Newington Green and Rotherfield Maths MTP - Year 2

Blue font in Spring/Summer indicates previously untaught objective

Green font indicates cross-curricular links

Autumn 1			
WW2			
Number and Place Value **Weeks 1 -2**	**Addition and Subtraction** **Weeks 3 -4**	**Measurement** **Weeks 5-6**	**Fractions and decimals** **Week 7 and 8 decimals**
• read, write, order and compare numbers up to 10 000 000 and determine the value of each digit e.g. What must be added to 26 523 to change it to 54 525? • round any whole number to a required degree of accuracy e.g. round 265 496 to the nearest 10 000 (270 000) • use negative numbers in context, and calculate intervals across zero e.g. how much warmer is 5°C than -4°C? (9°C) • solve number and practical problems that involve all of the above e.g. What is the largest 5-digit number whose digits sum to 20? (99200)	HISTORY LINK: To be able to understand how rationing in Britain was used during WW2. • solve problems involving addition, subtraction, multiplication and division e.g. 396 children and 37 adults went on a school trip. Buses seat 57 people. How many buses were needed? • 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 • perform mental calculations, including with mixed operations and large numbers e.g. (13 500 × 2) ÷ 9 = 3000 • identify common factors, common multiples and prime numbers e.g. common factors of 12 and 15 are 1 and 3; common multiples of 4 and 6	HISTORY LINK: To be able to understand how rationing in Britain was used during WW2. • solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate e.g. Ben walked 850m to the bus stop, travelled on a bus for 8.67km and then a train for 120.9km; how far did he travel altogether? • 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 e.g. know that a mile is approximately 1.6km (and 1km is approximately 0.6miles) and use this to make rough calculations • recognise that shapes with the same areas can have different perimeters and vice versa e.g. investigate triangles with areas of 12cm2 to find which has the smallest perimeter	• use common factors to simplify fractions e.g. as the numerator and denominator have a common factor of 4, 12/16 can be simplified to 3/4 • use common multiples to express fractions in the same denomination e.g. as the denominators have a common multiple of 12, 3/4 and 5/6 can both be expressed in twelfths i.e. 9/12 and 10/12 respectively • compare and order fractions, including fractions >1 e.g. put these fractions in order from the smallest: 5/4, 5/8, 3/2, 14/8 • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions e.g. 1/2 + 1/8 = 5/8 • 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 • associate a fraction with division and calculate decimal fraction equivalents e.g. 0.375 for a simple fraction e.g. 3/8 • 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 e.g. 205.6 ÷ 100 =2.056

			• multiply one-digit numbers with up to two decimal places by whole numbers e.g. 0.6 x 7 • use written division methods in cases where the answer has up to two decimal places e.g. 458 ÷ 8 = 57.25 • 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 e.g. order 4/5 , 75%, 0.9, 19/20

