  Draw 2-D shapes  Recognise lines of symmetry on shapes  Use lines of symmetry to complete shapes  Sort 2-D shapes  Count faces, edges, and vertices on 3-D shapes  Sort 3-D shapes  Make patterns with 2-D and 3-D shapes | **The children should be able to:**  Money  Count money – pence, pound and pounds and pence  Choose notes and coins to make an amount, in a variety of ways.  Compare amounts of money  Calculate with money  Make a pound  Find change  Multiplication and division  Recognise, make and add equal groups  Introduce the multiplication symbol  Multiplication sentences  Use arrays  Make equal groups – grouping  Make equal groups – sharing  The 2 times-table  Divide by 2  Doubling and halving  Odd and even numbers  The 5 and 10 times-table  Divide by 5 and 10  Length and height  Measure in centimetres  Measure in metres  Compare lengths and heights  Order lengths and heights  Four operations with lengths and heights  Mass, capacity and temperature.  Compare mass  Measure in grams and kilograms  Use the four operations with mass  Compare volume and capacity  Measure in millilitres and litres  Four operations with volume and capacity  Temperature, what it is and how it is measured. | **The children should be able to:**  Fractions  Introduction to parts and whole  Equal and unequal parts  Recognise and find a half  Recognise and find a quarter  Recognise and find a third  Find the whole  Unit fractions  Non-unit fractions  Recognise the equivalence of a half and two-quarters  Recognise and find three-quarters  Count in fractions up to a whole  Time  Recognise O’clock and half past  Recognise quarter past and quarter to  Tell the time past the hour  Tell the time to the hour  Tell the time to 5 minutes  Minutes in an hour  Hours in a day  Statistics  Make tally charts  Understand and read tables  Understand and read block diagrams  Draw pictograms (1–1)  Interpret pictograms (1–1)  Draw and interpret pictograms (2, 5 and 10)    Position and direction  Use the Language of position  Describe movement  Describe turns  Describe movement and turns  Shape patterns with turns |
| **Year 3 By the end of :** | | |
| **Autumn term** | **Spring term** | **Summer term** |
| **The children should be able to:**  Place value  Understand hundreds  Represent and partition numbers to 100  Use, including estimating, a number line 100 and 1000  Represent and partition numbers to 1,000 including flexible partitioning to 1000  Find 1, 10 or 100 more or less  Estimate on a number line to 1,000  Compare numbers to 1,000  Order numbers to 1,000  Count in 50s  Addition and subtraction  Apply number bonds within 10  Add and subtract 1s,  Add and subtract 10s  Add and subtract 100s  Spot the pattern  Add 1s across a 10  Add 10s across a 100  Subtract 1s across a10  Subtract 10s across a 100  Add and subtract two numbers (no exchange)  Add two numbers (across a 10)  Add two numbers (across a 100)  Subtract two numbers (across a 10)  Subtract two numbers (across a 100)  Add 2-digit and 3-digit numbers  Subtract a 2-digit number from a 3-digit number  Complements to 100  Estimate answers  Inverse operations  Multiplication and division.  Multiplication – equal groups  Use arrays  Multiples of 2  Multiples of 5 and 10  Sharing and grouping  The three times tables  Multiply and divide by 3  The 4 times table  Multiply and divide by 4  The 8 times tables  Multiply and divide by 8  Spot patterns and links between the 2,4and 8s times tables. | **The children should be able to:**  Multiplication and division.  Multiples of 10  Reason about multiplication  Multiply a 2-digit number by a 1-digit number – no exchange  Multiply a 2-digit number by a 1-digit number – with exchange  Link multiplication and division  Divide a 2-digit number by a 1-digit number – no exchange  Divide a 2-digit number by a 1-digit number – flexible partitioning.  Divide a 2-digit number by a 1-digit number – with remainders  Understand multiplication by focusing on scaling as opposed to repeated addition.  Length and perimeter.  