Christleton Primary School

Maths

Year 2 – Mathematics Intent

Year 2 Maths Long Term Plan		
Autumn	Number and Place Value (6 weeks)	Addition and Subtraction (6 weeks)
Spring	Measure—Money (3 weeks)	Multiplication and Division (5 weeks) Time (3 weeks)
Summer	Fractions (3 weeks) Statistics (2 weeks) Geometry - Properties of shape (2 weeks)	Measure -Length, height / mass, capacity and temperature (3 weeks) Geometry - Position and direction (2 weeks) Consolidation

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Block 1			
Number and Place Value			
Substantive Knowledge National Curriculum	Ready to Progress Expected TAF Statements	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
Count in in tens from any number, forward and backward		• Can count forwards in 10s from any number • Can count backwards in 10s from any number	*Introduction to resources *Read and write numbers to 100 *Recognise Place Value to 100 *Partition numbers into different combinations of tens and ones *Examine patterns using Place Value – Counting in tens *Compare and order numbers – two numbers, up to 5 numbers and then position on a number line *Counting in steps of 10s *Counting in steps of 2s, 3s, and 5s (reflect on which
Recognise the place value of each digit in a two-digit number (tens, ones)	2NPV–1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning. TAF - Partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus	• Can partition a 2-digit number into tens and ones using structured resources to support them • Can identify the number of tens and ones in a written 2-digit numbers without structured resources	
Identify, represent and estimate numbers using different representations, including the number line	NPV–2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10. TAF - Read scales* in divisions of ones, twos, fives and tens	• Can position 2-digit numbers on a marked number line and reason about where they are positioned	

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Compare and order numbers from 0 up to 100; use <, > and = signs		• Can create 2-digit numbers using concrete equipment and use to compare by reasoning about the size of numbers • Can compare numbers by identifying their relative positions in the linear number system (number line) • Can position the <, > and = signs correctly between two 2-digit numbers	elements to cover now and which to cover in the multiplication and division unit)
Read and write numbers to at least 100 in numerals and in words		• Can read numbers from 1 – 100 in numerals • Can write numbers from 1 – 100 in words	
Use place value and number facts to solve problems.		• Can use coins to make given amounts of money, applying place value • Can solve problems linked to place value	

Block 2			
Addition and Subtraction			
Substantive Knowledge **National Curriculum**	**Ready to Progress** **Expected TAF Statements**	**Key Performance Indicators**	**Sequence of learning Detailed in Planning Overview**
Recall and use addition and subtraction facts to 20	2NF–1 Secure fluency in addition and subtraction facts within 10, through continued practice.	• Can relate number facts to 10 to adding and subtracting multiples of 10 within 100	*Add and subtract within 10

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fluently, and derive and use related facts up to 100	TAF - Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10, then 17 + 3 = 20; if 7 − 3 = 4, then 17 − 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 − 14 = 3 and 17 − 3 = 14)	• Can recall and use addition and subtraction facts to 20 fluently; derive and use related facts to 100 • Can solve missing box and missing symbol calculations	*Relationship between addition and subtraction within and to 10 *Recall and use addition and subtractions facts within and to 20

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
	2AS–1 Add and subtract across 10
	
	2AS–3 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.
	
	2AS–4 Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.
	
	2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?".
	
	TAF - Add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g. 48 + 35; 72 − 17)
		• Can add and subtract numbers mentally, including:
		    o a 2-digit number and 1s
		    o a 2-digit number and 10s
		    o 2 simple, 2-digit numbers, which do not involve bridging a 10
		    o adding 3 single-digit numbers
		• Can add and subtract two 2-digit numbers that bridge a multiple of 10 using jottings or a series of related number sentences to avoid overload of working memory
		• Can use concrete apparatus or pictorial representations to demonstrate how they have calculated an answer.
			*Addition and subtraction facts to 100
			*Consolidate adding two 1-digit numbers
			*Consolidate subtracting a 1-digit number from a teen number crossing/bridging the tens boundary
			*Adding three 1-digit numbers
			*Odd and even numbers
			*Add a 2-digit number and ones
			*Add a 2-digit number and tens
			*Add two 2-digit numbers – no crossing

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Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	TAF - Recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If 7 + 3 = 10, then 17 + 3 = 20; if 7 − 3 = 4, then 17 − 3 = 14; leading to if 14 + 3 = 17, then 3 + 14 = 17, 17 − 14 = 3 and 17 − 3 = 14)	• Can show that addition can be done in any order (commutative) • Can show that subtraction can't be done in any order	*Add two 2-digit numbers – crossing the tens boundary *Subtract a 2-digit number and ones * Subtract a 2-digit number and tens
Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.		• Can recognise and use the inverse relationship between addition and subtraction • Can check calculations using the inverse operation	* Subtract two 2-digit numbers – no crossing * Subtract two 2-digit numbers – crossing the tens boundary *Finding the difference *Solve word problems
Solve problems with addition and subtraction: Using concrete objects and pictorial representations, including those involving numbers,		• Solve one-step addition problems using mental strategies • Solve one-step subtraction problems using mental strategies • Solve one-step addition problems using a written method in line with school calculation policy e.g. counting on a number line, partitioning	

