Maths at Timothy Hackworth Primary School

Yearly Overview

'Respectful and resilient; being the best that we can be.'

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Nursery	To use some number names and number language within play To move and count up to 3 objects Primary colours Colour sorting Size sorting with compare bears Inset puzzles	Reciting numbers past 3 Finger counting up to 5. Counting objects that can't be moved Teach basic shape names Autumnal colours Positional language, on, under, in front and behind Comparing lengths	Fast recognition of up to 3 objects Recite numbers past 5 One more than, up to 5 Noticing images/patterns that are the same Shape hunts Colours of the rainbow	Reciting numbers from 1 to 10 (and beyond) One fewer than, counting back from 5 Begin to recognise some numbers of personal significance Jigsaw puzzles- visual spatial reasoning	Compare the number of items in a set and begin to understand the language: 'more than', 'fewer than' Teach number recognition 1-3, matching numbers to sets Comparing capacities that are full, empty, nearly full, nearly empty	Link numerals with amounts initially up to 0- 5. Begin to make marks, some numerals and symbols to which they ascribe mathematical meaning. Conservation of number up to 5 Recap shape names, triangle, circle, rectangle and square
	Reception	Baseline tasks On entry assessment Number 1,2,3 circles, semi circles, triangles Introduce 5 frame	Number 3,4,5,6 Triangles, squares, rectangles, rhombus, pentagons, hexagons Features of 2d /3d shapes Introduce 10 frame & part/whole model	Number 7,8, 9, 10 Introduce number fans Repeating patterns Revise 2d shapes	Number 10 Length, weight, capacity Doubling/halving Addition & subtraction within 10 Rekanreks	Teen numbers – tens and ones Comparing & ordering numbers Doubles of numbers Counting in 5s and 10s odds/evens Addition/subtraction Number lines/tracks	3d shapes 2d shape composition & decomposition Number bonds to 5/10 Problem solving inc sharing Measuring time
Key Stage 1	Year 1	Number and Place Value (within 10) Addition and Subtraction (within 10)	Properties of Shape Number and Place Value (within 20)	Addition and Subtraction (within 20) Number and Place Value (within 50)	Multiplication and Division Number and Place Value (within 100)	Fractions Position and Direction	Measurement
	Year 2	Number and Place Value Addition and Subtraction	Multiplication and Division	Fractions Properties of Shape	Position and Direction Statistics	Measurement (Money, Length/Height, Time, Mass, Capacity and Temperature)	Consolidation of areas not covered
Key Stage 2	Year 3	Number and Place Value Addition and Subtraction	Multiplication and Division	Multiplication and Division Fractions	Fractions Properties of Shape	Length and Perimeter Money Time	Time Mass and Capacity Statistics
	Year 4	Number and Place Value Addition and Subtraction	Multiplication and Division	Fractions Decimals	Decimals Statistics	Properties of Shape Position and Direction	Measurement (Area; Length and Perimeter; Money; Time)
	Year 5	Number and Place Value Addition and Subtraction Multiplication and Division	Multiplication and Division	Fractions	Decimals and Percentages Decimals	Properties of Shape Position and Direction	Perimeter and Area Converting Units Volume Statistics
	Year 6	Number and Place Value Addition, Subtraction, Multiplication and Division	Fractions	Fractions Decimals Percentages	Converting Units Area, Perimeter and Volume Statistics Geometry	Algebra Ratio and Proportion	Revision Project-based Maths