Measure in metres and centimetres  Measure in millimetres  Measure in centimetres and millimetres  Metres, centimetres and millimetres  Equivalent lengths (metres and centimetres)  Equivalent lengths (centimetres and millimetres)  Compare lengths  Add and subtract lengths  Understand what perimeter is  Measure and calculate perimeter  Fractions  Understand the denominators of unit fractions  Compare and order unit fractions  Understand the numerators of non-unit fractions  Understand the whole  Compare and order non-unit fractions  Fractions and scales  Fractions and count fractions on a number line  Equivalent fractions on a number line and as bar models.  Mass and capacity  Use scales  Measure mass in grams  Measure mass in kilograms and grams  Equivalent masses (kilograms and grams)  Compare mass  Add and subtract mass  Measure capacity and volume in millilitres  Measure capacity and volume in litres and millilitres  Equivalent capacities and volumes (litres and millilitres) Compare capacity and volume  Add and subtract capacity and volume | **The children should be able to:**  Fractions  Add fractions  Subtract fractions  Partition the whole  Unit fractions of a set of objects  Non-unit fractions of a set of objects  Money  Use and understand pounds and pence  Convert pounds and pence  Add money  Subtract money  Find change  Time  Roman numerals to 12  Tell the time to 5 minutes  Tell the time to the minute  Read time on a digital clock  Use am and pm  Know years, months and days  Days and hours  Hours and minutes – use start and end times  Durations in hours and minutes  Minutes and seconds  Units of time  Solve simple problems with time  Shape  Understand and identify turns and angles  Identify a right angle  Compare angles  Measure and draw accurately  Understand the vocabulary: horizontal and vertical  Parallel and perpendicular.  Recognise and describe 2-D shapes  Draw polygons  Recognise and describe 3-D shapes  Make 3-D shapes  Statistics  Interpret pictograms  Draw pictograms  Interpret bar charts  Draw bar charts  Collect and represent data in different ways  Understand and use two-way tables. |
| **Year 4**  **By the end of:** | | |
| **Autumn term** | **Spring term** | **Summer term** |
| **The children should be able to:**  Place value  Represent, partition and use a number line for numbers to 1,000  Represent and partition numbers to 10,000  Use flexible partitioning of numbers to 10,000  Find 1, 10, 100, 1,000 more or less  Number line to 10,000  Estimate, compare and order numbers to 10,000  Use a number line to 10,000  Roman numerals  Round to the nearest 10, 100 or 1,000  Addition and subtraction  Add and subtract 1s, 10s, 100s and 1,000s  Add up to two 4-digit numbers – no exchange Add two 4-digit numbers – one exchange  Add two 4-digit numbers – more than one exchange  Subtract two 4-digit numbers – no exchange  Subtract two 4-digit numbers – one exchange  Subtract two 4-digit numbers – more than one exchange  Use efficient subtraction  Estimate answers  Use simple checking strategies  Area  Know what area is  Count squares to find area  Make shapes of a certain area  Compare areas.  Multiplication and division  Multiples of 3  Multiply and divide by 6  6 times-table and division facts  Multiply and divide by 9  Know 9 times-table and equivalent division facts  The 3, 6 and 9 times-tables  Multiply and divide by 7  7 times-table and division facts  11 times-table and division facts  12 times-table and division facts  Multiply by 1 and 0  What happens if you divide a number by 1 and itself  Multiply three numbers | **The children should be able to:**  Multiplication and division  Know Factor pairs are.  Use factor pairs  Multiply by 10 and 100  Divide by 10 and 100  Relate facts for multiplication and division  Use Informal written methods for multiplication  Multiply a 2-digit number by a 1-digit number  Multiply a 3-digit number by a 1-digit number  Divide a 2-digit number by a 1-digit number (1)  Divide a 2-digit number by a 1-digit number (2)  Divide a 3-digit number by a 1-digit number  Solve correspondence problems  Use efficient multiplication  Length and perimeter  Measure in kilometres and metres  Know equivalent lengths (kilometres and metres)  Understand and find Perimeter on a grid  Understand and find Perimeter of a rectangle  Understand and find Perimeter of rectilinear shapes  Find missing lengths in rectilinear shapes  Calculate perimeter of rectilinear shapes  Calculate the Perimeter of regular polygons  Calculate the Perimeter of polygons  