Autumn 2			
Migration			
Statistics **Weeks 9**	**Position and Direction** **Weeks 10**	**Algebra** **Weeks 11-12**	**Ratio and Proportion** **Weeks 13-14**
SCIENCE LINK: To be able to recognise the impact of diet, exercise, drugs and lifestyle on the way our bodies function. • interpret and construct pie charts and line graphs and use these to solve problems e.g. draw a pie chart to show how Jack spends his £36 birthday money: £9 snacks £15 toys £12 books • calculate and interpret the mean as an average e.g. find the mean height of these children: 1.2m, 1.07m and 1.12m	• describe positions on the full coordinate grid (all four quadrants) e.g. (-3, 7) • draw and translate simple shapes on the coordinate plane, and reflect them in the axes	• use simple formulae expressed in words e.g. write a formula for the number of months, m, in y years. (y=12m) • generate and describe linear number sequences e.g. write the first 5 terms in a 'decrease by 9' sequence starting from 20, or find the nth term of a simple sequence e.g. 4, 8, 12, 16, … 4n • express missing number problems algebraically e.g. 17 = x + 4.5 • find pairs of numbers that satisfy an equation with two unknowns e.g. a – b = 5, give pairs of values that a and b could have (e.g. 8, 3 or 6.5, 1.5 or …) or. p×q=24; if p and q are both positive, even numbers, list all the possible combinations (e.g. 2×12, 4×6, …) • enumerate possibilities of combinations of two variables e.g. investigate how many different ways 2 red eggs can be placed in a 6-space egg carton, by starting with a 3-space carton, 4-space carton etc?	GEOGRAPHY LINK: To understand what migration is, why people might migrate from one region to another and the effect migration has on populations. (e.g. study population numbers throughout WW2). • PSHE LINK: To know about people who have moved to Islington from other places (inc refugees). • solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts e.g. adjust a recipe for 4 people, to serve 20 people • 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 e.g. two rectangular picture frames are the same shape, but one is bigger than the other; the smaller one measures 10cm by 15cm; the larger frame has a width of 30cm, what is its length? • solve problems involving unequal sharing and grouping using knowledge of fractions and multiples e.g. for every egg you need three spoons of flour; how many eggs are needed for 12 spoons of flour?

Spring 1		
Tudors		
Fractions, Decimals and Percentages **Weeks 1- 2**	**Measurement** **Week 3**	**Geometry** **Week 4 -5**
• use common factors to simplify fractions use common multiples to express fractions in the same denomination • compare and order fractions, including fractions >1 e.g. put these fractions in order from the smallest: 5/4, 5/6, 3/2, 4/3 • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions e.g. 1/2 + 1/8 = 5/8 • 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 • associate a fraction with division and calculate decimal fraction equivalents e.g. 0.375 for a simple fraction e.g. 3/8 • 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 e.g. ___ × 100 = 140.8 • multiply one-digit numbers with up to two decimal places by whole numbers e.g. 0.06 x 8 • use written division methods in cases where the answer has up to two decimal places e.g. 458 ÷ 8 = 57.25 • 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 e.g. find a fraction which lies between 0.4 and 0.5	• recognise that shapes with the same areas can have different perimeters and vice versa e.g. investigate triangles with areas of 12cm2 to find which has the smallest perimeter recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles e.g. compare the 'counting squares' method to using the formula for the area of a parallelogram • 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	• draw 2-D shapes using given dimensions and angles using measuring tools and conventional markings and labels for lines and angles e.g. complete a triangle with given lengths and angles • recognise, describe and build simple 3-D shapes, including making nets e.g. visualise 3-D shapes drawn on isometric paper and begin to draw 2-D representations of 3-D shapes • compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygon • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius, describing it algebraically as d=2×r • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles describing them algebraically e.g. a=180-(b+c) • predict missing coordinates of quadrilaterals by using the properties of shapes, which may be expressed algebraically e.g. translating vertex (a, b) to (a-2, b+3), or find the other vertices of a square, given two of them are (a, b) and (a+d, b+d)