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	Two Year Old Provision	Nursery	Reception
Number	• Combine objects such as stacking blocks and cups. • Put objects inside others and take them out again. • Take part in finger rhymes with numbers. • React to change of amount in a group of up to three items. • Compare amounts, saying 'lots', 'more' or 'same'. • Develop counting-like behaviour, such as making sounds, pointing or saying some numbers in sequence. • Count in everyday contexts, sometimes skipping numbers.	• Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Recite numbers past 5. • Say one number for each item in order: 1,2,3,4,5. • Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). • Show 'finger numbers' up to 5. • Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. • Experiment with their own symbols and marks as well as numerals. • Solve real world mathematical problems with numbers up to 5. • Compare quantities using language: 'more than', 'fewer than'.	• Count objects, actions and sounds. • Subitise. • Link the number symbol (numeral) with its cardinal number value. • Count beyond ten. • Compare numbers. • Understand the 'one more than/one less than' relationship between consecutive numbers. • Explore the composition of numbers to 10. • Automatically recall number bonds for numbers 0–5 and some to 10. **<u>Children at the expected level of development will:</u>** • have a deeper understanding of number to 10, including the composition of each number • subitise (recognise quantities without counting) up to 5 • automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts. • verbally count beyond 20, recognising the pattern of the counting system • compare quantities up to 10 in different contexts, recognising when one quantity is greater then, less than or the same as the other quantity • explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally. •
Shape, Space and Measure	• Climb and squeeze themselves into different types of spaces. • Build with a range of resources. • Complete inset puzzles. • Compare sizes, weights etc., using gesture and language – 'bigger/little/smaller', 'high/low', 'tall', 'heavy'.	• Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: • 'sides', 'corners'; 'straight', 'flat', 'round'. • Understand position through words alone – for example, "The bag is under the table," – with no pointing. • Describe a familiar route. • Discuss routes and locations, using words like 'in front of' and 'behind'. • Make comparisons between objects relating to size, length, weight and capacity. • Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc. • Combine shapes to make new ones – an arch, a bigger triangle, etc. • Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. • Extend and create ABAB patterns – stick, leaf, stick, leaf. • Notice and correct an error in a repeating pattern. • Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...'	• Select, rotate and manipulate shapes to develop spatial reasoning skills. • Compose and decompose shapes so that children recognise a shape can have other shapes *within* it, just as numbers can. • Continue, copy and create repeating patterns. • Compare length, weight and capacity.