Fractions  Understand the whole  Count beyond 1  Partition a mixed number  Use number lines with mixed numbers  Compare and order mixed numbers  Understand improper fractions  Convert mixed numbers to improper fractions  Convert improper fractions to mixed numbers  Identify equivalent fractions on a number line  Know equivalent fraction families  Add two or more fractions  Add fractions and mixed numbers  Subtract two fractions  Subtract from whole amounts  Subtract from mixed numbers  Decimals  Tenths as fractions  Tenths as decimals  Tenths on a place value chart  Tenths on a number line  Divide a 1-digit number by 10  Divide a 2-digit number by 10  Hundredths as fractions  Hundredths as decimals  Hundredths on a place value chart  Divide a 1- or 2-digit number by 100 | **The children should be able to:**  Decimals  Make a whole with tenths  Make a whole with hundredths  Partition decimals  Flexibly partition decimals  Compare decimals  Order decimals  Round to the nearest whole number  Know halves and quarters as decimals.  Money  Write money using decimals  Convert between pounds and pence  Compare amounts of money  Estimate with money  Calculate with money  Solve problems with money  Time  Understand Years, months, weeks and days, hours, minutes and seconds  Convert between analogue and digital times  Convert to the 24-hour clock  Convert from the 24-hour clock  Shape  Understand angles as turns  Identify angles  Compare and order angles  Know the properties and types of triangles  Know properties and names of quadrilaterals  Know properties of polygons  Lines of symmetry  Complete a symmetric figure.  Statistics  Interpret charts  Know the meaning of comparison, sum and difference  Interpret line graphs  Draw line graphs  Position and direction  Describe position using coordinates  Plot coordinates  Draw 2-D shapes on a grid  Translate on a grid  Describe translation on a grid |
| **Year 5**  **By the end of:** | | |
| **Autumn term** | **Spring term** | **Summer term** |
| **The children should be able to:**  Place value  Roman numerals to 1,000  Numbers to 10,000  Numbers to 100,000  Numbers to 1,000,000  Read and write numbers to 1,000,000.  Powers of 10 10/100/1,000/10,000/100,000  Partition numbers to 1,000,000  Number line to 1,000,000  Compare and order numbers to 100,000 and 1,000,000.  Round to the nearest 10, 100 or 1,000  Round within 100,000  Round within 1,000,000  Addition and subtraction  Mental strategies  Add or subtract whole numbers with more than four digits.  Use rounding to check answers.  Inverse operations (addition and subtraction)  Multi-step addition and subtraction problems  Compare calculations.  Find missing numbers in number sentences.  Multiplication and division  Multiples  Common multiples  Factors  Know common factors.  Know prime, square and cube numbers.  Multiply by 10, 100 and 1,000.  Divide by 10, 100 and 1,000.  Know multiples of 10, 100 and 1,000  Fractions  Find fractions equivalent to a unit fraction.  Find fractions equivalent to a non-unit fraction.  Recognise equivalent fractions.  Convert improper fractions to mixed numbers.  Convert mixed numbers to improper fractions.  Compare and order fractions less than 1  Compare and order fractions greater than 1  Add and subtract fractions with the same denominator.  Add fractions within 1.  Add fractions with total greater than 1.  Add to a mixed number.  Add two mixed numbers.  Subtract fractions.  Subtract from a mixed number.  Subtract from a mixed number – breaking the whole.  Subtract two mixed numbers. | **The children should be able to:**  Multiplication and division.  Multiply up to a 4-digit number by a 1-digit number.  Multiply a 2-digit number by a 2-digit number.  Multiply a 3-digit number by a 2-digit number.  Multiply a 4-digit number by a 2-digit number  Solve problems with multiplication.  Use short division to work out division sums.  Divide a 4-digit number by a 1-digit number.  Divide with remainders.  Use efficient division.  Solve problems with multiplication and division.  Fractions  Multiply a unit fraction by an integer.  Multiply a non-unit fraction by an integer.  Multiply a mixed number by an integer.  Calculate a fraction of a quantity.  Calculate a fraction of an amount.  Find the whole.  