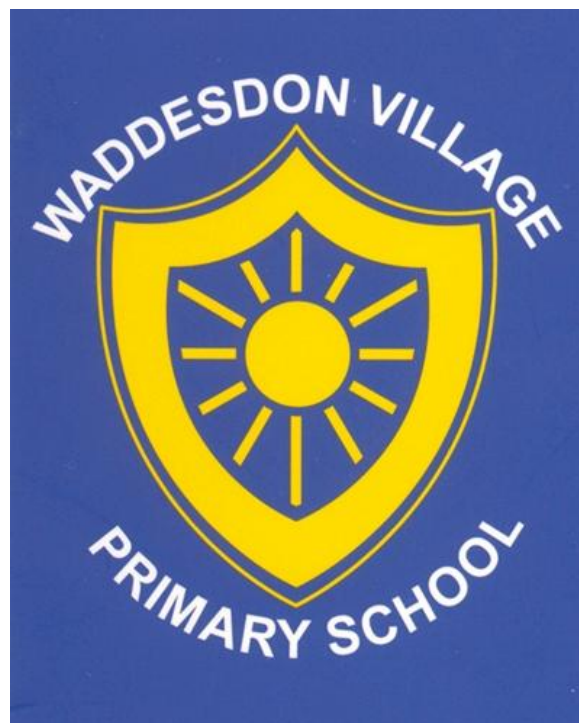


**Waddesdon Village Primary
School – a Pathway to Excellence**



Maths

A guide for Parents and Carers

Introduction

In 2014 the National Curriculum for maths changed and the contents of the programme of study became more challenging. Throughout the maths curriculum there is a significant emphasis on fluency, reasoning and problem solving.

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

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

At Waddesdon Village Primary School, we are following the White Rose scheme of work which aims to ensure all pupils have mastered the mathematics curriculum by the end of primary school. A mastery curriculum is not about just being able to memorise key facts and procedures, which tends to lead to superficial understanding that can easily be forgotten. Instead pupils should be able to become fluent in key concepts, be able to apply them to a range of familiar and unfamiliar problems as well as explain their reasoning.

In this booklet we have outlined the expectations of the maths curriculum. We appreciate that there is a lot of information in this booklet and that it may be a lot to digest. Our rationale is to keep you informed, in order for us to work together to support children in their learning. Therefore, practical ideas for how you can help are included. If you have any queries, a wealth of information can be found online, and we are always here should you wish to ask us for more information.

Mathematical Vocabulary Glossary

Using correct mathematical language is crucial for thinking, learning and communicating mathematically. Children may build knowledge through remembering information that they hear, but it is only when they put these ideas into their own words that it becomes clear whether concepts have been learned effectively. In order to support your children's learning further we have collated some key mathematical vocabulary below which you could encourage children to use at home.

The vocabulary lists are progressive so that language taught in previous years is used throughout the primary phase.

Number:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ number/ numeral ▪ zero ▪ count (up) to, count on (from, to), count back (from, to), count in ▪ forwards/backwards ▪ equal to ▪ equivalent to ▪ same as ▪ more, less, most, least, many ▪ odd, even ▪ multiple of ▪ few ▪ pattern ▪ pair 	Year 2	<ul style="list-style-type: none"> ▪ tally ▪ multiple of ▪ sequence ▪ continue ▪ predict ▪ few ▪ pattern ▪ pair, rule ▪ > greater than ▪ < less than 	Year 3	<ul style="list-style-type: none"> ▪ multiple of, factor of ▪ predict ▪ relationship ▪ Roman numerals
Year 4	<ul style="list-style-type: none"> ▪ next, consecutive ▪ integer, positive, negative ▪ above/below zero, minus ▪ negative numbers 	Year 5	<ul style="list-style-type: none"> ▪ \geq greater than or equal to ▪ \leq less than or equal to ▪ formula ▪ divisibility ▪ square number ▪ prime number ▪ ascending/descending order 	Year 6	<ul style="list-style-type: none"> ▪ formula ▪ divisibility ▪ factorise ▪ digit total