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Yearly Overview

Year 1	Autumn		Spring		Summer	
Block (estimated coverage Time) National Curriculum Objectives	**Number and Place Value – numbers to 10** **(4 weeks)**	• count to and across 10, forwards and backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to 10 in numerals • given a number, identify 1 more and 1 less • identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • read numbers from 1 to 10 in numerals.	**Addition and Subtraction – Numbers to 20** **(3 weeks)**	• read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs • represent and use number bonds and related subtraction facts within 20 • add and subtract one-digit and two-digit numbers to 20, including 0 mentally • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? − 9	**Fractions** **(2 weeks)**	• recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity • recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity
					Geometry – Position and Direction **(1 week)**	• describe position, direction and movement, including whole, half, quarter and three-quarter turns
	Addition and Subtraction – numbers within 10 **(5 weeks)**	• read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs • represent and use number bonds and related subtraction facts within 10 • add and subtract one-digit and two-digit numbers to 10, including 0 • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ? − 9	**Number and Place Value – Numbers within 50** **(3 weeks)**	• count to and across 50, forwards and backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to 50 in numerals • given a number, identify 1 more and 1 less • identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least	**Measurement (Money, Length/Height, Weight/Volume** **(5 weeks)**	• compare, describe and solve practical problems for: - lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] - mass/weight [for example, heavy/light, heavier than, lighter than] - capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] • measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - recognise and know the value of different denominations of coins and notes
	Geometry **(1 week)**	• recognise and name common 2-D and 3-D shapes, including: - 2-D shapes [for example, rectangles (including squares), circles and triangles] - 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	**Multiplication and Division** **(3 weeks)**	• count in multiples of 2s, 5s and 10s • solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	**Measurement (Time)** **(3 weeks)**	• compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] • measure and begin to record by sequencing events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] • measure and begin to record time in hours, minutes and seconds. • recognise and use language relating to dates, including days of the week, weeks, months and years • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times
	Number and Place Value – Numbers to 20 **(2 weeks)**	• count to and across 20, forwards and backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to 20 in numerals • given a number, identify 1 more and 1 less • identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • read numbers from 1 to 20 in numerals	**Number and Place Value – Numbers within 100** **(3 weeks)**	• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • count, read and write numbers to 100 in numerals • given a number, identify 1 more and 1 less • identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • read and write numbers from 1 to 20 in words		
Domain New Vocabulary	**Number and Place Value** **Addition and Subtraction** **Properties of Shape**	Number, zero, one two, three to twenty, etc. none, count on/up/to/from/down, more, less, many, few, fewer, least, greater, lesser, equal to, the same as, odd, even, pair, ones, tens, ten more, ten less, digit, numeral, figures, compare, order, size, value, above, below, before, after, fewest, in order/different order, between, halfway between. Number bonds, number line, add, plus, make, sum, total, altogether, inverse, double, half, halve, equals, =, difference between, how many more? Subtract, takeaway, minus, more, near double, same as, how many fewer…? Group, sort, cube, cuboid, pyramid, sphere, cone, cylinder, circle, triangle, square, shape, flat, curved, straight, round, hollow, solid, corner (pointed, point), face, side, edge, make, build, draw.	**Multiplication and Division**	Odd, even, count in twos, threes, fives, count in tens, forwards, backwards, how many times? Lots of, groups of, once, twice, three times, five times, multiple of, multiply, multiply by, repeated addition, array, row, column, double, halve, share, share equally, groups in pairs, threes etc., equal groups of, divide, divided by, left, left over, times.	**Fractions** **Position and Direction** **Measurement**	Whole, equal parts, four equal parts, one half, two halves, a quarter, two quarters. Position, over, under, above, below, top, bottom, side, inside, outside, front, back, beside, next to, opposite, apart, between, middle, edge, centre, corner, direction, journey, across, movement, slide, roll, turn, whole turn, half turn, underneath, before, after, left, right, forward, backwards, sideways, close, far, near. Full, half full, empty, holds, container, weighs, weighs between, balances, heavy, heavier, heaviest, light, lighter, lightest, scales, time, days of the week, seasons of the year, weekend, birthday, holiday, morning, afternoon, evening, night, midnight, bedtime, dinnertime, playtime, today, yesterday, tomorrow, before, after, next, last, now, soon, early, late, quick, quicker, quickest, quickly, fast, faster, fastest, slow, slower, slowest, slowly, old, older, oldest, new, newer, newest, takes longer, takes less time, hour, o'clock, half past, clock, watch, hands, always, never, often, sometimes, usually, once, twice, first, second, third, estimate, close to, length, width, height, depth, low, wide, narrow, deep, shallow, thick, thin, far, near, close, metre, ruler, metre stick, money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, change, costs more/less, total.
Reasoning and Problem Solving Techniques Key Vocabulary	**By the end of Y1, children will have tackled a range of reasoning and problem solving challenges that allow them to:** • **predict what is coming next** • **find and continue the pattern** • **say what the same is and what the difference is** • **find the odd one out** **These challenges should be linked to the termly objectives above – examples can be found in NCETM Reasoning Frameworks.** **It is important to review objectives from the previous year groups, so that knowledge is maintained and can be built upon.**				Listen, join in, say, think, imagine, remember, start from, start with, start at, look at, point to, put, place, fit, arrange, rearrange, change, change over, split, separate, carry on, continue, repeat, what comes next? Find, choose, collect, use, make, build, tell me, describe, pick out, talk about, explain, show me, read, write, record, trace, copy, complete, finish, end, fill in, shade, colour, tick, cross, draw, draw a line between, join (up), ring, arrow, cost, count, work out, answer, check same number(s), different number(s), missing number(s), number facts, number line, number track, number square, number cards, abacus, counters, cubes, blocks, rods, die, dice, dominoes, pegs, peg board, same way, different way, best way, another way, in order, in a different order, not all, every, each	