Use fractions as operators.  Decimals and percentages  Recognise and write decimals up to 2 decimal places  Identify equivalent fractions and decimals (tenths)  Identify equivalent fractions and decimals (hundredths)  Identify equivalent fractions and decimals.  Understand thousandths as fractions.  Understand thousandths as decimals.  Understand and write thousandths on a place value chart.  Order and compare decimals (same number of decimal places) and decimals with up to 3 decimal places.  Round to the nearest whole number  Round to 1 decimal place  Understand percentages.  Identify Percentages as fractions.  Identify Percentages as decimals.  Recognise equivalent fractions, decimals and percentages.  Perimeter and area  Calculate the perimeter of rectangles.  Calculate the perimeter of rectilinear shapes.  Calculate the perimeter of polygons.  Calculate the area of rectangles.  Calculate the area of compound shapes.  Estimate area.  Statistics  Draw line graphs.  Read and interpret line graphs.  Read and interpret tables.  Read and interpret timetables. | **The children should be able to:**  Shape.  Understand and use degrees.  Classify angles.  Estimate angles.  Measure angles up to 180°  Draw lines and angles accurately.  Calculate angles around a point.  Calculate angles on a straight line.  To identify and calculate lengths and angles in shapes.  Know some properties of Regular and irregular polygons.  Identify features and names of 3-D shapes.  Position and direction  Read and plot coordinates.  Solve problems with coordinates.  Understand and describe translation including with coordinates.  Identify and draw lines of symmetry.  Identify reflection in horizontal and vertical lines.  Decimals  Use known facts to add and subtract decimals within 1  Calculate and identify complements to 1  Add and subtract decimals across 1.  Add and subtract decimals with the same number of decimal places.  Add and subtract decimals with different numbers of decimal places.  Use efficient strategies for adding and subtracting decimals.  Identify and create decimal sequences.  Multiply and divide by 10, 100 and 1,000  Multiply and divide decimals finding missing values.  Negative numbers  Understand negative numbers.  Count through zero in 1s.  Count through zero in multiples.  Compare and order negative numbers.  Find the difference between negative numbers.  Converting units  Identifying Kilograms and kilometres  Identifying Millimetres and millilitres  Convert units of length  Convert between metric and imperial units.  Convert units of time  Calculate with timetables.  Volume  Understand cubic centimetres.  Compare volume.  Estimate volume.  Estimate capacity. |
| **Year 6**  **By the end of:** | | |
| **Autumn term** | **Spring term** | **Summer term** |
| **The children should be able to:**  Place value  Explore numbers to 1,000,000 and 10,000 revise partitioning, exploring both standard and non-standard ways of composing numbers  Identify integers that are 10, 100, 1,000 times the size, or one-tenth, one-hundredth, one-thousandth the size of other integers.  Read and write numbers to 10,000,000.  Explore a number line to 10,000,000.  Compare and order any integers.  Round any integer  Explore negative numbers in real life contexts.  Addition, subtraction, multiplication and division.  Add and subtract integers.  Identify Common factors and common multiples.  Demonstrate rules of divisibility  Know primes to 100 and square and cube numbers.  Multiply up to a 4-digit number by a 2-digit number.  Solve problems with multiplication.  Calculate using short division.  Use division using factors.  Introduction to long division  Use Long division with remainders.  Solve problems with division.  Solve multi-step problems.  Calculate answers using order of operations.  Find calculations mentally and using estimation.  Reason using known facts.  Fractions.  Identify equivalent fractions and simplifying.  Identify and place equivalent fractions on a number line.  Compare and order (denominator)  Compare and order (numerator)  Add and subtract simple fractions.  Add and subtract any two fractions.  Add mixed numbers.  Subtract mixed numbers.  Solve multi-step problems.  Multiply fractions by integers.  Multiply fractions by fractions.  