Maths Medium Term Plan: Year 2 Exceptionally Able

Autumn – first half (Term 1a)

Wk	Topics	Objectives
7	Number • commutativity • inverse operations • column addition and subtraction • addition (money) • subtraction (calculating change) • exchanging coins for the same amount	• That addition and subtraction sums can be calculated in different orders to achieve the same total • Use mental methods for addition and subtraction • Know that subtraction is the inverse of addition • Understand commutativity • use column addition and find the total of two numbers • Use an inverse calculation to solve missing number problems • Find the total of a set of coins beyond £1.50 • Exchange sets of coins for different combinations • Use the fewest coins to pay for an item • Use multiplication facts to count groups of coins • Understand the role of decimal notation when using the pound sign (£) • Use column subtraction to calculate change

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Autumn – second half (Term 1b)

Wk	Topics	Objectives
1	Number • Ordering numbers, using the signs ‹ and › • Rounding to the nearest 10 and 100 • Roman Numerals	• Read and write the temperature to the nearest degree, shown at different intervals • Order 2-digit numbers from smallest to largest • Partition numbers into tens and units • Say whether a number is more or less than another, using the signs ›, ‹ • Compare and order lengths and temperatures from shortest to longest, and from coldest to warmest • Recognise and read 2-digit numbers • Know the multiples of 10 • Round a 2-digit number to the nearest 10 and nearest 100 • Round different measurements (money, temperature, length) to the nearest 10 • Read and write the numbers 1 to 50 using Roman numerals • Use a number key
2	Number • Addition, bridging through ten • Multiplication: column multiplication multiplication box • Word problems	• Use number pairs for 10 to make the next multiple of 10 • Use bridging through 10 to support addition • Count in multiples of 2, 3, 5 and 10 • Recognise the multiplication sign, 'x' • Count in multiples to solve 'lots of' sums • Use column multiplication to solve TU x U, and HTU x TU • Partition 2-digit numbers into tens and units • Use a multiplication box to solve TU x TU • Read a word problem and understand what operation is needed to find the answer • Make independent decisions about problem solving • Solve multiplication word problems in different ways

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Wk	Topics	Objectives
3	Number & Geometry • Equivalent fractions of shapes • Multiple fractions of amounts • Adding fractions • Word problems	• Recognise and read ½ , 1/3 , ¼ and 2/4 , 2/3 • Recognise that a fraction is part of a whole • Show a fraction as a shaded part of a 2D shape • Recognise equivalent fractions shown as shaded parts of 2D shapes • Use sharing as a method of finding multiple fractions of amounts • Solve fraction word problems using a sharing method • Recognising the relationship between fractions and multiplication, and to be able to use this knowledge to solve simple fractions of amounts • Know the role of the numerator and the denominator • To add fractions with the same denominator • Solve fraction word problems involving money
4	Statistics • Collecting and presenting data: frequency table bar chart pictogram line graph • Analysing data • Mean, mode and median	• Know the months of the year • Be able to write the date in numerical form, DD/MM/YY • Collect data using a frequency table • Understand the role of a tally chart and be able to read a '5-bar gate' • Analyse data and know what it shows me • Be able to present data using a bar chart • Read a scale shown at intervals of 1, 2, 3, 5 or 10, where not all numbers are shown • Independently decide on an appropriate scale • Interpret data presented in a pictogram and be able to present data in the same form • Answer data handling questions • Use a line graph to show and analyse changes in temperature • Be able to accurately read a scale on a thermometer • Find the mean, mode and median of a set of data and to be able to understand the term 'average'

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Wk	Topics	Objectives
5	Measurement • Seconds, minutes, hours and days • Analogue and digital time • 24 hour clock • Intervals of time	• Know the months of the year • Be able to write the date in numerical form, DD/MM/YY • Know the relationship between seconds, minutes, hours and days • Recall the number of days in each month • Convert amounts of time between seconds, hours and days • Read and write the time to ¼ past, ½ past and ¼ to on digital and analogue clocks • Read and write the time to the nearest 5 minutes on digital and analogue clocks • Solve time word problems • Read and write the digital time using the 24 hour clock • Record and compare intervals of time • Count on from any time in intervals of 5 minutes
6	Measurement • Temperature Number • Fewest coins • Giving change • Multiplication (multiplication box)	• Know the properties of 3-digit numbers • Measure temperature to the nearest degree using a thermometer • Read a temperature scale shown at different increments, including scales where not all numbers are shown • Know that 0 degrees is freezing point and 100 degrees is boiling point • Be able to read negative numbers on a scale • Present data using a line graph and use this to know what my data shows • Order temperatures from the coldest to the warmest • Use the fewest coins to make an amount up to £5 • Exchange coins for the same amount • Use decimal notation to write amounts of money • Calculate change up to £10.00 • Multiply 2-digit numbers together using a multiplication box • Partition numbers into tens and units • Recall a range of multiplication facts • Quickly multiply any number by ten • Use column addition to calculate a total

