Newport CE Junior School

Mathematics Curriculum Offer

Spring 2014

Newport CE Junior School are covering the 2014 National Curriculum. The documents below outline the pitch and coverage for Spring 2015.

Year 6: This is a transition year for this year group who will be working towards SAT tests based on the old curriculum. Therefore, whilst the attached plan is in place, short term planning may need to be adapted to ensure old curriculum coverage is achieved and embedded.

Mixed ¾ Classes: These classes will work with the Year 4 curriculum plan with an awareness of Year 3 coverage.

Additional policies relevant to the teaching and learning of Mathematics: Maths Policy, Calculation Policy, Homework Policy, Mental Maths Policy and Assessment Policy.

Through classroom management, classroom organisation and contextual links Mathematics teaching at Newport CE Junior School will develop Social, Moral, Spiritual and Cultural Awareness in our children.

Year 3   Spring Term

Mathematical aspect			Curriculum statement
U & A	Week 1	Number, place value and rounding, number sense	● To count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number. ● To recognise the place value of each digit in a three-digit number (hundreds, tens, ones). ● To compare and order numbers up to 1000. ● To identify, represent and estimate numbers using different representations. ● To read and write numbers up to 1000 in numerals and in words. ● To solve number problems and practical problems involving these ideas.
U & A	Week 2	Use partitioning to add and subtract two-digit numbers	To add and subtract numbers mentally, including: ● a three-digit number and ones ● a three-digit number and tens ● a three-digit number and hundreds. ● To estimate the answer to a calculation and use inverse operations to check answers. ● To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
U & A	Week 3	Multiplication and division: multiplying one- digit numbers by multiples of 10	To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Explain the effect of multiplying by 10 and multiples of 10 ● To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental methods. ● To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which *n* objects are connected to *m* objects
U & A	Week 4	Measurement: adding and subtracting money	To add and subtract amounts of money to give change, using both £ and p in practical contexts.
U & A	Week 5	Geometry: Recognising and drawing right angles in 2D shapes	To recognise angles as a property of shape and associate angles with turning. ● To identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.

U & A	Week 6	Addition and subtraction of two- digit numbers using columns	To add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction. ● To estimate the answer to a calculation and use inverse operations to check answers. ● To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
U & A	Week 7	Multiplication and division: multiplying by multiples of 10, and dividing with remainders	To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. ● To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. ● To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which *n* objects are connected to *m* objects. Knowing when to round the quotient up or round down with remainders.
U & A	Week 8	Multiplication and division: multiplying and dividing larger numbers	Pupils develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short multiplication and division.
U & A	Week 9 & 10	Fractions: representing, comparing and ordering unit and non-unit fractions of shapes and numbers	To 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. ● To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. ● To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. ● To recognise and show, using diagrams, equivalent fractions with small denominators. ● To compare and order unit fractions, and fractions with the same denominators. ● To solve problems that involve all of the above.
U & A	Week 11	Measuring using grams and kilograms	To measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).
U & A	Week 12	Statistics: Read and interpret bar charts, using scales	To interpret and present data using bar charts, pictograms and tables. ● To solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.

Year 4   Spring Term

Mathematical aspect			Curriculum statement
U & A	Week 1	Number, place value and rounding, number sense	● To recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). ● To identify, represent and estimate numbers using different representations. ● To order and compare numbers beyond 1000. ● To round any number to the nearest 10, 100 or 1000. ● To count in multiples of 6, 7, 9, 25, 1000. ● To find 1000 more or less than a given number.
U & A	Week 2	Mental and written addition and subtraction	● To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate. ● To estimate and use inverse operations to check answers to a calculation. ● To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. ● To estimate, compare and calculate different measures, including money in pounds and pence.
U & A	Week 3	Mental and written multiplication	To recall multiplication and division facts for multiplication tables up to 12 × 12. ● To 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. ● To multiply two-digit and three-digit numbers by a one-digit number using formal written layout. ● To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which *n* objects are connected to *m objects.*
U & A	Week 4	Mental and written division	To recall multiplication and division facts for multiplication tables up to 12 × 12. ● To 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. Develop fluency in the formal written method of short division with exact answers
U & A	Week 5	Fractions	● To count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten. ● To 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. ● To recognise and show, using diagrams, families of common equivalent fractions.

