



Chalfont St Peter Infant School Skills Progression

Subject area: Mathematics

National Curriculum Aims

The national curriculum for mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can **solve problems** by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Year R Pupils should be taught:

ELG Mathematics

Number: Have a deep 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 doubling facts.

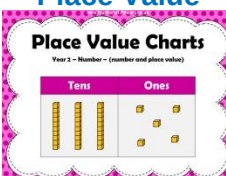
Numerical Patterns: Verbally count beyond 20, recognising the pattern of the counting system. Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Key stage 1 Pupils should be taught:

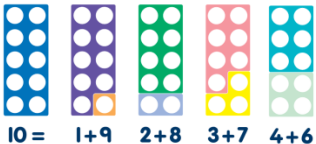
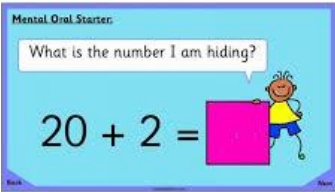
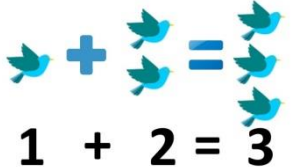
The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools].

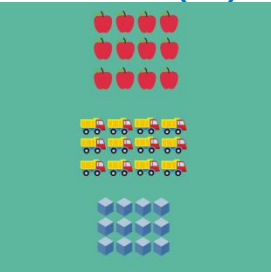
At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

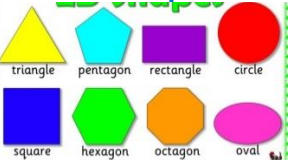
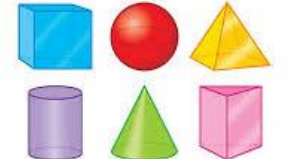
	Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.		
	The curriculum is divided into these areas:		
	Number – Number and Place Value, Addition and Subtraction, Multiplication and Division, Fractions		
	Measurement		
	Geometry _ Properties of Shape, Position and Direction		
	Statistics (Year 2 only)		
Chalfont St Peter’s Progression of Number and Place Value			
Skills	EYFS	Year 1	Year 2
Counting 	- To verbally count to 20 - To count to 30 and beginning to count higher (100). - To subitise to 5 - To conceptual subitise numbers to 10	- 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 - Count in multiples of twos, fives and tens	Count in steps of 2, 3 and 5 from 0, and in tens from any number forward and backwards
Place Value 			- Recognise the place value of each digit in a two-digit number - Compare and order numbers from 0 up to 100; use <, > and = signs
Representing Number 	- To build numbers to 20 - To continue patterns to 20 - To compare quantities	- Identify and represent numbers using objects and pictorial representations including the numberline, & and use language of: equal to, more than, less than (fewer), most, least - Read and write numbers from 1 to 20 in numerals and words - Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	- Identify, represent and estimate numbers using different representations, including the number line - Read and write numbers to at least 100 in numerals and in words

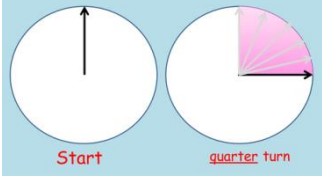
Chalfont St Peter's Progression of Addition and Subtraction

Number Facts (+/-)  10 = 1 + 9 2 + 8 3 + 7 4 + 6	- To find one more and one less of numbers to 10 - To explore the composition of numbers to 5 - To make bonds to 10 - To know the composition of numbers to 10	- Given a number, identify one more and one less - Represent and use number bonds and related subtraction facts within 20	Use place value and number facts to solve problems, recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
Mental (+/-) 	- To know addition and subtraction facts of numbers to 10 - To deepen understanding of numbers to 10	Add and subtract one-digit and two-digit numbers to 20, including zero	- Add and subtract using concrete objects, pictorial representations, and mentally, including TO+O, TO+T, TO+TO and O+O+O - Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
Problems (+/-)  1 + 2 = 3	- To add more - To say how many were added - To take away - To say how many were taken away	Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7=?-9	- Solve problems with addition and subtraction, using concrete, pictorial and abstract representations - Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems
Chalfont St Peter's Progression of Multiplication and Division			
Number facts (x/÷)	To know doubling facts to 10	- To make doubles - To use near doubles	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables,

