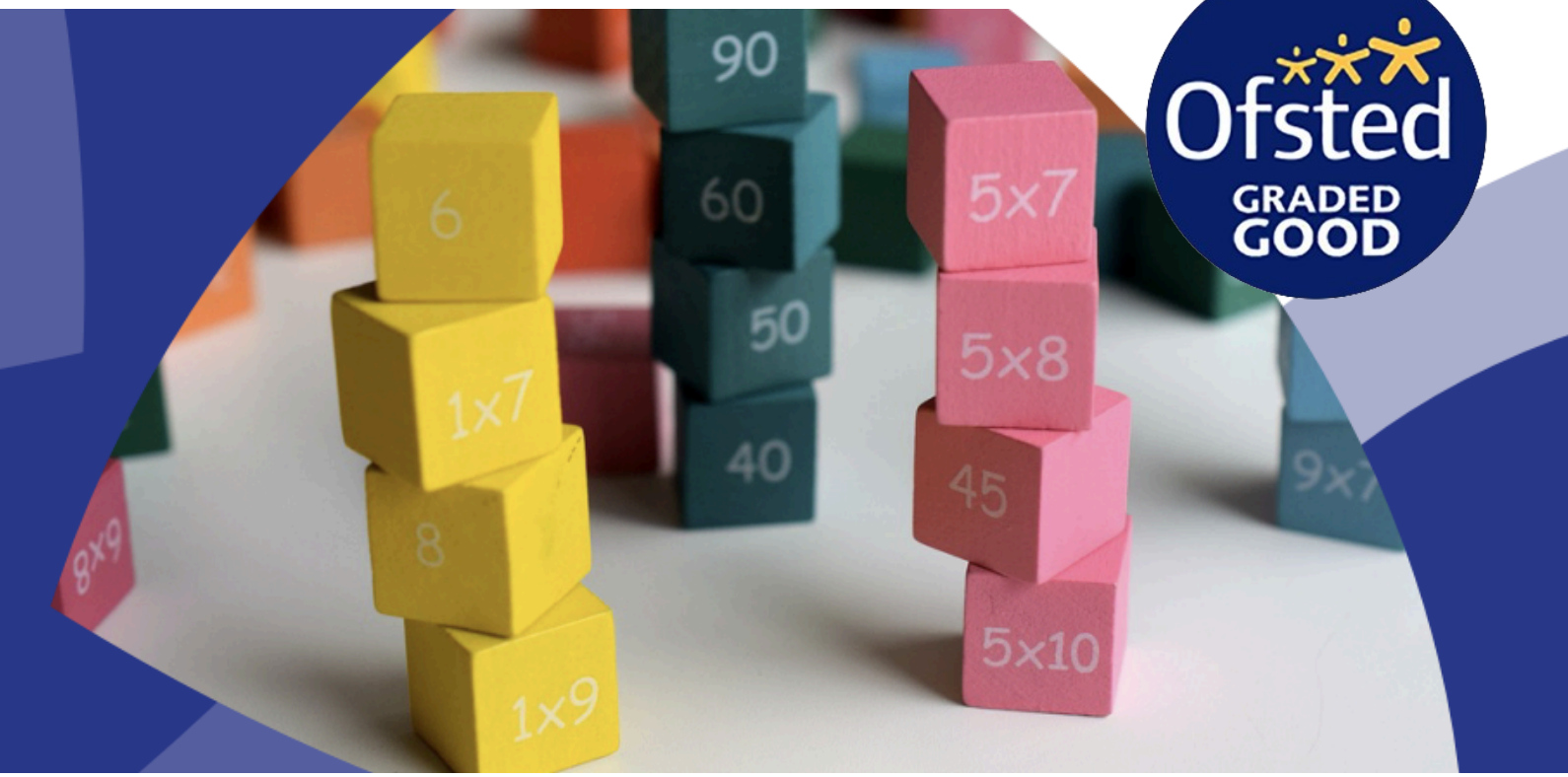
West Drayton Academy

Believe • Empower • Achieve



Ofsted GRADED GOOD

MATHS CURRICULUM

INTENT

The intent of our Maths curriculum at West Drayton Academy is to provide all pupils with a strong foundation in mathematical skills and knowledge which will enable them to become confident and independent learners in mathematics. Our curriculum aims to foster a love for maths, develop fluency, problem-solving abilities, and equip pupils with the skills needed for their future educational and professional journeys. It allows children to better make sense of the world around them by making connections between mathematics and everyday life. In our approach to teaching mathematics, we provide opportunities for students to engage in discussions, explain their thinking, and use mathematical language. We also utilise a combination of concrete, pictorial, and abstract representations to support students' understanding. Our curriculum is structured in a spiral fashion, building on prior knowledge to deepen understanding, and teachers continuously assess and provide feedback to guide the learning process. This includes developing arithmetic skills and times tables in a logical and structured manner.