Divide a fraction by an integer.  Divide any fraction by an integer.  Mixed questions with fractions  Revise and find the fraction of an amount.  Revise and find fraction of an amount – including finding the whole.  Converting units  Identify and use Metric measures.  Convert metric measures.  Calculate with metric measures.  To convert between miles and kilometres  Understand Imperial measures. | **The children should be able to:**  Ratio  Use ratio language.  Understand the ratio symbol.  The comparisons and similarities between Ratio and fractions  Understand and create Scale drawing.  Use scale factors.  Identify Similar shapes using scale factors.  Solve Ratio problems and proportion problems, including in a real-life context e.g., recipes.  Algebra  Understand and solve 1-step function and 2 step function machines.  Understand and create form expressions.  Understand and use substitution, Formulae and  Form equations  Solve 1-step equations.  Solve 2-step equations.  Find pairs of values  Solve problems with two unknowns.  Decimals  Place value within 1  Place value – integers and decimals  Round decimals  Add and subtract decimals  Multiply and divide by 10, 100 and 1,000  Multiply decimals by integers.  Divide decimals by integers.  Multiply and divide decimals in context.  Fractions decimals and percentages.  Identify decimal and fraction equivalents.  Understand fractions as division.  Understand percentages.  Convert Fractions to percentages.  Identify equivalent fractions, decimals, and percentages.  Order fractions, decimals, and percentages  Calculate the percentage of an amount – one step.  Calculate the percentage of an amount – multi-step.  Calculate the missing values from percentages.  Area, perimeter and volume  Shapes – same area  Identify and calculate Area and perimeter.  Find the Area of a triangle – counting squares.  Find the Area of a right-angled triangle.  Find the area of any triangle.  Find the Area of a parallelogram.  Calculate Volume – counting cubes.  Calculate Volume of a cuboid  Statistics  Interpret, compare and complete Line graphs.  Interpret, compare and complete Dual bar charts.  Read and interpret pie charts.  Interpret Pie charts with percentages.  Draw pie charts.  Calculate The mean | **The children should be able to:**  Shape  Measure and classify angles.  Calculate angles.  Identify, compare, and calculate Vertically opposite angles.  Identify and calculate Angles in a triangle.  Identify Angles in a triangle – special cases.  Calculate missing Angles in a triangle.  Calculate and identify Angles in a quadrilateral.  Calculate and identify Angles in polygons.  Identify the properties of Circles.  Draw shapes accurately.  Identify and create Nets of 3-D shapes.  Position and reflection  Identify The first quadrant.  Read and plot points in four quadrants.  Solve problems with coordinates.  Describe and draw translations.  Describe and draw reflections. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **St Joseph’s RC Primary School**  **Mathematics Long Term Plan**  **EYFS (Nursery and Reception)** | | | | | | | | | | | | | | |
|  | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** | **Week 9** | **Week 10** | **Week 11** | **Week 12** | **Week 13** | **Week 14** |
| **Autumn** | **Getting to Know You** | | | **Just Like Me!** | | | **It’s Me 1 2 3!** | | | **Light and Dark** | | | Consolidation | |
| **Spring** | **Alive in 5!** | | | **Growing 6, 7, 8** | | | **Building 9 and 10** | | | Consolidation | | |  | |
| **Summer** | **To 20 and Beyond** | | | **First Then Now** | | | **Find My Pattern** | | | **On The Move** | | |  | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **St Joseph’s RC Primary School**  **Mathematics Long Term Plan**  **Year 1** | | | | | | | | | | | | |
|  | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** | **Week 9** | **Week 10** | **Week 11** | **Week 12** |
| **Autumn** | Number  **Place Value (within 10)** | | | | | Number  **Addition and Subtraction (within 10)** | | | | | Geometry  **Shape** | Consolidation |
| **Spring** | Number  **Place Value (within 20)** | | | Number  **Addition and Subtraction (within 10)** | | | Number  **Place Value (within 50)** | | Measurement  **Length and Height** | | Measurement  **Mass and Volume** | |