Place Value:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ ones (not units)/ tens ▪ digit ▪ the same number as/ as many as ▪ more, larger, bigger, greater, fewer, smaller, less, fewest, smallest, least ▪ most, biggest, largest, greatest ▪ one more, ten more ▪ one less, ten less ▪ equal to ▪ compare ▪ order ▪ last, last but one ▪ before, after, next ▪ between/ half-way between ▪ above, below 	Year 2	<ul style="list-style-type: none"> ▪ one-, two- or three-digit number ▪ place, place value ▪ stands for, represents ▪ exchange 	Year 3	<ul style="list-style-type: none"> ▪ hundreds ▪ one hundred more ▪ one hundred less
Year 4	<ul style="list-style-type: none"> ▪ thousands ▪ one thousand more ▪ one thousand less 	Year 5	<ul style="list-style-type: none"> ▪ tens of thousands ▪ Hundreds of thousands 	Year 6	<ul style="list-style-type: none"> ▪ millions

Addition and Subtraction:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none">▪ addition▪ add, more, and make,▪ sum, total, altogether▪ double▪ near double▪ half, halve▪ one more, two more ... ten more▪ subtract▪ left over▪ less▪ fewer▪ take away▪ difference between▪ equals▪ is the same as▪ number bonds/pairs▪ missing number	Year 2	<ul style="list-style-type: none">▪ difference between▪ is the same as▪ number bonds /pairs/facts▪ tens boundary	Year 3	<ul style="list-style-type: none">▪ hundreds boundary
Year 4	<ul style="list-style-type: none">▪ inverse	Year 5	<ul style="list-style-type: none">▪ ones boundary▪ tenths boundary	Year 6	<ul style="list-style-type: none">▪ hundredth boundary

Multiplication and Division:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ multiplication ▪ multiply ▪ multiplied by ▪ multiple ▪ division ▪ dividing ▪ grouping ▪ sharing ▪ doubling ▪ halving ▪ array 	Year 2	<ul style="list-style-type: none"> ▪ groups of ▪ times ▪ once, twice, three times ... ten times ▪ repeated addition division ▪ divide, divided by, divided into ▪ share, share equally ▪ left, left over ▪ one each, two each, three each ... ten each ▪ group in pairs, threes ... tens ▪ equal groups of ▪ row, column ▪ number patterns ▪ multiplication table ▪ multiplication fact, division fact 	Year 3	<ul style="list-style-type: none"> ▪ factor ▪ product ▪ remainder
Year 4	<ul style="list-style-type: none"> ▪ inverse ▪ square, squared ▪ cube, cubed 	Year 5	<ul style="list-style-type: none"> ▪ Apply existing vocabulary 	Year 6	<ul style="list-style-type: none"> ▪ Apply existing vocabulary

Fractions, Decimals and Percentages:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ fraction ▪ equal part ▪ equal grouping ▪ equal sharing ▪ parts of a whole ▪ half ▪ one of two equal parts ▪ quarter ▪ one of four equal parts 	Year 2	<ul style="list-style-type: none"> ▪ equivalent fraction ▪ mixed number ▪ numerator, denominator ▪ half, two halves ▪ two quarters, three quarters ▪ one third, two thirds ▪ one of three equal parts 	Year 3	<ul style="list-style-type: none"> ▪ sixths ▪ sevenths ▪ eighths ▪ tenths
Year 4	<ul style="list-style-type: none"> ▪ hundredths ▪ decimal ▪ decimal fraction ▪ decimal point ▪ decimal place ▪ decimal equivalent ▪ proportion 	Year 5	<ul style="list-style-type: none"> ▪ proper/improper fraction ▪ common factor ▪ mixed number ▪ reduced to ▪ cancel ▪ thousandths ▪ in every, for every ▪ percentage ▪ percent, % 	Year 6	<ul style="list-style-type: none"> ▪ ratio

Algebra- Year 5 & 6 only:

Year 5	<ul style="list-style-type: none"> ▪ formula 	Year 6	<ul style="list-style-type: none"> ▪ formulae ▪ equation ▪ unknown ▪ variable
--------	---	--------	---