U & A	Week 6	Fractions and decimals	● To recognise and write decimal equivalents of any number of tenths or hundredths. ● To recognise and write decimal equivalents to 1/4; 1/2; 3/4. ● To 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. ● To round decimals with one decimal place to the nearest whole number. ● To compare numbers with the same number of decimal places up to two decimal places. ● To solve simple measure and money problems involving fractions and decimals to two decimal places.
U & A	Week 7	Measurement: area and perimeter	To measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres find the area of rectilinear shapes by counting squares
U & A	Week 8	Mental calculation: all four operations	To estimate and use inverse operations to check answers to a calculation. ● To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. ● To recall multiplication and division facts for multiplication tables up to 12 × 12. ● To recognise and use factor pairs and commutativity in mental calculations. ● To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which *n* objects are connected to *m objects.*
U & A	Week 9	Written addition and subtraction	To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate. ● To estimate and use inverse operations to check answers to a calculation. ● To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
U & A	Week 10 & 11	Geometry: properties of shape, position and direction	To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. ● To identify acute and obtuse angles and compare and order angles up to two right angles by size. ● To describe positions on a 2D grid as coordinates in the first quadrant. ● To describe movements between positions as translations of a given unit to the left/right and up/down. ● To plot specified points and draw sides to complete a given polygon.
U & A	Week 12	Statistics	To interpret and present discrete data using bar charts and continuous data using time graphs. ● To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and simple line graphs.

Year 5   Spring Term

Mathematical aspect			Curriculum statement
U & A	Week 1	Negative numbers, and solving problems involving numbers	● To read, write, order and compare numbers at least to 1,000,000 and determine the value of each digit. ● To count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000. ● To interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers through zero. ● To round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000. ● To solve number problems and practical problems that involve all of the above.
U & A	Week 2	Addition and subtraction of large numbers and money	To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction). ● To add and subtract numbers mentally with increasingly large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ● To solve problems involving numbers up to three decimal places.
U & A	Week 3	Long multiplication, square numbers and cube numbers	To multiply and divide numbers mentally drawing upon known facts. ● To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ● To solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. ● To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers. ● To recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3). ● To calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes.
U & A	Week 4	Adding and subtracting fractions	To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: 2/5 + 4/5 = 6/5 = 11/5. ● To add and subtract fractions with the same denominator and multiples of the same number.
U & A	Week 5	Geometry: Reflections and translations	● To identify, describe and represent the position of a shape following a reflection or translation using the appropriate language, and know that the shape has not changed.

U & A	Week 6	Measurement: mass	To convert between different units of measure (kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre). ● To understand and use basic equivalences between metric units and common imperial units such as inches, pounds and pints. ● To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.
U & A	Week 7	Addition and subtraction: mental and written methods for large numbers	To add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction). ● To add and subtract numbers mentally with increasingly large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
U & A	Week 8	Multiplication and division: written methods	To multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ● To multiply numbers up to 4 digits by a one- or two-digit number using an efficient written method, including long multiplication for two-digit numbers. ● To divide numbers up to 4 digits by a one-digit number using the efficient written method of short division and interpret remainders appropriately for the context. ● To solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
U & A	Week 9	Calculating with fractions	● To recognise mixed numbers and improper fractions and convert from one form to the other; write mathematical statements > 1 as a mixed number: 2/5 + 4/5 = 6/5 = 11/5. ● To add and subtract fractions with the same denominator and multiples of the same number. ● To multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
U & A	Week 10	Percentages	● To recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction.
U & A	Week 11	Measurement: capacity	To convert between different units of measure (kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre). ● To understand and use basic equivalences between metric units and common imperial units such as inches, pounds and pints. ● To estimate volume and capacity ● To use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling

U & A	Week 12	Statistics: Line graphs/ comparative graphs	To solve comparison, sum and difference problems using information presented in a line graph.