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Yearly Overview

Year 2	Autumn		Spring		Summer	
Block (estimated coverage Time) National Curriculum Objectives	**Number and Place Value** **(3 weeks)**	• count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward • recognise the place value of each digit in a two-digit number (10s, 1s) • identify, represent and estimate numbers using different representations, including the number line • compare and order numbers from 0 up to 100; use <, > and = signs • read and write numbers to at least 100 in numerals and in words • use place value and number facts to solve problems	**Fractions** **(3 weeks)**	• recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity • write simple fractions, for example ½ of 6 = 3 and recognise the equivalence of 2/4 and ½ • Count in fractions up to 10 starting with any given number.	**Measurement** **(6 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 and sequence intervals of time • 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 • recognise and use language according to dates.
	Addition and Subtraction **(4 weeks)**	• solve problems with addition and subtraction: - using concrete objects and pictorial representations, including those involving numbers, quantities and measures - applying their increasing knowledge of mental and written methods • 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 1s - a two-digit number and 10s - 2 two-digit numbers - adding 3 one-digit numbers • show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot • recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	**Geometry** **(5 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 • order and arrange combinations of mathematical objects in patterns and sequences • 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)	**Consolidation – please revisit any blocks which are whole class issues and/or any that have not been covered.**	
	Multiplication and Division **(5 weeks)**	• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs • show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot • solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	**Statistics** **(2 weeks)**	• interpret and construct simple pictograms, tally charts, block diagrams and 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		
			Measurement – Money **(2 weeks)**	• recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value • 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		
Domain New Vocabulary	**Number and Place Value** **Addition and Subtraction** **Multiplication and Division**	Numbers to one hundred, partition, recombine, hundred more or less. Order, commutative, inverse Multiplication tables, multiplication symbol, division symbol.	**Fractions** **Geometry** **Statistics**	Three quarters, one third, a third, equivalence, equivalent Rotation, clockwise/anti-clockwise, straight line, 90 degree turn, right angle, size, bigger, larger, smaller, symmetry, line of symmetry, fold, match, mirror line, reflection, pattern, repeating pattern, symmetrical Count, tally, sort, vote, graph, block graph, pictogram, represent, group, set, list, table, title, most popular, most common, least popular, least common	**Measurement**	Quarter past, quarter to, m/km, g/kg, ml/l, temperature, degrees.
Reasoning and Problem Solving Techniques Key Vocabulary	**By the end of Y2, children will have tackled a range of reasoning and problem solving challenges that allow them to:** • **visualise.** • **identify whether something is true or false.** • **describe what I have done in my own words.** **These challenges should be linked to the termly objectives above – examples can be found in NCETM Reasoning Frameworks.** **It is important to review objectives from the previous year groups, so that knowledge is maintained and can be built upon**.		Predict Describe the pattern, describe the rule Find, find all, find different Investigate			