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quantities and measures applying their increasing knowledge of mental and written methods		• Solve one-step subtraction problems using a written method in line with school calculation policy e.g. counting back on a number line, partitioning • Understand when a word problem involves addition or subtraction	

Block 3			
Money			
Substantive Knowledge **National Curriculum**	**Ready to Progress** **Expected TAF Statements**	**Key Performance Indicators**	**Sequence of learning** **Detailed in Planning Overview**
Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value	No specific Ready to Progress statements for Money but use the opportunity to consolidate prior statements as appropriate e.g 2NPV–1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning. 2AS–1 Add and subtract	• Can record using symbols £ and p (separately, depending on the unit being used) • Can add together different coins and find the total Can find coins that make a particular amount *e.g. Which coins could you use to make 20p*?	*Recognise coins and use £ and p notation (separately) * Say how many different combinations of coins can be used to make a given total e.g. 20p *Reinforce Place Value non-standard partitioning TAF statement by making amounts with just 10ps and 1ps *Find the total amount of money in a purse/bag
Find different combinations of coins that equal the same amounts of money		• Can say how many different combinations of coins can you use to make a given total *e.g. 20p*	

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Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	across 10. 2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?". TAF - Use different coins to make the same amount	• Can find totals of different amounts of money • Can decide which coins could be used to pay for the total • Can solve subtraction problems such as *Jess has saved 62p. She spends 15p. How much does she have left?* • Can find change from a given amount *e.g. Jess buys a banana for 23p. She pays for it using a 50p. How much change does she get?*	*Decide which coins could be used to pay for an item *Find the total of 2 items * Finding change *How much left *Range of problems – Decide on the operation needed to solve

Block 4			
Multiplication and Division			
Substantive Knowledge **National Curriculum**	**Ready to Progress** **Expected TAF Statements**	**Key Performance Indicators**	**Sequence of learning Detailed in Planning Overview**
Count in steps of 2, 3, and 5 from 0, and in tens from		• Can count in 2s, 5s and 10s from 0 • Can count forwards and backwards in 10s from any number	*Understand the language of equal groups

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any number, forward and backward		• Can count forwards and backwards in 5s from any number • Can count forwards and backwards in 2s from any number • Can count in 3s from 0	*Link equal groups to addition *Link equal groups to the multiplication symbol *2 x table
Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers	TAF - Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary	• Can use concrete objects to show understanding of multiplication • Can recall the 10x table in a random order • Can recall the 2x table in a random order • Can recall the 5x table in a random order • Can recognise odd and even numbers	*5 x table *10 x table *Recall 2x, 5x, 10x *Reason about the patterns between the times tables *Write repeated addition number
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	2MD–1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables. MD–2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division).	• Can write addition sentences as multiplication sentences and vice versa • Can when shown an array, write the 4 addition and multiplication sentences that the image represents and 2 division facts	sentences as multiplication number sentences and vice versa. *Use an array to show that multiplication can be done in any order * Derive Division facts using division
Show that multiplication of two numbers can be done	TAF - Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple	• Can use an array to explain the commutative law *e.g. Why 2 x 5 is the same as 5 x 2?*	

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in any order (commutative) and division of one number by another cannot	problems, demonstrating an understanding of commutativity as necessary	• Can use an array to record the 2 division sentences that can be made from the image • Can explain why a division calculation cannot be done in any *order e.g. Why is 2 ÷ 10 not 5?*	by grouping and record using the ÷ sign *Sharing *Grouping
Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	MD–2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division). TAF - Recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary	• Can use materials, arrays, repeated addition, mental methods, and multiplication and division facts to solve multiplication word problems in context • Can use materials, arrays, mental methods, and multiplication and division facts to solve sharing word problems in context • Can use materials, arrays, mental methods, and multiplication and division facts to solve grouping word problems in context • Can use materials, arrays, repeated addition, mental methods, and multiplication and division facts to solve multi-step problems involving multiplication and division in context	*Use an array to find 4 related facts *Inverse operations *Solve a range of word problems *Substantial problem solving

Block 5
Measure – Time

Substantive Knowledge	Ready to Progress	Key Performance Indicators	Sequence of learning Detailed in Planning Overview

