

## HVPA Maths Updated Sequence of Learning Progression – Year 3

This overview breaks down each of the Programmes of Study and domains covered by Year 3 and shows the approximate amount of weeks expected in the teaching of each area. Time is built in for consolidation and extension (based on the security of pupils' understanding & readiness to move on, challenge through problem solving and reasoning) and assessment within each term.

Year 3 progression: there has been very little change to the progression of units, although two of the three Multiplication & Division units now fall in Term A. Resources to have ready: in the Autumn term you are mostly going to need base 10 apparatus.

## Changes within the Learning Progressions: Place Value Within 100

• The first three steps review children's learning of numbers to 100 from key stage 1 to ensure they are ready to move onto numbers to 1,000. Greater emphasis is placed on the different ways of partitioning numbers to 1,000 and the place value of each of the digits in the numbers. There is more emphasis on the use of the number line to deepen understanding of the relative position of numbers in the linear number system.

## **Addition & Subtraction**

- Children now learn to use the formal column methods of addition and subtraction for the first time. To support them to do this fluently, several steps are included to ensure they have the mental skills to perform the calculations and to prevent cognitive overload when working on these.
- The formal methods are introduced slowly and carefully looking at calculations without exchanges before bringing in exchange, linking to the mental methods covered earlier.
- Complements to 100 are explicitly explored in a new step.
- The final step encourages children to consider both the choice of operation when solving a problem, and what method would be most efficient so that they do not apply the formal method even when it is inappropriate to do so.

## **Multiplication & Division**

- Before moving on the new times tables for Year 3, more time is spent on revisiting and reinforcing the structure of multiplication and division, using arrays and developing children's understanding of sharing and grouping.
- A new step is included to explicitly make the links between the 2, 4 and 8 times-tables
- The word 'multiple' is emphasised

Autumn Term						
Strand	PM Unit	PM Unit Title	Lesson	NC Objective 1	NC Objective 2	
Number – Number and Place	1	Place Value within 1000	Represent and partition numbers to 100	Recognise the place value of each digit in a two-digit number (tens, ones) (Year 2)	Identify, represent and estimate numbers using different representations, including the number line	
Value		(13 lessons)	Number line to 100	Compare and order numbers up to 1,000		
(approx. 2 ½ to 3 weeks)			100s	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 three-digit number (hundreds, tens, ones)	
			Represent numbers to 1,000	Identify, represent and estimate numbers using different representations, including the number line		
			Partition numbers to 1,000	Recognise the place value of each digit in a three- digit number (100s, 10s, 1s)	Identify, represent and estimate numbers using different representations, including the number line	
			Partition numbers to 1,000 flexibly			
			100s, 10s and 1s		Identify, represent and estimate numbers using different representations, including the number line	
			Use a number line to 1,000	Identify, represent and estimate numbers using different representations, including the number line	Recognise the place value of each digit in a three-digit number (100s, 10s, 1s)	
			Estimate on a number line to 1,000			
			Find 1, 10 and 100 more or less	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 three-digit number (100s, 10s, 1s)	
			Compare numbers to 1,000	Compare and order numbers up to 1,000		
			Order numbers to 1,000			
			Count in 50s	Count from 0 in multiples of 4, 8, 50 and 100; find 10 or	100 more or less than a given number	
Number – addition and subtraction (approx. 5 weeks)	2	Addition and subtraction (1) (10 lessons)	Apply number bonds within 10	Recognise the place value of each digit in a two-digit number (10s, 1s) (Year 2)	Add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds	
			Add/subtract 1s	Add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	
			Add/subtract 10s			