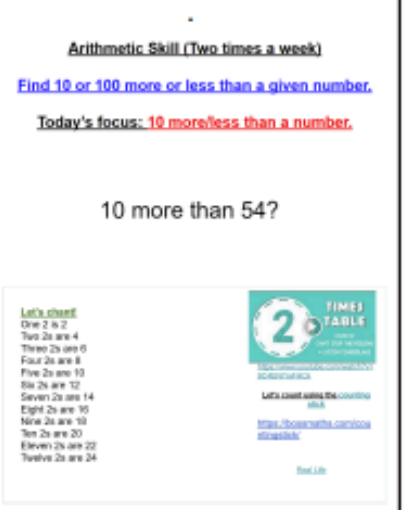
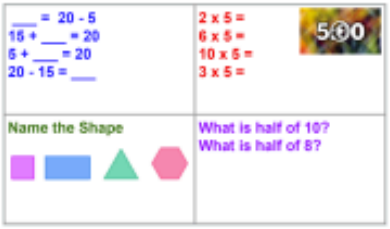
IMPLEMENTATION

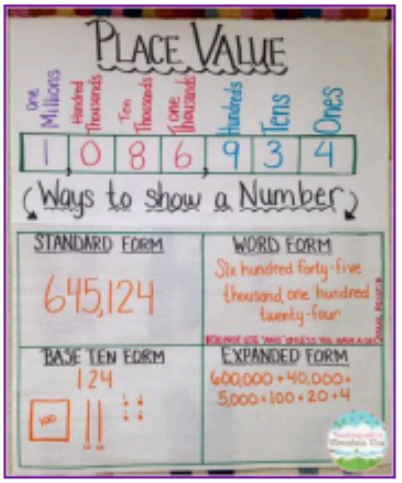
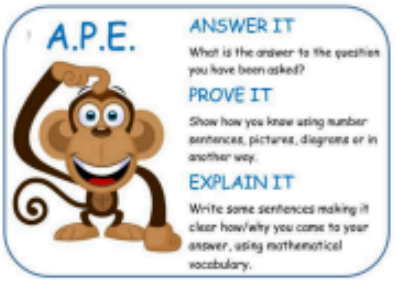
West Drayton Academy implements a spiral curriculum, utilising Power Maths as the main resource. This curriculum design focuses on revisiting topics every half term, preventing learning from being forgotten and ensuring that prior knowledge remains memorable and recent. This approach supports a deeper understanding of concepts and promotes continuity in students' mathematical development.

To ensure that lessons across the school are progressive and build upon prior learning, we have created medium term plans for every year group. Each MTP provides a focus times table for the half term, a weekly arithmetic focus, weekly learning intentions and any prior learning linked to their current topic.

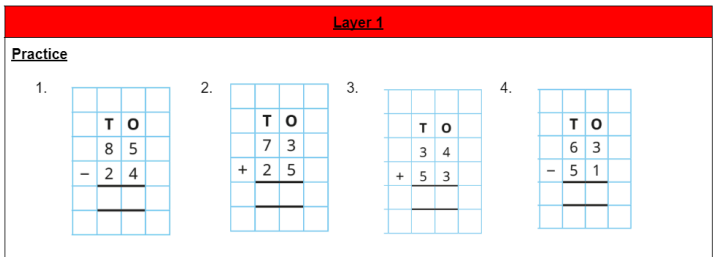
1 (3 days)				BASELINE Arithmetic BASELINE Multiplications			
2 11/9	**Number and place value**	Recognise the place value of a digit in a 2 digit number	1 times table 2 times table	Numbers to 20 Count objects to 100 by making 10s Recognise 10s and 1s Use a place value chart	Use ten frames, bead strings & part part whole models.	Year 1 Number – number and place value Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Read and write numbers from 1 to 20 in numerals and words Year 1 Number – number and place value Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens. Year 1 Number – number and place value identify and represent numbers using objects and pictorial representations including the number line	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward Recognise the place value of each digit in a two-digit number (tens, ones). Identify, represent and estimate numbers using different representations, including the number line.