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Spring – first half (Term 2a)

Wk	Topics	Objectives
1	Number • Negative numbers • Missing number sequences • Place value • Addition • Multiplication	• Subtract 11, 12 and multiples of ten on a hundred square • Recognise negative numbers shown in a sequence • Cross zero when subtracting • Complete missing number sequences which cross zero • Calculate the difference between 2 numbers to find the missing number • Partition 3-digit numbers into hundreds, tens and units • Use a place value table to add 3-digit numbers which cross ten and one hundred • Exchange units for tens, tens for hundreds and hundreds for thousands, when using a place value table • Recognise, say and write a 5-digit number • Use single digit numbers to investigate different combinations of numbers and to satisfy a given statement • Multiply a 2-digit number by 10, 100 and 1000
2	Number • Doubling and halving • Word problems • Inverse operations • Addition and subtraction • Finding the difference	• Recall doubles within 20 • Partition 3-digit numbers into hundreds, tens and units • Double 3-digit numbers using partitioning, for example: 142 + 142 = 100 + 100 = 200 40 + 40 = 80 2 + 2 = 4 200 + 80 + 4 = 284 • Use partitioning, column addition and recall of number facts to double numbers, and to make independent decisions about problem solving • Solve word problems involving doubles; to understand and the terms: **twice**, **pair** and **repeat** • Recall double facts and use these to recall matching half facts • Use knowledge of doubles to solve an investigation • Mentally add and subtract multiples of 10 from any 2 or 3-digit number • Find the difference between 2 numbers by counting on • Find the difference to complete a missing number sequence

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Wk	Topics	Objectives
3	Number • Multiplication • Mental maths • Inverse operations • Word problems	• Find the total of an amount of coins • Multiply 3 numbers together using 2 stages (3 x 5 x 4 =) • Understand that multiplication can be calculated in any order • Use partitioning to multiply larger numbers • Recognise and recall key number facts when solving multiplication sums • Use mental maths to help solve arithmetic problems, including: counting in tens; multiplying by 10 and 100; using the inverse to find a missing number; recall of double and half facts; times tables • Explain how a problem has been solved and make justifications for problem solving • Recall multiples of 2, 3, 4 and 5 • Know that multiplication is the inverse of division • Know that multiplication can be calculated in either order, but division cannot • Use the inverse operation to solve missing number problems • Know which operation to use when solving 'real life' word problems
4	Number • Properties of numbers • Estimation Number & Statistics • Ordinal numbers • Carroll diagrams	• Discuss the properties of different numbers and compare numbers based on these properties • Understand the term 'factor' and to be able to find factors of numbers based on multiplication facts • Make estimations about the properties of numbers and about calculations based on the recall of multiplication and key number facts • Read and write ordinal numbers • Order sets of numbers and data using ordinal numbers • Say which number is the largest and smallest • Compare and sort numbers using a Carroll diagram

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Wk	Topics	Objectives
5	Measurement • Weight & capacity Scales Ordering Estimation Word problems Converting	• Accurately read a weighing scale • Know that weight is measured using grams and kilograms,, and that there are 1000g in a kilogram • Read a scale shown in divisions of 1, 2, 5, 10, 50 and 100 where not all the numbers are shown • Say if a weight is more or less than another using the signs ‹ and › • Convert grams into kilograms • Make sensible estimations based on given information and to be able to explain these estimations • Solve word problems involving weight • Use multiplication to double, triple or quadruple a set of measurements • Use a weighing scale accurately in practical situations • Use recall of number facts to support the investigation process • Know that capacity is a measure of volume inside a container and that this can be measured using liquid • Measure capacity by reading the scale shown on a measuring cylinder • Know that there are 1000ml in 1 litre and to convert millilitres into litres
6	Number • Column multiplication • Word problems • Division • Remainders • Percentages	• Partitioning 2 and 3-digit numbers into hundreds, tens and units • Use column multiplication, including an understanding of 'carrying' when bridging through ten • Use column multiplication to solve 'real life' word problems • Be able to use ÷ when sharing and recognise that sometimes when we divide there is a remainder • Begin to make judgements about remainders based on knowledge of certain numbers • Recognise a 'percentage' as a fraction of 100 • Know when, where and why percentages are used • Use a calculator to calculate percentages • Use a calculator to solve percentage word problems