		1		1	1
			Add/subtract 100s		
			Spot the pattern	Add and subtract numbers with up to three digits,	Add and subtract numbers mentally, including:
			Add 1s across 10	using formal written methods of columnar addition	a three-digit number and ones, a three-digit
			Add 10s across 100	hundred	hundreds
			Subtract 1s across 10		
			Subtract 10s across 100		
			Making connections	Solve problems, including missing number problems, using number facts, place value, and more comple addition and subtraction	
	3	Addition and	Add two numbers	Add and subtract numbers with up to three digits,	Add and subtract numbers mentally, including:
		subtraction (2)	Subtract two numbers	using formal written methods of columnar addition	a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds
		(13 lessons)	Add two numbers		
			(across 10)		
			Add two numbers		
			(across 100)		
			Subtract two numbers		
			(across 10)		
			Subtract two numbers		
			(across 100)		
			Add a 3-digit and 2-digit		
			number		
			Subtract a 2-digit		
			number from a 3-digit		
			number		
			Complements to 100		
			Estimate answers	Estimate the answer to a calculation and use inverse op	erations to check answers
			Inverse operations		
			Problem solving (1)	Solve problems, including missing number problems, us	ing number facts, place value, and more complex
			Problem solving (2)	addition and subtraction	
Number –	4	Multiplication &	Multiplication – equal	Write and calculate mathematical statements for multiplication and division using the multiplication	Recall and use multiplication and division facts
Multiplication &		Division (1)	groups	tables that they know, including for two-digit numbers times one-digit numbers, using mental and	for the 5, 4 and 8 multiplication tables
Division		(5 lessons)	Use arrays		
(approx. 3½ weeks)			Multiples of 2	progressing to formal written methods	
			Multiples of 5 and 10		
			Sharing and grouping		
	5	Multiplication &	Multiply by 3	Recall and use multiplication and division facts for	Write and calculate mathematical statements
		Division (2)	Divide by 3	the 5, 4 and 8 multiplication tables	multiplication tables that they know, including
		(13 lessons)	The 3 times-table		for two-digit numbers times one-digit numbers,
			Multiply by 4		methods
			Divide by 4		
			The 4 times-table	-	
			Multiply by 8		
			Divide by 8	-	
			The 8 times-table		
			Problem solving –	Solve problems, including missing number problems, involving multiplication and division including	Write and calculate mathematical statements for multiplication and division using the
			multiplication and	positive integer scaling problems and correspondence problems in which n objects are	multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written
			division (1)		
			Problem solving –	connected to in objects	methods
			multiplication and		
			Understand divisibility	-	
			Linderstand divisibility	-	
			(2)		
Spring Term	1	1		1	
Strand	PM Unit	PM Unit Title	Lesson	NC Objective 1	NC Objective 2
Number –	6	Multiplication and	Multiples of 10	Write and calculate mathematical statements for multip	lication and division using the multiplication
Multiplication &	Ŭ	division (3)	Related calculations	tables that they know, including for two-digit numbers t	imes one-digit numbers, using mental and
Division		(13 lessons)	Reasoning about	progressing to formal written methods Solve problems, including missing number problems, including	volving multiplication and division including
(approx. 2½ to 3		,,	multiplication	positive integer scaling problems and correspondence p	roblems in which n objects are connected to m
weeks)				objects 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	
			Multiply 2-digits by 1-		
			aigit – no exchange	using mental and progressing to formal written met	hods
			Multiply 2-digits by 1-		

		digit – exchange	
		Expanded written method	
		Link multiplication and division	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
	Divide 2-digits by 1-digit – no exchange Divide 2-digits by 1-digit	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	
		–flexible partitioning	
		Divide 2-digits by 1-digit with remainders	
		How many ways?	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

	Γ		Problem solving – mixed	Solve problems, including missing number problems,	Write and calculate mathematical statements
			problems (1)	positive integer scaling problems and	multiplication tables that they know, including
			Problem solving – mixea	correspondence problems in which n objects are connected to m objects	for two-digit numbers times one-digit numbers, using mental and progressing to formal written
			problems (2)		methods
Measurement –	7	Length & Perimeter	Measure in m and cm	Measure, compare, add and subtract: lengths (n	n/cm/mm); mass (kg/g); volume/capacity
length & perimeter		(11 Lessons)	Measure in cm and mm	(ym)	
(approx. 2/2 weeks)			millimetres		
			Fouivalent lengths (m		
			and cm)		
			Equivalent lengths (mm		
			and cm)	4	
			Compare lengths	1	
			Add lengths		
			Measure perimeter	Measure the perimeter of simple 2D shapes	
			Calculate perimeter		
			Problem solving – length		
Number – fractions	8	Fractions	Understand the	Recognise and use fractions as numbers: unit fra	actions and non-unit fractions with small
(approx. 2 weeks)		(10 lessons)	denominator of unit	denominators	
			Compare and order unit		
			fractions		
			Understand the		
			numerator of non-unit		
			fractions	1	
			Compare and order non-		
			unit fractions		
			Divisions on a number		
			line	4	
			Count in fractions on a		
			Number line	Recognise and show, using diagrams, equivalent	t fractions with small denominators
			bar models		
			Equivalent fractions on a		
			number line	•	
Moocuromont -		Mass	Equivalent tractions	Measure compare add and subtract: lengths (n	n/cm/mm): mass (kg/g): volume/capacity
introducing mass &	9	(7 lessons)	Measure mass	(l/ml)	follyming, mass (ng/g), volume, supress,
capacity		, .	Measure mass in		
(approx. 2½ weeks)			kilograms and grams	4	
			Equivalent masses	1	
			Compare mass		
			Problem solving – mass		
	10	Capacity	Measure capacity and	Measure, compare, add and subtract: lengths (n	n/cm/mm); mass (kg/g); volume/capacity
		(6 lessons)	volume in litres and	(l/ml)	
			millilitres		
			millilitres		
			Equivalent capacities		
			and volumes (litres and		
			millilitres)		
			Compare capacity and		
			Add and subtract		
			capacity and volume		
			Problem solving –		
			capacity	<u> </u>	
Summer Term	PM Unit			NG Objective 4	
Strand	14	PM Unit Title	Lesson	NC Objective 1	NC Objective Z
(approx. 2½ weeks)	11	(8 lessons)	Subtract fractions	+ 1/7 = 6/7]	
		(0.10000110)	Partition the whole		
			Problem solving – add &	Solve problems that involve all of the above	
			subtract fractions		
			Unit fractions of a set of	Recognise, tind and write fractions of a discrete fractions with small denominators	set of objects: unit fractions and non-unit
			Non-unit fractions of a		
			set of objects		
			Reason with fractions of		
	1		an amount		
			Distribution 1.1	Colus problems that involve all full	
			Problem solving – fractions of measures	Solve problems that involve all of the above	