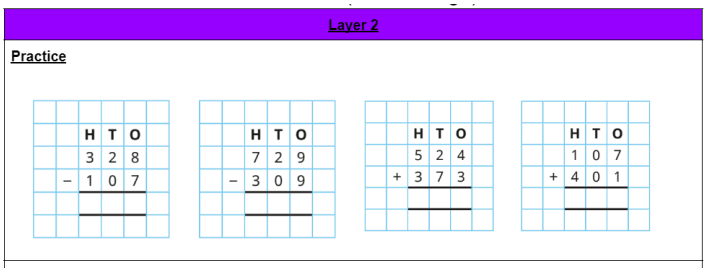
The lessons themselves are also structured so that there is consistency across the school. Please see the structure below:

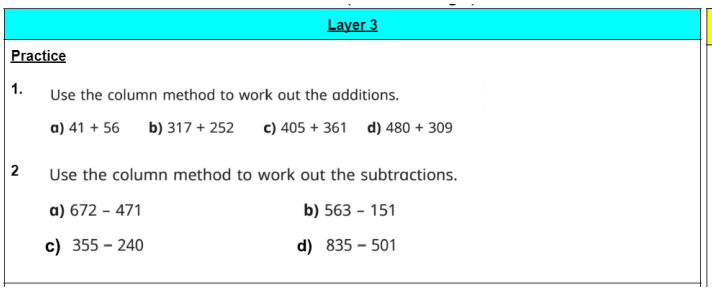
Arithmetic Skill **or** **Times Tables**	A **quick** starter where you introduce the arithmetic skill and practise answering questions on **whiteboards**. A **quick** starter where you introduce the times tables and practise **these in different ways - chanting, singing songs, colouring 100 squares to find the pattern…**	
Quadrant	A **5 minute** starter - Children split their whiteboard into 4 sections. Each section will answer a set of questions based on prior learning, new learning, pre learning AFL, gaps, arithmetic or times tables skills. Teachers mark this with their class, going through the answers quickly. Correct the answers with the children but now is not the time to go through how to answer the question - During the next lesson, 'most' children will get on with the quadrant but the teacher will work with a few children to go through one particular question that they didn't understand from the day before. If there was one part of the quadrant that they ALL didn't get, the teacher could model one quadrant and the children have a go at the other three	
Prior learning	Remind children of something they have already been taught that will help them with their new learning.	
Vocabulary & Stem sentences	Introduce new vocabulary to the children and make links to vocabulary that they might already know. Introduce stem sentences to the children and expect them to use them throughout their lesson.	

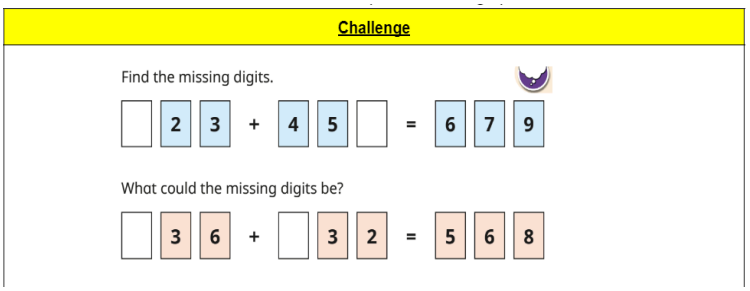
AFL	Assess the children - What do they know about the learning already? The red box is a WTS practice question. The purple question is an EXS level apply question. If the children can complete or find the WTS question tricky then they stay on the carpet for the model. If the children can complete the purple question then they go and start layer 3 in their books.	
Anchor chart - Success Criteria	Here you will work with the children to discuss how they answered the AFL questions. You will work together to build a set of steps that the children will refer to throughout the lesson. This anchor chart must be put on your working wall.	
Model	You will now model how to answer the questions using the anchor chart. You will model out loud and teach the children how to work through the steps.	
Children complete work	Children will now go and complete the appropriate layer. You may want to keep a group of children to work with you on the carpet if you feel like they need some extra support. Children can use a range of resources to support their learning.	
Reasoning	You will stop the children with 10 minutes of the lesson to go and model how to answer a reasoning problem. The children will need to use the A.P.E. strategy. If there is time, the children will then complete the reasoning problem in their book or improve one they have already written.	

During the lesson, the children have access to three different layers. These layers represent working towards, expected and greater depth levels of work. The sheets are progressive and allow every child within the class to practise a skill, apply a skill and then reason using that skill.