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Yearly Overview

Year 3	Autumn		Spring		Summer	
Block (estimated coverage Time) National Curriculum Objectives	**Number and Place Value** **(3 weeks)**	• count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number • recognise the place value of each digit in a 3-digit number (100s, 10s, 1s) • compare and order numbers up to 1,000 • identify, represent and estimate numbers using different representations • read and write numbers up to 1,000 in numerals and in words • solve number problems and practical problems involving these ideas	**Multiplication and Division *(written methods)*** **(3 weeks)**	• 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	**Measurement** **(9 weeks)** *Time will not be covered again after Y4, please place an emphasis daily on reading time to the nearest minute.*	• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • measure the perimeter of simple 2-D shapes • add and subtract amounts of money to give change, using both £ and p in practical contexts • 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, am/pm, 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]
	Addition and Subtraction **(5 weeks)**	• add and subtract numbers mentally, including: - a three-digit number and 1s - a three-digit number and 10s - a three-digit number and 100s • add and subtract numbers with up to 3 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	**Fractions** **(5 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, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators • recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • recognise and show, using diagrams, equivalent fractions with small denominators • add and subtract fractions with the same denominator within one whole • compare and order unit fractions, and fractions with the same denominators • solve problems that involve all of the above	**Statistics** **(3 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
	Multiplication and Division *(tables facts)* **(4 weeks)**	• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • 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 objects	**Geometry** **(4 weeks)**	• draw 2-D shapes and make 3-D shapes using modelling materials • recognise 3-D shapes in different orientations and describe them • recognise angles as a property of shape or a description of a turn • identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 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		
Domain New Vocabulary	**Number and Place Value** **Addition and Subtraction** **Multiplication and Division**	Hundreds, three-digit. Column addition and subtraction Product, multiplies of four, multiples of eight, multiples of 50, multiples of 100, scale up.	**Fractions** **Geometry**	Numerator, denominator, unit fraction, non-unit fraction, compare, order, tenths. Horizontal, vertical, perpendicular line, parallel line, greater than/less than 90 degrees	**Measurement** **Statistics**	Leap year, 12/24-hour clock, Roman numerals to XII, same orientation, different orientation. Chart, bar chart, frequency table, Carroll diagram, Venn diagram, axis, axes, diagram.
Reasoning and Problem Solving Techniques Key Vocabulary	By the end of Y3, children will have tackled a range of reasoning and problem solving challenges that allow them to: • solve problems that have missing numbers, missing symbols and missing information. • work backwards / use the inverse. • create fact families from what I know already. • explain my thinking to someone else. These challenges should be linked to the termly objectives above – examples can be found in NCETM Reasoning Frameworks. It is important to review objectives from the previous year groups, so that knowledge is maintained and can be built upon.					

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Yearly Overview

Year 4	Autumn		Spring		Summer	
Block (estimated coverage Time) National Curriculum Objectives	**Number and Place Value** **(4 weeks)**	• count in multiples of 6, 7, 9, 25 and 1,000 • find 1,000 more or less than a given number • count backwards through 0 to include negative numbers • recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s) • read and write numbers to 10,000. • order and compare numbers beyond 1,000 • identify, represent and estimate numbers using different representations to 10,000. • round any number to the nearest 10, 100 or 1,000 • solve number and practical problems that involve all of the above and with increasingly large positive numbers • read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value	**Fractions** **(4 weeks)**	• recognise and show, using diagrams, families of common equivalent fractions • count up and down in hundredths; • 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 • add and subtract fractions with the same denominator	**Geometry** **(6 weeks)**	• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify acute and obtuse angles and compare and order angles up to 2 right angles by size • identify lines of symmetry in 2-D shapes presented in different orientations • complete a simple symmetric figure with respect to a specific line of symmetry • describe positions on a 2-D grid as coordinates in the first quadrant • describe movements between positions as translations of a given unit to the left/right and up/down • plot specified points and draw sides to complete a given polygon • make and classify 3-D shapes.
	Addition and Subtraction **(2 weeks)**	• add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate • estimate and use inverse operations to check answers to a calculation • solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	**Decimals** **(6 weeks)**	• recognise and write decimal equivalents of any number of tenths or hundreds • recognise and write decimal equivalents to ½, ¼, ¾, • recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10 • 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 ones, tenths and hundredths • round decimals with 1 decimal place to the nearest whole number • compare numbers with the same number of decimal places up to 2 decimal places • solve simple measure and money problems involving fractions and decimals to 2 decimal places	**Measurement** **(6 weeks)** *Time will not be covered again after Y4, please place an emphasis daily on reading time to the nearest minute.*	• convert between different units of measure [for example, kilometre to metre; hour to minute] • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • know that perimeter can be expressed algebraically as 2(l + b) • find the area of rectilinear shapes by counting squares • estimate, compare and calculate different measures, including money in pounds and pence • read, write and convert time between analogue and digital 12- and 24-hour clocks • solve problems involving converting from hours to minutes, minutes to seconds, years to months, weeks to days
	Multiplication and Division **(6 weeks)**	• recall multiplication and division facts for multiplication tables up to 12 × 12 • use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers • recognise and use factor pairs and commutativity in mental calculations • multiply two-digit and three-digit numbers by a one-digit number using formal written layout • solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	**Statistics** **(2 weeks)**	• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs • solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs		
Domain New Vocabulary	**Number and Place Value** **Multiplication and Division**	Thousands, four-digit, round to, nearest, thousand more than/less than, negative integers, count through zero, Roman numerals (I to C). Multiplication facts (up to 12 x 12), division facts, inverse, derive.	**Fractions** **Decimals** **Statistics**	Equivalent fraction Tenths, hundredths, decimal places. Continuous data, line graph	**Geometry** **Measurement**	Quadrilaterals, triangles, right angle, acute angle, obtuse angle, coordinates, translation, quadrant, x-axis, y-axis, perimeter and area. Convert, area.
	By the end of Y4, children will have tackled a range of reasoning and problem solving challenges that allow them to: • make a reasonable estimate and use this to check my answer. • spot a mistake • say which is correct. • represent my thinking in a variety of ways (e.g. using concrete materials, pictures and symbols) These challenges should be linked to the termly objectives above – examples can be found in NCETM Reasoning Frameworks. It is important to review objectives from the previous year groups, so that knowledge is maintained and can be built upon.					