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National Curriculum	Expected TAF Statements		
Compare and sequence intervals of time		• Can describe intervals of time in days • Can state the difference between time in days. • Can measure accurately in hours, seconds and minutes • Can add and subtract intervals to times on clocks	*Introduction – comparing simple analogue clocks *Clockwise revision *Telling times O'clock, half past, quarter past and quarter to with hour hand only *Telling times O'clock, half past, quarter past and quarter to with minute hand only – link to fractions as still measuring in hours/fractions of hours *Telling times O'clock, half past, quarter past and quarter to with both hands *Minute hand only – measuring in minutes – link to counting in 5s and 5 x table *Both hands telling time to the nearest 5 minutes *Intervals of time *Time duration problems
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	TAF - Read the time on a clock to the nearest 15 minutes	• Can tell the time to quarter past the hour • Can tell the time to quarter to the hour • Can tell the time to the nearest 5 minutes	
Know the number of minutes in an hour and the number of hours in a day		• Know that there are 60 minutes in an hour • Know that there are 24 hours in a day	

Block 6
Fractions

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Substantive Knowledge National Curriculum	Ready to Progress Expected TAF Statements	Key Performance Indicators	Sequence of learning Detailed in Planning Overview
Recognise, find, name and write fractions $\frac{1}{3},\frac{1}{4},\frac{2}{4},\frac{3}{4}$ of a length, shape, set of objects or quantity	TAF - Identify $\frac{1}{4},\frac{1}{3},\frac{1}{2},\frac{2}{4},\frac{3}{4}$ of a number or shape, and know that all parts must be equal parts of the whole	• Can find unit fractions $\frac{1}{3},\frac{1}{4},\frac{1}{2}$ of lengths, shapes or quantities by splitting into equal parts. • Can find non-unit fractions $\frac{2}{3},\frac{2}{4},\frac{3}{4}$ of lengths, shapes or quantities by selecting more than one part after splitting equally • Can find unit fractions $\frac{1}{3},\frac{1}{4},\frac{1}{2}$ of a set of objects by splitting into equal groups and make links to division • Can find non-unit fractions $\frac{2}{3},\frac{2}{4},\frac{3}{4}$ of a set of objects by splitting equally then totalling the number of groups identified by looking at the numerator	*Introduction using real life contexts *Understanding denominators * Name fractions one half, one third and one quarter and use the correct notation *Recognise that one 'whole' could be one whole group of items * Write number sentences which represent the fractions of amounts being calculated * Recognise $\frac{2}{3},\frac{2}{4},\frac{3}{4}$ of an object, shape or length; *Recognise $\frac{2}{3},\frac{2}{4},\frac{3}{4}$ of a quantity *Comparing fractions - recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
Write simple fractions for example, ½ of 6 = 3		• Can record fractions in writing and understand what each part represents • Can use a fraction as an operator on a number and record as a number sentence • Can calculate by dividing the number by the denominator and multiplying by the numerator	*Count on and back in steps of ½, ¼, and $\frac{1}{3}$ *Consolidation and substantial problem solving
Recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$		• Count in fractions up to 10 and place on a number line	

		• Use a number line to show that ½ is equivalent to $\frac{2}{4}$ • Reason about the equivalence of $\frac{1}{2}$ and $\frac{2}{4}$ using objects or images	

Block 7			
Statistics			
Substantive Knowledge **National Curriculum**	**Ready to Progress** **Expected TAF Statements**	**Key Performance Indicators**	**Sequence of learning Detailed in Planning Overview**
Interpret and construct simple pictograms, tally charts, block diagrams and simple tables	NPV–2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10. TAF - Read scales* in divisions of ones, twos, fives and tens	• Can generate data in everyday situations *e.g. How many children eat dinner or packed lunch?* • Can present data in different ways using a scale of 1, 2, 5 or 10 • Can answer retrieval questions from the charts and graphs that they are working with	*Introduction – key vocab *Tally charts *Simple Tables *Simple Pictograms *Block Diagrams *Consolidation – ask and answer questions about different representations
Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity		• Can answer questions about the data that they have collected using scales of 1, 2, 5 and 10 *e.g. which is the most popular chocolate bar when a full chocolate bar represents 2 people on a pictogram?*	
Ask and answer questions about totalling and comparing categorical data.	2AS–1 Add and subtract across 10 2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more…?".	• Can find the total of two categories on a pictogram, tally, block diagram and simple table • Can find the difference between two categories on a pictogram, tally, block diagram and simple table to answer How many more…? How many fewer…? questions	

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<table>
<tr><td colspan="4" align="center">Block 8</td></tr>
<tr><td colspan="4" align="center">Geometry – Properties of Shape</td></tr>
<tr>
<td align="center">Substantive Knowledge