Measures - General:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ measure ▪ measurement ▪ size ▪ compare ▪ guess, estimate enough, not enough ▪ too much, too little, too many, too few ▪ nearly, close to, about the same as, roughly ▪ just over, just under 	Year 2	<ul style="list-style-type: none"> ▪ measuring scale 	Year 3	<ul style="list-style-type: none"> ▪ approximately
Year 4	<ul style="list-style-type: none"> ▪ unit ▪ standard unit ▪ metric unit 	Year 5	<ul style="list-style-type: none"> ▪ imperial unit 	Year 6	<ul style="list-style-type: none"> ▪ Same as previous years

Measurement - Length:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ centimetre, metre ▪ length, height, width, depth ▪ long, short, tall, high, low, wide, narrow, thick, thin etc... ▪ longest, shortest, tallest, highest etc... ▪ far, near, close ▪ ruler ▪ metre stick 	Year 2	<ul style="list-style-type: none"> ▪ far, further, furthest ▪ near, close ▪ tape measure 	Year 3	<ul style="list-style-type: none"> ▪ approximately ▪ millimetre, kilometre, mile ▪ distance apart ... between ... to ... from ▪ perimeter
Year 4	<ul style="list-style-type: none"> ▪ breadth ▪ edge 	Year 5	<ul style="list-style-type: none"> ▪ square metre (m²), square millimetre 	Year 6	<ul style="list-style-type: none"> ▪ yard, foot, feet, inch, inches ▪ circumference

	<ul style="list-style-type: none"> ▪ area ▪ covers ▪ square centimetre (cm²) 		(mm ²)		
--	--	--	--------------------	--	--

Measurement - Weight:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ kilogram, half kilogram ▪ weigh, weighs, balances ▪ heavy, light, heavier than, lighter than, heaviest, lightest ▪ scales 	Year 2	<ul style="list-style-type: none"> ▪ gram 	Year 3	<ul style="list-style-type: none"> ▪ approximately
Year 4	<ul style="list-style-type: none"> • mass • big, bigger, small, smaller ▪ weight ▪ heavy/light, heavier/lighter, heaviest/lightest 	Year 5	<ul style="list-style-type: none"> ▪ same as previous years 	Year 6	<ul style="list-style-type: none"> ▪ tonne, pound, ounce

Measurement - Capacity and Volume

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ litre, half litre ▪ capacity ▪ volume ▪ full ▪ empty ▪ more than ▪ less than ▪ half full ▪ quarter full ▪ holds ▪ container 	Year 2	<ul style="list-style-type: none"> ▪ contains 	Year 3	<ul style="list-style-type: none"> ▪ approximately
Year 4	<ul style="list-style-type: none"> ▪ measuring cylinder 	Year 5	<ul style="list-style-type: none"> ▪ pint, gallon 	Year 6	<ul style="list-style-type: none"> ▪ centilitre ▪ cubic

						centimetres(cm ³) , cubic metres (m ³), cubic millimetres (mm ³), cubic kilometres (km ³)
--	--	--	--	--	--	--

Measurement - Time:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ time ▪ days of the week ▪ months of the year ▪ seasons ▪ day, week, weekend, month, year ▪ times of day ▪ today, yesterday, tomorrow ▪ before, after, earlier, later, next, first, last ▪ midnight ▪ now, soon, early, late ▪ quick, quicker... ▪ slow, slower ▪ old, older... ▪ new, newer ... ▪ takes longer, takes less time ▪ always, never, often, sometimes, usually ▪ hour, o'clock, half past, quarter past, quarter to ▪ clock, clock face, watch, hour hands, minute hand ▪ hours, minutes 	Year 2	<ul style="list-style-type: none"> ▪ digital/analogue ▪ clock/watch, timer ▪ hours, minutes, seconds ▪ fortnight ▪ 5, 10, 15 minutes past 	Year 3	<ul style="list-style-type: none"> ▪ century ▪ calendar ▪ earliest, latest ▪ a.m., p.m. ▪ Roman numerals ▪ 12-hour clock time, 24-hour clock time