| **Summer** | Number  **Multiplication and Division** | | | Number  **Fractions** | | Geometry: **Position and Direction** | Number  **Place Value (within 50)** | | Measurement  **Money** | Measurement  **Time** | | Consolidation |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **St Joseph’s RC Primary School**  **Mathematics Long Term Plan**  **Year 2** | | | | | | | | | | | | |
|  | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** | **Week 9** | **Week 10** | **Week 11** | **Week 12** |
| **Autumn** | Number  **Place Value** | | | | Number  **Addition and Subtraction** | | | | | Geometry  **Shape** | | |
| **Spring** | Measurement  **Money** | | Number  **Multiplication and Division** | | | | | Measurement  **Length and Height** | | Measurement  **Mass, capacity and Temperature** | | |
| **Summer** | **Statistics** | | Number  **Fractions** | | | Geometry  **Position and Direction** | | Problem and Solving | | Measurement  **Time** | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **St Joseph’s RC Primary School**  **Mathematics Long Term Plan**  **Year 3** | | | | | | | | | | | | | | |
|  | **Week 1** | **Week 2** | **Week 3** | **Week 4** | | **Week 5** | **Week 6** | **Week 7** | | **Week 8** | **Week 9** | **Week 10** | **Week 11** | **Week 12** |
| **Autumn** | Number  **Place Value** | | | Number  **Addition and Subtraction** | | | | | | | Number  **Multiplication and Division A** | | | |
| **Spring** | Number  **Multiplication and Division B** | | | Measurement  **Length and Perimeter** | | | | | Number  **Fractions A** | | | Measurement  **Mass and Capacity** | | |
| **Summer** | Number  **Fractions B** | | Measurement  **Money** | | Measurement  **Time** | | | | | Geometry  **Shape** | | **Statistics** | | Consolidation |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **St Joseph’s RC Primary School**  **Mathematics Long Term Plan**  **Year 4** | | | | | | | | | | | | |
|  | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** | **Week 9** | **Week 10** | **Week 11** | **Week 12** |
| **Autumn** | Number  **Place Value** | | | | Number  **Addition and Subtraction** | | | Measurement  **Area** | Number  **Multiplication and Division A** | | | Consolidation |
| **Spring** | Number  **Multiplication and Division B** | | | Measurement  **Length and Perimeter** | | Number  **Fractions** | | | | Number  **Decimals A** | | |
| **Summer** | Number  **Decimals B** | | Measurement  **Money** | | Measurement  **Time** | | Consolidation | Geometry  **Shape** | | **Statistics** | Geometry  **Position and Direction** | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **St Joseph’s RC Primary School**  **Mathematics Long Term Plan**  **Year 5** | | | | | | | | | | | | |
|  | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** | **Week 9** | **Week 10** | **Week 11** | **Week 12** |
| **Autumn** | Number  **Place Value** | | | Number  **Addition and Subtraction** | | Number  **Multiplication and Division A** | | | Number  **Fractions A** | | | |
| **Spring** | Number  **Multiplication and Division B** | | | Number  **Fractions B** | | Number  **Decimals and Percentages** | | | Measurement  **Perimeter and Area** | | **Statistics** | |
| **Summer** | Geometry  **Shape** | | | Geometry  **Position and Direction** | | Number  **Decimals** | | | Number  **Negative Numbers** | Measurement  **Converting Units** | | Measurement  **Volume** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **St Joseph’s RC Primary School**  **Mathematics Long Term Plan**  **Year 6** | | | | | | | | | | | | | | |
|  | **Week 1** | **Week 2** | | **Week 3** | **Week 4** | **Week 5** | **Week 6** | | **Week 7** | **Week 8** | **Week 9** | **Week 10** | **Week 11** | **Week 12** |
| **Autumn** | Number  **Place Value** | | Number  **Addition, Subtraction**, **Multiplication and Division** | | | | | | | Number  **Fractions A** | | Number  **Fractions B** | | Measurement  **Converting Units** |
| **Spring** | **Ratio** | | **Algebra** | | | Number  **Decimals** | | Number  **Fractions, Decimals and Percentages** | | | Measurement  **Area, Perimeter and Volume** | | **Statistics** | |
| **Summer** | Geometry  **Shape** | | | | Geometry  **Position and Direction** | Themed Projects, Consolidation and Problem Solving | | | | | | | | |