Year 6　　　　Spring Term

Mathematical aspect			Curriculum statement
U & A	Week 1	Negative numbers, and solving problems involving numbers	To read, write, order and compare numbers at least to 10,000,000 and determine the value of each digit. ● To round any whole number to a required degree of accuracy. ● To use negative numbers in context, and calculate intervals across zero. ● To solve number problems and practical problems that involve all of the above.
U & A	Week 2	Mental and written addition and subtraction of decimals and money	To perform mental calculations, including with mixed operations and large numbers. ● To solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
U & A	Week 3	Mental and written multiplication and division	To perform mental calculations, including with mixed operation and large numbers. ● To identify common factors, common multiples and prime numbers (Children could practise using mental methods that involve using factors, for example.) ● To use their knowledge of the order of operations to carry out calculations involving the four operations. ● To use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
U & A	Week 4	Calculating with fractions	To add and subtract fractions with different denominators, using the concept of equivalent fractions. ● To associate a fraction with division to calculate decimal fraction equivalents (0.375) for a simple fraction (3/8). ● To multiply simple pairs of proper fractions, writing the answer in its simplest form (1/4 ÷ 1/2 = 1/8). ● To divide proper fractions by whole numbers (1/3 ÷ 2 = 1/6).
U & A	Week 5	Geometry: Reflections and translations on coordinate axes	● To describe positions on the full co-ordinate grid (all four quadrants). ● To draw and translate simple shapes on the co-ordinate plane, and reflect them in the axes.
U & A	Week 6	Measurement: Perimeter, area and volume	To recognise that shapes with the same area can have different perimeters and vice versa. ● To calculate the area of parallelograms and triangles. ● To recognise when it is necessary to use the formulae for area and volume of shapes. ● To 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.

U & A	Week 7	Calculating with large numbers	To multiply multi-digit numbers up to 4 digits by a two-digit whole number using the efficient written method of long multiplication. ● To divide numbers up to 4 digits by a two-digit whole number using the efficient written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context. ● To perform mental calculations, including with mixed operations and large numbers. ● To use their knowledge of the order of operations to carry out calculations involving the four operations. ● To solve problems involving addition, subtraction, multiplication and division.
U & A	Week 8	Multiplying and dividing decimals	● To multiply one-digit numbers with up to two decimal places by whole numbers. ● To use written division methods in cases where the answer has up to two decimal places. ● To solve problems which require answers to be rounded to specified degrees of accuracy.
U & A	Week 9	Percentages, decimals and fractions Ratio & Proportion	To solve problems involving the calculation of percentages of whole numbers or measures and the use of percentages for comparison. ● To recall and use equivalences between simple fractions, decimals and percentages, including different contexts. To solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts To solve problems involving similar shapes where the scale factor is known or can be found To solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.
U & A	Week 10	Algebra: number puzzles	● To express missing number problems algebraically. ● To use simple formulae expressed in words. ● To generate and describe linear number sequences. ● To find pairs of numbers that satisfy number sentences involving two unknowns. ● To enumerate all possibilities of combinations of two variables.
U & A	Week 11	Measurement: Area and volume	● To solve problems involving the calculation and conversion of units of measure, using decimal notation to three decimal places, where appropriate. ● To use read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit and vice versa, using decimal notation to three decimal places. ● To calculate the area of parallelograms and triangles. ● To recognise when it is necessary to use the formulae for area and volume of shapes.

U & A	Week 12	Statistics: Line graphs	To interpret and construct line graphs and use these to solve problems.