Year 4	<ul style="list-style-type: none"> ▪ leap year ▪ millennium ▪ noon ▪ date of birth ▪ timetable, ▪ arrive, depart 	Year 5	<ul style="list-style-type: none"> ▪ Same as previous years 	Year 6	<ul style="list-style-type: none"> ▪ Greenwich Mean Time ▪ British Summer Time ▪ International Date Line
--------	--	--------	--	--------	---

Measure - Temperature:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ NA 	Year 2	<ul style="list-style-type: none"> ▪ temperature ▪ degree 	Year 3	<ul style="list-style-type: none"> ▪ centigrade
Year 4	<ul style="list-style-type: none"> ▪ Same as previous years 	Year 5	<ul style="list-style-type: none"> ▪ minus 	Year 6	<ul style="list-style-type: none"> ▪ Same as previous years

Money:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ money ▪ coin ▪ penny, pence, pound ▪ price, cost ▪ buy, sell ▪ spend, spent ▪ pay ▪ change ▪ dear, costs more ▪ cheap, costs less, cheaper ▪ costs the same as ▪ how much 	Year 2	<ul style="list-style-type: none"> ▪ bought ▪ sell, sold 	Year 3	<ul style="list-style-type: none"> ▪ Same as previous years

	<ul style="list-style-type: none"> ▪ ...? ▪ how many ▪ ...? ▪ total 				
Year 4	<ul style="list-style-type: none"> ▪ Same as previous years 	Year 5	<ul style="list-style-type: none"> ▪ discount ▪ currency 	Year 6	<ul style="list-style-type: none"> ▪ profit, loss

Geometry - General:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ shape, pattern ▪ flat ▪ curved, straight ▪ round ▪ hollow, solid ▪ sort ▪ make, build, draw ▪ size ▪ bigger, larger, smaller ▪ symmetry, symmetrical, symmetrical pattern ▪ pattern, repeating pattern ▪ match 	Year 2	<ul style="list-style-type: none"> ▪ surface ▪ line of symmetry 	Year 3	<ul style="list-style-type: none"> ▪ perimeter
Year 4	<ul style="list-style-type: none"> ▪ construct ▪ line ▪ sketch ▪ centre ▪ angle 	Year 5	<ul style="list-style-type: none"> ▪ radius, diameter ▪ congruent ▪ axis of symmetry ▪ reflective symmetry 	Year 6	<ul style="list-style-type: none"> ▪ circumference, ▪ concentric ▪ arc ▪ net ▪ open, closed

	<ul style="list-style-type: none"> ▪ right-angled ▪ base ▪ square based ▪ reflect ▪ reflection ▪ regular, irregular 				
--	---	--	--	--	--

Geometry - 2D Shape:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ corner, side ▪ point, pointed ▪ rectangle (including square) ▪ circle ▪ triangle 	Year 2	<ul style="list-style-type: none"> ▪ rectangular ▪ circular ▪ triangular ▪ pentagon ▪ hexagon ▪ octagon 	Year 3	<ul style="list-style-type: none"> ▪ pentagonal ▪ hexagonal ▪ octagonal ▪ quadrilateral ▪ right-angled ▪ parallel, perpendicular
Year 4	<ul style="list-style-type: none"> ▪ 2-D, two-dimensional ▪ oblong ▪ rectilinear ▪ equilateral triangle, isosceles triangle, scalene triangle ▪ heptagon ▪ parallelogram, rhombus, trapezium ▪ polygon ▪ parallel, perpendicular 	Year 5	<ul style="list-style-type: none"> ▪ x-axis, y-axis, quadrant 	Year 6	<ul style="list-style-type: none"> ▪ kite

Geometry - 3D Shape:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ face, edge, vertex, vertices ▪ cube, cuboid ▪ pyramid ▪ sphere ▪ cone ▪ cylinder ▪ oblong 	Year 2	<ul style="list-style-type: none"> ▪ same as previous year 	Year 3	<ul style="list-style-type: none"> ▪ hemisphere ▪ prism, triangular prism
Year 4	<ul style="list-style-type: none"> ▪ cylinder ▪ 3-D, three-dimensional ▪ spherical ▪ tetrahedron ▪ polyhedron ▪ cylindrical 	Year 5	<ul style="list-style-type: none"> ▪ octahedron 	Year 6	<ul style="list-style-type: none"> ▪ dodecahedron ▪ net, open, closed

