Mathematics Long Term Plan

Robin 2021-2022

Autumn

	National Curriculum Objectives	Small Steps
Number: Place Value **3 weeks**	• Read and write numbers to at least 100 in numerals and in words. • 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.	• Count forward and backwards within 20 • Tens and ones within 20 • Count forward and backwards within 50 • Tens and ones within 50 • Compare numbers within 50 • Count objects to 100 and read and write numbers in numerals and words • Represent numbers to 100 • Tens and ones with a part whole model • Tens and ones using addition • Use a place value chart

	National Curriculum Objectives	Small Steps
Number: Place Value **3 weeks**	• Identify, represent and estimate numbers using different representations. • Find 10 or 100 more or less than a given number • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones). • Compare and order numbers up to 1000 • Read and write numbers up to 1000 in numerals and in words. • Solve number problems and practical problems involving these ideas.	• Representing numbers to 100 • Tens and ones using addition • Hundreds • Represent numbers to 1,000 • 100s, 10s and 1s (1) • 100s, 10s and 1s (2) • Number line to 1,000 • Find 1, 10, 100 more or less than a given number • Compare objects to 1,000 • Compare numbers to 1,000 • Order numbers • Count in 50s

	• Use place value and number facts to solve problems. • Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.	• Compare objects • Compare numbers • Order objects and numbers • Count in 2s • Count in 5s • Count in 10s • Count in 3s
Number: Addition and Subtraction **5 weeks**	• Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. • Add and subtract numbers 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 the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • Solve problems with addition and subtraction: using concrete objects and pictorial	• Fact families – Addition and subtraction bonds to 20 • Check calculations • Compare number sentences • Related facts • Bonds to 100 (tens) • Add and subtract 1s • 10 more and 10 less • Add and subtract 10s • Add by making 10 • Add a 2-digit and 1-digit number – crossing ten • Subtraction - crossing 10 • Subtract a 1-digit number from a 2-digit number – crossing ten • Add two 2-digit numbers – not crossing ten – add ones and add tens • Add two 2-digit numbers – crossing ten – add ones and add tens • Subtract a 2-digit number from a 2-digit

	• Count from 0 in multiples of 4, 8, 50 and 100	
Number: Addition and Subtraction **5 weeks**	• Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds. • Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. • Estimate the answer to a calculation and use inverse operations to check answers. • Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	• Add and subtract multiples of 100 • Add and subtract 1s • Add and subtract 3-digit numbers and ones – not crossing 10 • Add a 2-digit and 1-digit number – crossing 10 • Add 3-digit and 1-digit numbers – crossing 10 • Subtract a 1-digit number from 2-digits – crossing 10 • Subtract a 1-digit number from a 3-digit number – crossing 10 • Add and subtract 3-digit numbers and tens – not crossing 100 • Add a 3-digit number and tens – crossing 100 • Subtract tens from a 3-digit number – crossing 100 • Add and subtract 100s • Spot the pattern – making it explicit

	representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods. • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	number – not crossing ten • Subtract a 2-digit number from a 2-digit number – crossing ten – subtract ones and tens • Find and make number bonds • Bonds to 100 (tens and ones) • Add three 1-digit numbers
Measurement: Money **2 weeks**	• Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.	• Recognising coins and notes • Count money – pence • Count money – pounds (notes and coins)

		• Add 2-digit numbers – crossing 10 – add ones and add tens • Subtract a 2-digit number from a 2-digit number – crossing 10 • Add and subtract a 2-digit and 3-digit number – not crossing 10 or 100 • Add a 2-digit and 3-digit number – crossing 10 or 100 • Subtract a 2-digit number from a 3-digit number – cross the 10 or 100 • Add two 3-digit numbers – not crossing 10 or 100 • Add two 3-digit numbers – crossing 10 or 100 • Subtract a 3-digit number from a 3-digit number – no exchange • Subtract a 3-digit number from a 3-digit number – exchange • Estimate answers to calculations • Check answers
Measurement: Money **2 weeks**	• Add and subtract amounts of money to give change, using both £ and p in practical contexts.	• Count money (pence) • Count money (pounds) • Pounds and pence

	• 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.	• Count money – notes and coins • Select money • Make the same amount • Compare money • Find the total • Find the difference • Find change • Two-step problems
Multiplication and Division **2 weeks**	• Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers. • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) sign. • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. • Show that the multiplication of two numbers can be done in	• Make equal groups • Add equal groups • Make arrays

		• Convert pounds and pence • Add money • Subtract money • Give change
Multiplication and Division **2 weeks**	• Count from 0 in multiples of 4, 8, 50 and 100 • Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. • Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. • Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and	• Multiplication – equal groups • Multiplication using the symbol • Using arrays • 2 times-table • 5 times-table • Make equal groups – sharing • Make equal groups – grouping • Divide by 2 • Divide by 5 • Divide by 10 • Multiply by 3 • Divide by 3 • The 3 times-table • Multiply by 4 • Divide by 4 • The 4 times-table • Multiply by 8 • Divide by 8 • The 8 times-table

	any order (commutative) and division of one number by another cannot.	

	correspondence problems in which n objects are connected to m objectives.	

Spring

	National Curriculum Objectives	Small Steps
Multiplication and Division **4 weeks**	• Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers. • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) sign. • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. • Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	• Recognise equal groups • Make equal groups • Add equal groups • Multiplication sentences using the × symbol • Multiplication sentences from pictures • Use arrays • Make doubles • 2 times-table • 5 times-table • 10 times-table • Make equal groups - sharing • Make equal groups - grouping • Divide by 2 • Odd & even numbers • Divide by 5 • Divide by 10

	National Curriculum Objectives	Small Steps
Multiplication and Division **4 weeks**	• Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. • Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. • Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objectives.	• Consolidate 2, 4 and 8 times-tables • Comparing statements • Related calculations • Multiply 2-digits by 1-digit (1) • Multiply 2-digits by 1-digit (2) • Divide 2-digits by 1-digit (1) • Divide 2-digits by 1-digit (2) • Divide 2-digits by 1-digit (3) • Scaling • How many ways?