Measurement –	12	Money	Pounds and pence	Add and subtract amounts of money to give change, using both £ and p in practical	
money		(5 lessons)	Convert pounds and	contexts	
(approx. 1 week)		, ,	pence		
			Add money		
			Subtract money		
			Find change		
Mossuroment -	12	Timo	Roman numerals to 12	Tell and write the time from an analogue clock	
time	13	(12 lossons)		including using Roman numerals from I to XII, and 12-	
(approx 21/ weeks)		(12 lessons)	Tell the time to 5	hour and 24-hour clocks	
(approx. 2/2 weeks)			Tallaha Lara ta tha		Estimate and read time with increasing
			Tell the time to the		accuracy to the nearest minute; record and
			minute		compare time in terms of seconds, minutes and
					hours; use vocabulary such as o'clock, am/pm,
			Read time on a digital	Estimate and read time with increasing accuracy to	Tell and write the time from an analogue clock.
			clock	the nearest minute; record and compare time in	including using Roman numerals from I to XII,
				terms of seconds, minutes and hours; use vocabulary	and 12-hour and 24-hour clocks
				and midnight	
			Use am and pm	Estimate and read time with increasing accuracy to	
				the nearest minute; record and compare time in	
				such as o'clock, am/pm, morning, afternoon, noon	
				and midnight	
			Years, months and days	Know the number of seconds in a minute and the number of days in each month, year and leap year	
			Days and hours	Estimate and read time with increasing accuracy to	Tell and write the time from an analogue clock,
				terms of seconds, minutes and hours; use vocabulary	and 12-hour and 24-hour clocks
			Hours and minutes –	such as o'clock, am/pm, morning, afternoon, noon	Compare durations of events [for example to
			start and end times	and monight	calculate the time taken by particular events or tasks]
			Hours and minutes –	Compare durations of events [for example to	Estimate and read time with increasing
			durations	calculate the time taken by particular events or tasks]	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
			Hours and minutes –	the nearest minute; record and compare time in	calculate the time taken by particular events or
			compare durations	terms of seconds, minutes and hours; use vocabulary	tasks]
			Minutes and seconds	such as o'clock, am/pm, morning, afternoon, noon and midnight	
			Solve problems with		
			time	Deservice englance and an englance of a base of a	
Geometry –	14	Angles & properties	Turns and angles	Recognise angles as a property of shape or a description of a turn	Identity right angles, recognise that two right angles make a half-turn, three make three
properties of shape		of snape	Right angles in shapes		quarters of a turn and four a complete turn;
(approx. 2 weeks)		(9 lessons)			identify whether angles are greater than or less than a right angle
			Compare angles	Identify right angles, recognise that two right angles	Recognise angles as a property of shape or a
				make a half-turn, three make three quarters of a turn	description of a turn
				greater than or less than a right angle	
			Measure and draw	Draw 2D shapes and make 3D shapes using modelling	Identify horizontal and vertical lines and pairs
			accurately	materials; recognise 3D shapes in different orientations and describe them	of perpendicular and parallel lines
			Horizontal and vertical	Identify horizontal and vertical lines and pairs of	perpendicular and parallel lines
			Parallel and		
			perpendicular		
			Recognise, draw and	Draw 2D shapes and make 3D shapes using mod	elling materials; recognise 3-D shapes in
			describe 2D shapes	airrerent orientations and describe them	
			Recognise and describe		
			3D shapes		
			Make 3D shapes		Columnation and human the state of the
Statistics	15	Statistics	Interpret pictograms (1)	pictograms and tables	souve one-step and two-step questions [for example, 'How many more?' and 'How many
(approx. 21/2 weeks)		(/ lessons)			fewer?'] using information presented in scaled
			1.1.1	-	bar charts and pictograms and tables
			Interpret pictograms (2)	Interpret and present data using har charts	Solve one-step and two-stop quortions [for
			Draw pictograms	pictograms and tables	example, 'How many more?' and 'How many
					fewer?'] using information presented in scaled
			Interpret har charts (1)	4	par charts and pictograms and tables
			Interpret bar charts (1)	1	Solve one-step and two-step questions [for
					example, 'How many more?' and 'How many
					tewer?'] using information presented in scaled bar charts and pictograms and tables
			Collect and represent	Interpret and present data using bar charts, pict	ograms and tables
			data in a bar chart		
			Simple two-way tables	1	