Position and Direction:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none"> ▪ position ▪ over, under, underneath, above, below ▪ top, bottom, side ▪ on, in ▪ outside, inside ▪ around ▪ in front, behind, front, back ▪ beside, next to ▪ opposite ▪ apart ▪ between, middle ▪ edge ▪ centre 	Year 2	<ul style="list-style-type: none"> ▪ route ▪ higher, lower ▪ clockwise, anticlockwise ▪ right angle ▪ straight line 	Year 3	<ul style="list-style-type: none"> ▪ compass point ▪ north, south, east, west, N, S, E, W ▪ horizontal, vertical, diagonal ▪ angle ... is a greater/smaller angle than

	<ul style="list-style-type: none"> ▪ direction ▪ journey ▪ left, right, up, down ▪ forwards, backwards, sideways ▪ across, next to, close, near, far ▪ along ▪ through ▪ from, towards, away from ▪ turn ▪ whole turn, half turn, quarter turn, three-quarter turn 				
Year 4	<ul style="list-style-type: none"> ▪ north-east, north-west, south-east, south-west, NE, NW, SE, SW ▪ translate, translation ▪ rotate, rotation ▪ degree ▪ reflection ▪ compass ▪ acute angle ▪ obtuse angle 	Year 5	<ul style="list-style-type: none"> ▪ coordinate ▪ protractor 	Year 6	<ul style="list-style-type: none"> ▪ reflex angle

Statistics:

Year	Terminology taught	Year	Terminology taught	Year	Terminology taught
Year 1	<ul style="list-style-type: none">▪ count▪ sort▪ vote▪ group▪ set▪ list▪ table	Year 2	<ul style="list-style-type: none">▪ tally▪ graph▪ block graph▪ pictogram▪ represent▪ label▪ title▪ most popular/ most common▪ least popular/least common	Year 3	<ul style="list-style-type: none">▪ chart▪ bar chart▪ frequency table▪ Carroll diagram▪ Venn diagram▪ axis/axes▪ diagram
Year 4	<ul style="list-style-type: none">▪ survey▪ questionnaire▪ data	Year 5	<ul style="list-style-type: none">▪ database▪ bar line chart▪ line graph▪ maximum/minimum value▪ outcome▪ continuous/ discrete data	Year 6	<ul style="list-style-type: none">▪ pie chart▪ mean (mode, median, range as estimates for this)▪ statistics▪ distribution

Mathematical Reasoning

The aims of the National Curriculum are to develop fluency and the ability to reason mathematically and solve problems. Reasoning is not only important in its own right but impacts on the other two aims. Reasoning about what is already known in order to work out what is unknown will improve fluency; for example if I know what 12×12 is, I can apply reasoning to work out 12×13 . The ability to reason also supports the application of mathematics and an ability to solve problems set in unfamiliar contexts. In order to support your children's learning further we have collated some key mathematical sentence stems below which you could use with your children at home.

Sentence Stems:

What could we try next?

How did you work it out?

Show how you ...

Explain your thinking.

Explain your method.

Explain your reasoning.

How do you know?

Describe the pattern.

Describe the rule.

Investigate...

Can you make a statement/ conjecture about ...?

Justify your answer/ reasoning

I agree/ disagree with ... because ...

If I know ..., I know...

Make a statement about...

Can you prove it?

Predict...

What do you know about...?

Identify similarities/ differences...

How does this method compare to...?

**Waddesdon Village Primary School – a Pathway to
Excellence**

School Development Priorities

2018-2019



Priority 1: To further develop teaching and learning.

Priority 2: To develop a curriculum that is underpinned by reading.

Priority 3: To provide challenge across the curriculum to raise progress and attainment of all key groups.

Priority 4: To develop a secure mastery curriculum in mathematics.



Excellence

Your pathway to excellence

Aspire

Well-being

Honesty

Tolerance

Achievement

Perseverance