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Yearly Overview

Year 5	Autumn		Spring		Summer	
Block (estimated coverage Time) National Curriculum Objectives	**Number and Place Value** **(3 weeks)**	• read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 • round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0 • solve number problems and practical problems that involve all of the above • read Roman numerals to 1,000 (M) and recognise years written in Roman numerals	**Fractions** **(7 weeks)**	• compare and order fractions whose denominators are all multiples of the same number • identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number • add and subtract fractions with the same denominator, and denominators that are multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	**Geometry** **(5 weeks)**	• identify 3-D shapes, including cubes and other cuboids, from 2-D representations • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees (°) • identify: angles at a point and 1 whole turn (total 360°); angles at a point on a straight line and half a turn (total 180°); other multiples of 90° • use the properties of rectangles to deduce related facts and find missing lengths and angles • distinguish between regular and irregular polygons based on reasoning about equal sides and angles • 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
	Addition and Subtraction **(3 weeks)**	• add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	**Decimals and Percentages** **(5 weeks)**	• read and write decimal numbers as fractions • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • round decimals with 2 decimal places to the nearest whole number and to 1 decimal place • read, write, order and compare numbers with up to 3 decimal places • multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 • solve problems involving number up to 3 decimal places • recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction • solve problems which require knowing percentage and decimal equivalents of ½, ¼, ¾, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25	**Measurement** **(5 weeks)**	• convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre] • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), including using standard units, square centimetres (cm²) and square metres (m²), and estimate the area of irregular shapes • estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water] • solve problems involving converting between units of time • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling
	Multiplication and Division **(6 weeks)**	• identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers • multiply and divide numbers mentally, drawing upon known facts • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³) • solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates			**Statistics** **(2 weeks)**	• solve comparison, sum and difference problems using information presented in a line graph • complete, read and interpret information in tables, including timetables
Domain New Vocabulary	**Number and Place Value** **Addition and Subtraction** **Multiplication and Division**	Million, hundred thousand, powers of 10, M (1000). Efficient written method, multi-step problem. Factor pairs, composite numbers, prime number, squared number, cubed number, formal written method.	**Fractions, Decimals and Percentages**	Proper fraction, improper fraction, mixed number, percent, percentage.	**Geometry** **Measurement** **Statistics**	Reflex angle, dimensions, regular polygon, irregular polygon. Volume, imperial units, metric units. Line graph, timetables.
	By the end of Y5, children will have tackled a range of reasoning and problem solving challenges that allow them to: • test a statement. • make up an example to prove or disprove a statement. • communicate results clearly and systematically • identify how calculations, facts and ideas are connected. • find all possible answers. These challenges should be linked to the termly objectives above – examples can be found in NCETM Reasoning Frameworks. It is important to review objectives from the previous year groups, so that knowledge is maintained and can be built upon.					