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Spring – second half (Term 2b)

Wk	Topics	Objectives
1	Number • Subtraction, bridging through ten • Comparing fractions • Multiple fractions • Decimals	• Be able to bridge through ten when subtracting • Solve fractions using sharing and knowledge of multiplication facts • Be able to solve multiple fractions of amounts • Compare a set of fractions using the signs ‹ and › • Be able to calculate tenths of a whole number • Begin to connect tenths with place value, decimal measures and to division by ten • To accurately place tenths on a numberline between 0 and 1 • To convert fractions shown as tenths into decimal measures
2	Geometry • Perimeter • Area • Reflective symmetry • Repeating patterns • Angles	• Understand 'perimeter' and the total distance around the outside of a shape • Recall the properties of 2D shapes • Use addition to calculate the perimeter of 2D shapes • Measure using a ruler, to the nearest centimetre • Understand 'area' as the amount of space inside a 2D shape • Be able to calculate the area of a 2D shape in 2 ways: counting the number of cm squares a shape holds; and multiplying the height and length of a shape • Recognise a line of symmetry within a 2D shape • Use a mirror to find lines of symmetry in 2D shapes • Use a mirror to reflect a 2D shape across a mirror line • Read and locate coordinates shown on a 4-quadrant grid, including negative numbers • Recognise, explain the features of, and continue a repeating pattern • Use a mirror to reflect a repeating pattern • Recognise an 'angle' as the point at which 2 lines meet • To talk about angles using the terms **acute**, **right**, **obtuse** and **reflex**

Maths Medium Term Plan: Year 2 Exceptionally Able

Wk	Topics	Objectives
3	Number • Inverse operations • Division and multiplication • Word problems	• Use the inverse operation to solve missing number problems • Use the inverse operation to balance missing number sums • Know that division is the inverse of multiplication, and use this rule to find the missing number • Know that multiplication sums can be calculated in either order, but division sums cannot • Use knowledge of inverse operations to solve 'real life' word problems, including 'I'm thinking of a number' problems • Recall mental arithmetic facts, including times table facts • Be able to count comfortably in steps of 2, 3, 5 and 10
4	Number • Money • Calculating change • Exchanging coins • Finding the difference • Profit and loss Statistics • Frequency table • Bar chart	**This week, children will learn how to find the total amount for a group of items, how to calculate change, and different ways to give change. They will then consolidate this learning by setting up and running a 'Year 2' Café for parents and staff. Following on from this, they will learn how to calculate and analyse profit and loss.** • Find the total of an amount of coins • Quickly recall key number facts relating to money, for example 2x50p=£1.00 • Use multiplication and addition to calculate the total amount to pay • Use either subtraction or count on to find the difference, when calculating change • Use a calculator to support problem solving • Give change using different combinations of coins, and be able to exchange coins for the same amount • Collect and present data using a frequency chart, and to be able to understand a tally and the use of a '5-bar gate' • To present data using a bar chart, making independent decisions regarding the size of the chart and the scale used • Know what my data shows me • Understand profit and loss as the difference between the amount of money spent and the amount of money gained. To calculate this by finding the difference between sets of numbers
5	Measurement • Telling the time • 24 hour clock • Word problems	• Know that there are 60 minutes in 1 hour • Count in intervals on 5 minutes on an analogue clock • Read and write the time to half past and quarter past the hour on digital and analogue clocks • Read and write the time to quarter to the hour on digital and analogue clocks • Read and write the time to the nearest 5 minutes on digital and analogue clocks • Compare and order intervals of time, understanding the relationship between seconds, minutes and hours • Understand the difference between AM and PM when reading the time • Read and write the digital time using the 24-hour clock