Statistics **2 weeks**	• 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.	• Make tally charts • Draw pictograms (1-1) • Interpret pictograms (1-1) • Draw pictograms (2, 5 and 10) • Interpret pictograms (2, 5 and 10) • Block diagrams
Geometry: Properties of Shape **3 weeks**	• 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.	• Recognise 2D and 3D shapes • Count sides on 2D shapes • Count vertices on 2D shapes • Draw 2D shapes • Lines of symmetry • Sort 2D shapes • Make patterns with 2D shapes • Count faces on 3D shapes • Count edges on 3D shapes • Count vertices on 3D shapes • Sort 3D shapes • Make patterns with 3D shapes

Statistics **2 weeks**	• Interpret and present data using bar charts, pictograms and tables. • Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.	• Make tally charts • Draw pictograms (2, 5 and 10) • Interpret pictograms (2, 5 and 10) • Pictograms • Bar Charts • Tables
Geometry: Properties of Shape **3 weeks**	• Recognise angles as a property of shape or a description of a turn. • 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. • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. • Draw 2-D shapes and make 3-D shapes using modelling materials. • Recognise 3-D shapes in different orientations and describe them.	• Turns and angles • Right angles in shapes • Compare angles • Draw accurately • Horizontal and vertical • Parallel and perpendicular • Recognise and describe 2D shapes • Recognise and describe 3D shapes • Make 3D shapes

Number: Fractions **3 weeks**	• Recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity. • Write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.	• Make equal parts • Recognise a half • Find a half • Recognise a quarter • Find a quarter • Recognise a third • Find a third • Unit fractions • Non-unit fractions • Equivalence of 1/2 and 2/4 • Find three quarters • Count in fractions

Number: Fractions **3 weeks**	• Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 • Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. • Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. • Solve problems that involve all of the above.	• Make equal parts • Recognise a half • Find a half • Recognise a quarter • Find a quarter • Recognise a third • Find a third • Unit fractions • Non-unit fractions • Equivalence of 1/2 and 2/4 • Find three quarters • Count in fractions

Summer

	National Curriculum Objectives	Small Steps
Measurement: Length and Height **2 weeks**	• 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 =	• Compare lengths and heights • Measure lengths (1) • Measure lengths (2) • Measure length (cm) • Measure length (m) • Compare lengths • Order lengths • Four operations with lengths
Position and Direction **2 weeks**	• 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 anti-clockwise). • Order and arrange combinations of mathematical objects in patterns and sequences	• Describe position (1) • Describe position (2) • Describe movement • Describe turns • Describe movement and turns • Making patterns with shapes

	National Curriculum Objectives	Small Steps
Measurement: Length and Perimeter **3 weeks**	• Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). • Measure the perimeter of simple 2D shapes.	• Measure length • Measure length (m) • Equivalent lengths – m & cm • Equivalent lengths – mm & cm • Compare lengths • Add lengths • Subtract lengths • Measure perimeter • Calculate perimeter
Number: Fractions **3 weeks**	• Recognise and show, using diagrams, equivalent fractions with small denominators. • Compare and order unit fractions, and fractions with the same denominators. • Add and subtract fractions with the same denominator within one whole [for example, 57 + 17 = 67] Solve problems that involve all of the above.	• Making the whole • Tenths • Count in tenths • Tenths as decimals • Fractions on a number line • Fractions of a set of objects (1) • Fractions of a set of objects (2) • Fractions of a set of objects (3) • Equivalent fractions (1) • Equivalent fractions (2) • Equivalent fractions (3) • Compare fractions

Consolidation and Problem Solving **2 weeks**		
Measurement: Time **3 weeks**	• 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. • Compare and sequence intervals of time.	• Telling time to the hour • Telling time to the half hour • O'clock and half past • Quarter past and quarter to • Telling time to 5 minutes • Writing time • Hours and days • Find durations of time • Compare durations of time
Measurement: Mass, Capacity	• Choose and use appropriate standard	• Introduce weight and mass

		• Order fractions • Add fractions Subtract fractions
Measurement: Time **3 weeks**	• Tell and write the time from an analogue clock, including using Roman numerals from I to XII and 12-hour and 24-hour clocks. • Estimate and read time with increasing accuracy to the nearest minute. • Record and compare time in terms of seconds, minutes and hours. • Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. • Know the number of seconds in a minute and the number of days in each month, year and leap year. • Compare durations of events [for example to calculate the time taken by particular events or tasks].	• O'clock and half past • Quarter past and quarter to • Months and years • Hours in a day • Telling the time to 5 minutes • Telling the time to the minute • Using a.m. and p.m. • 24-hour clock • Finding the duration • Comparing durations • Start and end times • Measuring time in seconds
Measurement: Mass, Capacity	• Measure, compare, add and subtract: lengths	• Compare mass • Measure mass (1)

and Temperature **3 weeks**	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 =	• Measure mass • Compare mass • Measure mass in grams • Measure mass in kilograms • Introduce capacity and volume • Measure capacity • Compare capacity • Millilitres • Litres • Temperature

and Temperature **3 weeks**	(m/cm/mm); mass (kg/g); volume/capacity (l/ml).	• Measure mass (2) • Compare mass • Add and subtract mass • Compare volume • Measure capacity (1) • Measure capacity (2) • Compare capacity • Add and subtract capacity • Temperature