			including recognising odd and even numbers.
Mental ($\times/\div$) 			• Calculation mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ($\times$), division ($\div$) and equals (=) signs • Show that multiplication of two number can be done in any order (commutative) and division from one number by another cannot
Problems ($\times/\div$) 	• To double numbers up to 10 • To find half of numbers up to 10 • To share quantities equally • To combine groups of 2, 5 and 10	• 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	• Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context
Chalfont St Peter's Progression of Fractions			
Recognising Fractions 	• To find half of numbers up to 10 • To share quantities equally	• Recognise, find and name half as one of two equal parts of an object, shape or quantity • Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	• Recognise, find, name and write fractions $1/3$, $1/4$, $2/4$, and $3/4$ of a length, shape, set of objects or quantity
Calculating with Fractions			• Write simple fractions for example $\frac{1}{2}$ of $6=3$ and

What is half of 10?  5			recognise equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
Chalfont St Peter's Progression of Shape, Space and Measure			
Measures  5cm	- To compare size, mass and capacity - To explore and compare mass, capacity, length and height - To find a balance	- Compare, describe and solve practical problems for: length/height, weight/mass, capacity/volume and time - Measure and begin to record length/height, weight/mass, capacity/volume and time	- Choose and use appropriate standard units to estimate and measure length/height (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); 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 $=$
Money 	To explore the size, shapes and values of coins through their play	Recognise and know the value of different denominations of coins and notes	- 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
Time	To talk about what happens in the day and what happens at night.	Sequence events in chronological order using language	Compare and sequence intervals of time

	• To talk about time • To order and sequence time	• 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	• 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
2D Shapes 	• To identify, name and compare circles and triangles • To find shapes in the environment • To identify shapes with 4 sides • To combine shapes with 4 sides • To select shapes for a purpose • To rotate shapes • To manipulate shapes • To explain shape arrangements • To compose shapes • To decompose shapes • To copy a 2D shape picture	• Recognise and name common 2D shapes (e.g square, rectangle, circle, triangle)	• Identify and describe the properties of 2D shapes including the number of sides and line symmetry in a vertical line • Compare and sort common 2D and 3D shapes and everyday objects • To use sides, corners and symmetry to describe 2D shapes
3D Shapes 	• To name and recognise 3D shapes • To find 2D shapes within 3D shapes • To use 3D shapes for tasks • To find 3D shapes in the environment	Recognise and name common 3D shapes (e.g cube, cuboid, pyramid and sphere)	• Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces • Identify 2D shapes on the surface of 3D shapes • To use vertices, edges and faces to describe 3D shapes
Position and Direction	• To describe positions • To visualise from different directions • To give directions	• Describe position, direction and movement, including whole, half, quarter and three-quarter turns	• Order and arrange combinations of mathematical objects in patterns and sequences

I recognise quarter turns. 	- To explore mapping - To create maps		Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn in terms of right angles for quarter, half and ¾ turns												
Chalfont St Peter’s Progression of Statistics															
Interpreting Data  <table><thead><tr><th>FRUIT</th><th>NUMBER OF CHILDREN WHO CHOSE IT</th></tr></thead><tbody><tr><td>PEAR</td><td>5</td></tr><tr><td>WATERMELON</td><td>2</td></tr><tr><td>ORANGE</td><td>1</td></tr><tr><td>APPLE</td><td>1</td></tr><tr><td>BANANA</td><td>1</td></tr></tbody></table>	FRUIT	NUMBER OF CHILDREN WHO CHOSE IT	PEAR	5	WATERMELON	2	ORANGE	1	APPLE	1	BANANA	1			Interpret and construct simple pictograms, tally charts, block diagrams and simple tables
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Extract Information from Data  <table><caption>Fruit Sales</caption><thead><tr><th>Fruit</th><th>Sales (£100s)</th></tr></thead><tbody><tr><td>Apples</td><td>40</td></tr><tr><td>Bananas</td><td>60</td></tr><tr><td>Grapes</td><td>30</td></tr><tr><td>Oranges</td><td>50</td></tr><tr><td>Pears</td><td>25</td></tr></tbody></table>	Fruit	Sales (£100s)	Apples	40	Bananas	60	Grapes	30	Oranges	50	Pears	25			- 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 the totalling and comparing categorical data
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