National Curriculum</td>
<td align="center">Ready to Progress

Expected TAF Statements</td>
<td align="center">Key Performance Indicators</td>
<td align="center">Sequence of learning
Detailed in Planning
Overview</td>
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<tr>
<td>Identify and describe the properties of 2-D shapes, including the number of sides and lines symmetry in a vertical line</td>
<td>2G–1 Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties

TAF - Name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.</td>
<td>Can identify the number of sides on a range of 2D shapes
Can identify the number of vertices on a range of 2D shapes
Can define a polygon as a shape with straight sides and identify whether a 2D shape is a polygon or not
Can identify shapes by counting the number of sides or vertices including knowing quadrilateral as the generic term for a 4-sided shape
Recognises irregular shapes and can reason about this e.g. knows that every 5 sided polygon is a pentagon.
Can distinguish a square and a rectangle as special quadrilaterals and explain which properties define them
Can identify lines of symmetry on 2-D shapes</td>
<td rowspan="2">*Introduction and recap on shapes from Year 1 – includes sorting
*Name and describe properties of 2D shapes – includes sorting
* Lines of Symmetry
*Name and describe properties of 3D shapes – includes sorting and identifying 2D shapes as faces on 3D shapes</td>
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<tr>
<td>Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces</td>
<td></td>
<td>Can recognise and name 3-D shapes, including cuboids, prisms and cones
Can describe the properties of 3-D shapes, including number of faces, edges and vertices</td>
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<tr>
<td>Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a</td>
<td></td>
<td>Can identify 2-D shapes on the surface of a 3-D shape, including:
A triangle on a pyramid
A square on a cube</td>
<td>*Consolidation with further sorting and problem solving</td>
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cylinder and a triangle on a pyramid]		• A rectangle on a cuboid • A circle on a cylinder and cone • A triangle and rectangle on a triangular prism
Compare and sort common 2-D and 3-D shapes and everyday objects.		• Can sort and classify 2-D and 3-D shapes and everyday objects using a Venn diagram, according to their properties • Can sort and classify 2-D and 3-D shapes and everyday objects using a Carroll diagram

Block 9			
Measures – Length, Height, Mass, Capacity & temperature			
Substantive Knowledge **National Curriculum**	**Ready to Progress** **Expected TAF Statements**	**Key Performance Indicators**	**Sequence of learning** **Detailed in Planning Overview**
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	NPV–2 Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.	• Can make sensible estimations in relation to all areas of measure • Can measure accurately in centimetres and metres using rulers and metre sticks • Can record measures using correct abbreviations cm and m • Can measure accurately in grams and kilograms using measuring scales • Can record measures using correct abbreviations g and kg • Can measure accurately in millilitres and litres using measuring vessels • Can record measures using correct abbreviations ml and l	*Introduction – choosing sensible units to measure in, appropriate measuring equipment *Number lines recap *Understanding Length and height *Accurately measuring in cm and m, comparing and ordering lengths/heights *Understanding Capacity/volume

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	TAF - Read scales* in divisions of ones, twos, fives and tens	• Can measure accurately in degrees Celsius • Can record measures using correct abbreviations °C • Can measure accurately in hours, seconds and minutes • Can decide the correct unit of measure to use in a given situation *e.g. What unit of measure would we use to measure the mass of an apple?* • Can decide on the appropriate measuring tool to use in a given situation *e.g. what would you use to see how much water is in this cup?*	*Comparing and ordering capacity *Understanding mass *Comparing and ordering by mass *Understanding temperature *Accurate reading of degrees, comparing and ordering temperatures *Measures word problems linked to addition and subtraction *Measures word problems linked to multiplication and division
Compare and order, mass, volume/capacity and record the results using >, < and =		• Can compare and order different units of measure • Can use ‹ › and = to record comparisons	

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Block 10			
Geometry – Position and Direction			
Substantive Knowledge **National Curriculum**	**Ready to Progress** **Expected TAF Statements**	**Key Performance Indicators**	**Sequence of learning** **Detailed in Planning** **Overview**
Order and arrange combinations of mathematical objects in patterns and sequences		• Can continue and create patterns of shapes, including those in different orientations. • Can identify the unit of repeat	*Describe Position *Describe Direction and Movement without turns *Describe Turns *Describe combination of movements and turns *Continue and create patterns and sequences with shapes in different orientations
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).		• Confidently uses and understands terms, forwards, backwards, left and right, up and down to describe routes on a grid • Can recognise when an image has been rotated a whole, half, quarter or three-quarter turn • Can rotate themselves or an object clockwise or ant-clockwise • Can program robots using instructions given in right angles	