Maths at Timothy Hackworth Primary School

Yearly Overview

Year 6	Autumn		Spring		Summer	
Block (estimated coverage Time) National Curriculum Objectives	**Number and Place Value** **(2 weeks)**	• 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 • use negative numbers in context, and calculate intervals across 0 • solve number and practical problems that involve all of the above	**Fractions, Decimals and Percentages** **(4 weeks)**	• associate a fraction with division and calculate decimal fraction equivalents for a simple fraction • identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places • multiply one-digit numbers with up to 2 decimal places by whole numbers • use written division methods in cases where the answer has up to 2 decimal places • Solve problems which require knowing key percentage and decimal equivalents • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	**Algebra** **(3 weeks)** *Daily revision to include:* *• Number and Place Value* *• Four Operations* *• Fractions* *• Geometry*	• use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • find pairs of numbers that satisfy an equation with 2 unknowns • enumerate possibilities of combinations of 2 variables
					Ratio and Proportion **(3 weeks)** *Daily revision to include:* *• Number and Place Value* *• Four Operations* *• Fractions* *• Geometry*	• solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts • 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 • solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
	Four Operations **(5 weeks)**	• perform mental calculations, including with mixed operations and large numbers • add and subtract numbers with more than 4-digits. • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy • 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 • 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 • use their knowledge of the order of operations to carry out calculations involving the 4 operations • solve problems involving addition, subtraction, multiplication and division	**Measurement** **(3 weeks)**	• solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate • 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 3 decimal places • convert between miles and kilometres • recognise that shapes with the same areas can have different perimeters and vice versa • recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]	**Revision**	Based upon whole class targets and individual assessments, teachers will work to close the gaps with a key focus on revisiting objectives covering: • Number and Place Value • Four Operations • Fractions • Geometry Problem Solving Opportunities Topic/project-based maths Maths Outdoors Real-life maths
			Statistics **(2 weeks)**	• interpret and construct pie charts and line graphs and use these to solve problems • calculate and interpret the mean as an average		
	Fractions **(6 weeks)**	• identify common factors, common multiples and prime numbers • use common factors to simplify fractions; use common multiples to express fractions in the same denomination • compare and order fractions, including fractions >1 • add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions • multiply simple pairs of proper fractions, writing the answer in its simplest form • divide proper fractions by whole numbers	**Geometry** **(4 weeks)** *Daily revision to include:* *• Number and Place Value* *• Four Operations* *• Fractions* *• Geometry*	• draw 2-D shapes using given dimensions 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 find unknown angles in any triangles, quadrilaterals, and regular polygons • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles • describe positions on the full coordinate grid (all 4 quadrants) • draw and translate simple shapes on the coordinate plane, and reflect them in the axes.		

Maths at Timothy Hackworth Primary School

Yearly Overview

Domain New Vocabulary	**Number and Place Value** **Four Operations** **Fractions**	numbers to ten million, factorise, prime factor, digit total, degree of accuracy BIDMAS, order of operations, common factor, common multiple, long division. Simplify, degree of accuracy, simplest form.	**Fractions, Decimals and Percentages** **Measurement** **Statistics** **Geometry**	Thousandths, degree of accuracy Miles, convert, formulae Pie chart, construct, mean, average Dodecahedron, vertically opposite, circumference, radius, diameter, four quadrants.	**Algebra** **Ratio and Proportion**	Substitute, variables, symbol, known values, formula, formulae, equation, linear number sequences. Ratio, proportion, :, scale factor, scaling
	By the end of Y6, children will have tackled a range of reasoning and problem solving challenges that allow them to: • apply my knowledge and skills to new situations and contexts. • solve problems of greater complexity (i.e. where the approach is not immediately obvious), demonstrating creativity and imagination. • create a question to investigate. • independently explore and investigate mathematical contexts and statements. • convince someone else that my answer is correct. These challenges should be linked to the termly objectives above – examples can be found in NCETM Reasoning Frameworks. It is important to review objectives from the previous year groups, so that knowledge is maintained and can be built upon.					