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Wk	Topics	Objectives
6	Number • Multiplication • Word problems • Calculating change • Money	• Partition 2 and 3-digit numbers into hundreds, tens and units • Multiply larger numbers using partitioning • Recall key multiplication facts to support problem solving • Use this learning to solve 'real life' multiplication word problems • Multiply 3 numbers together in 2 stages • Understand that multiplication can be calculated in any order • Make independent decisions about problem solving • Use a diagram to calculate change from £5.00 and £10.00 • Use addition and subtraction to find the total to pay and the change given • Solve 2-step word problems and explain how these have been calculated

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Summer – first half (Term 3a)

Wk	Topics	Objectives
1	Number • addition & subtraction • calculating change • inverse operations • investigations	• Recognise place value in 3-digit numbers, including 0 as a placeholder. • Add and subtract 3-digit numbers, using mental strategies and partitioning • Know how to add and subtract 3-digit numbers (bridging through 10) using the following methods: mental facts, partitioning, column addition and subtraction. • Be able to count on when calculating change up to £10:00 • Find the difference between 2 numbers using knowledge of number pairs for 10 and 100 • Recognise inverse operations and be able to use this learning to solve more complex missing number problems, involving money. • Make independent decisions regarding problem solving and be able to explain the thought process.

2	Number
	• addition & subtraction
	• number doubles
	• multiplication facts
	• 'real life' number problems relating to:
	  ○ number
	  ○ money
	  ○ time
	  ○ measurement
	  ○ statistics
		• Describe and extend simple number sequences: count in fifties and hundreds from and back to zero.
		• Review knowledge of add/subtract, multiply divide, to solve 'real life' word problems
		• Solve 'real life' problems using doubles facts
		• Rehearse doubles of all numbers to at least 15, doubles of multiples of 5 to 50 and identify near doubles, using doubles already known
		• Recognise all coins, use £.p notation, find totals and give change
		• Recognise 2-digit multiples of 2, 5 or 10
		• Recognise links between addition and subtraction
		• Rehearse recognition of number facts.
		• Solve 'real life' problems relating to time, measure and statistics
		• Review measuring and comparing capacities using non-standard and standard units, and recognise the need for calibration.
		• Read a simple scale to the nearest labelled division.

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Wk	Topics	Objectives
3	Number • mental maths • estimation • addition & subtraction • problem solving • investigations	• Use mental maths to help find an answer • Explain has a problem has been solved • Recall arithmetic facts to support problem solving • Use number facts to estimate an answer • Explain why an answer is right or wrong based on deduction • Make independent decisions regarding problem solving and be able to explain the thought process • Be able to understand how to solve 2-step word problems
4	Number • inverse operations • multiplication & division • estimation	• Recognise that addition is the inverse of subtraction • Recorder numbers in a sum to find the value of X • Recognise the relationship between multiplication and division facts • Be able to use multiplication facts to solve division problems • Know that not all numbers can divide equally, and that sometimes there is a remainder • Make estimations about remainders based on knowledge of multiplication facts (knowing that 16 will have a remainder of 1 when divided by 5) • Be able to use mathematical vocabulary to explain thinking • Be able to use 'long division' to solve TU ÷ U and HTU ÷ U
5	Number • repeated addition • multiplication • 'real life' number problems • problem solving • investigations	• Associate repeated addition with multiplication, and be able to rewrite repeated addition sums as simplified multiplication sums • Be able to count in multiples of 2, 3, 5, 10, 20, 50, 100 • To solve 2-step multiplication problems involving money • Use simple number facts to solve more complex problems • Use number facts to support problem solving when carrying out investigations • Be able to use mathematical vocabulary to explain problem solving strategies • Give reasons for problem solving strategies • Check for and correct errors in problem solving

Maths Medium Term Plan: Year 2 Exceptionally Able

Wk	Topics	Objectives
6	Geometry • 2D and 3D shapes • symmetry • measuring angles • position and direction • horizontal, vertical, parallel and perpendicular lines Measurement • angles	• Discuss the similarities and differences between 3D shapes • Check for and correct errors in problem solving • Look for lines of symmetry in 3D shapes • Recognise angles in 2D shapes and be able to name these • Use a protractor to measure angles in 2D and 3D shapes • Use the vocabulary related to direction • Recognise clockwise and anti-clockwise turns • To give and follow a set of complex directions • Recognise horizontal and vertical lines both in isolation and shown with drawings and shapes • Recognise pairs of parallel and perpendicular lines both in isolation and shown with drawings and shapes