Spring 2			
Spain			
Addition, Subtraction, Multiplication and Division **Weeks 7-8**	**Algebra** **Weeks 9–10**	**Measurement** **Week 11**	**Ratio and Proportion** **Weeks 12**
GEOGRAPHY LINK: To understand the key aspects of Spain's economy and be able to reflect on the importance and value of tourism. PSHE LINK: Social skills: To know how to plan a household budget. • multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication e.g. 230.6 x 27 • 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 • perform mental calculations, including with mixed operations and large numbers e.g. (13 400 + 10 600) × 4 ÷ 12 = 8000 • identify common factors, common multiples and prime numbers e.g. find the smallest common multiple of 5, 6 and 8 • use their knowledge of the order of operations to carry out calculations involving the four operations and using brackets e.g. 2 + 1 x 3 = 5 and (2 + 1) x 3 = 9 • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why e.g.	• express missing number problems algebraically e.g. the perimeter of a triangle is 20cm; it has two sides of length 8cm; what is the length of the other side? (20=2×8+x so x=4cm) • use simple formulae expressed in words e.g. write a formula for the cost of a party, C, which costs £100 plus £2 per person, n. (C=100+2n) • generate and describe linear number sequences e.g. write the first 5 terms in a 'decrease by 9' sequence starting from 20, or find the nth term of a simple sequence e.g. 4, 8, 12, 16, … 4n • find pairs of numbers that satisfy number sentences involving two unknowns e.g. a – b = 5, give pairs of values that a and b could have e.g. 8, 3 or 6.5, 1.5 or … or. p×q=24; if p and q are both positive, even numbers, list all the possible combinations (e.g. 2×12, 4×6, …) • enumerate all possibilities of combinations of two variables e.g. investigate all possible half-time scores when the full time score of a football match is 4:2	• solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate e.g. Ben walked 850m to the bus stop, travelled on a bus for 8.67km and then a train for 120.9km; how far did he travel altogether? • 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 e.g. know that a mile is approximately 1.6km (and 1km is approximately 0.6miles) and use this to make rough calculations.	GEOGRAPHY LINKS: To compare and contrast a region of Spain with the local environment (e.g. population data). To be able to relate human geography to locality (e.g. population data). • solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts e.g. adjust a recipe for 4 people, to serve 6 people • 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 e.g. two rectangular picture frames are the same shape, but one is bigger than the other; the smaller one measures 10cm by 15cm; the larger frame has a width of 30cm, what is its length? • solve problems involving unequal sharing and grouping using knowledge of fractions and multiples e.g. for every egg you need three spoons of flour; how many eggs are needed for 12 spoons of flour?

Three people won £365 496 on the lottery; one received £197 540, another received £40 010; how much did the third person receive? • solve problems involving addition, subtraction, multiplication and division e.g. I think of a number and subtract 5.6 from it then multiply the result by 6; the answer is 7.2; what was my number? • use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy e.g. A box contains approximately 52 matches; how many boxes can be filled with 10 000 matches?			

Summer 1 – SATs revision cycle				
Women and Equality				
Number and Place Value **Week 1 (according to need)**	**Addition and Subtraction** **Weeks 2 (according to need)**	**Measurement** **Week 3 (according to need)**	**Geometry** **Week 4 (according to need)**	**Statistics** **Week 5 (according to need)**
• 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 e.g. What is the smallest number which rounds to 500 000, to the nearest 1000? (499 500). • use negative numbers in context, and calculate intervals across zero	• 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	• recognise that shapes with the same areas can have different perimeters and vice versa e.g. investigate triangles with areas of 12cm2 to find which has the smallest perimeter recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles e.g. compare the 'counting squares'	• draw 2-D shapes using given dimensions and angles e.g. construct a triangle or complete a parallelogram with given lengths 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	HISTORY LINK: To be able to appreciate that men and women have not been treated equally in the past. • interpret and construct pie charts and line graphs and use these to solve problems e.g. connect conversion from kilometres to miles in measure to its graphical representation • calculate and interpret the mean as an average

	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	method to using the formula for the area of a parallelogram • 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		

Summer 2 – consolidate prior learning

Climate Change

Position and Direction **Week 8**	**Ratio and Proportion** **Week 9**	**Fractions, Decimals and Percentages** **Weeks 10-12**
• 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	• solve problems involving similar shapes where the scale factor is known or can be found e.g. adjust a recipe for 6 people, to serve 15 people	• use common factors to simplify fractions • use common multiples to express fractions in the same denomination • compare and order fractions, including fractions > 1 e.g. put these fractions in order from the smallest: 5/4, 5/6, 3/5, 4/3 • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions e.g. 13/4 - 5/6 = 11/12 • 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 • associate a fraction with division and calculate decimal fraction equivalents e.g. 0.375 for a simple fraction e.g. 5/8 • 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 e.g. ____ ÷ 1000 = 0.45