Times Tables

At WDA we teach times tables explicitly twice a week for 10 minutes with one longer lesson every half term. The longer lesson will set out the expectations for the children and will introduce the children to the times tables that they are learning that half term.

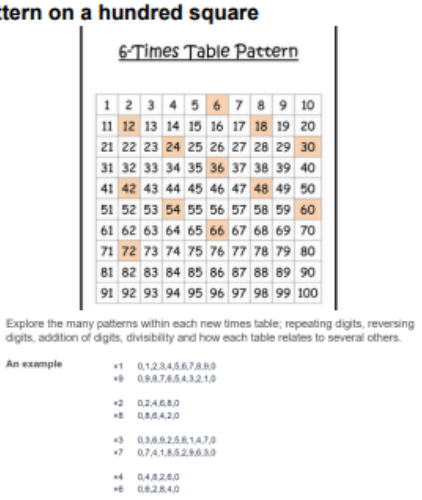
Year	Aut 1	Aut 2	Spr 1	Spr 2	Sum 1	Sum 2
Rec.	Experience of counting in 1s Grouping items into groups of 2,3,5,10.					
1	Experience of counting in 1s, 2s, 5s, 10s.					
2	x	(1x) 2x	5x	(5x) 10x	0x and revision	4x
3	(2x) 4x	(4x) 8x	3x	(3x) 6x	(6x) 12x	9x
4	9x	7x	11x	Squares	Revision	Test: June
5	25x (50x)	(50x) 100 x	Mixed times tables (1-12)	Squares	Revision	Test: June
6	Fractions	Prime numbers	Mixed times tables (1-12)	Squares	Revision	Test: June

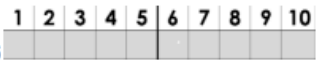
Times table sound bites grid

1 **10** is 10	2 **10**s are 20	3 **10**s are 30	4 **10**s are 40	5 **10**s are 50	6 **10**s are 60	7 **10**s are 70	8 **10**s are 80	9 **10**s are 90	10 **10**s are 100
1 **9** is 9	2 **9**s are 18	3 **9**s are 27	4 **9**s are 36	5 **9**s are 45	6 **9**s are 54	7 **9**s are 63	8 **9**s are 72	9 **9**s are 81	10 **9**s are 90
1 **8** is 8	2 **8**s are 16	3 **8**s are 24	4 **8**s are 32	5 **8**s are 40	6 **8**s are 48	7 **8**s are 56	8 **8**s are 64	9 **8**s are 72	10 **8**s are 80
1 **7** is 7	2 **7**s are 14	3 **7**s are 21	4 **7**s are 28	5 **7**s are 35	6 **7**s are 42	7 **7**s are 49	8 **7**s are 56	9 **7**s are 63	10 **7**s are 70
1 **6** is 6	2 **6**s are 12	3 **6**s are 18	4 **6**s are 24	5 **6**s are 30	6 **6**s are 36	7 **6**s are 42	8 **6**s are 48	9 **6**s are 54	10 **6**s are 60
1 **5** is 5	2 **5**s are 10	3 **5**s are 15	4 **5**s are 20	5 **5**s are 25	6 **5**s are 30	7 **5**s are 35	8 **5**s are 40	9 **5**s are 45	10 **5**s are 50
1 **4** is 4	2 **4**s are 8	3 **4**s are 12	4 **4**s are 16	5 **4**s are 20	6 **4**s are 24	7 **4**s are 28	8 **4**s are 32	9 **4**s are 36	10 **4**s are 40
1 **3** is 3	2 **3**s are 6	3 **3**s are 9	4 **3**s are 12	5 **3**s are 15	6 **3**s are 18	7 **3**s are 21	8 **3**s are 24	9 **3**s are 27	10 **3**s are 30
1 **2** is 2	2 **2**s are 4	3 **2**s are 6	4 **2**s are 8	5 **2**s are 10	6 **2**s are 12	7 **2**s are 14	8 **2**s are 16	9 **2**s are 18	10 **2**s are 20
1 **1** is 1	2 **1**s are 2	3 **1**s are 3	4 **1**s are 4	5 **1**s are 5	6 **1**s are 6	7 **1**s are 7	8 **1**s are 8	9 **1**s are 9	10 **1**s are 10

The language that we use across the school is the same so that it is consistent! We are going to use the following language when we chant:

Times tables are taught consistently throughout the school using the format below:

10 minute sessions		
Step 1	What comes in 6s? 	**Chanting in order** One six is 6 Two sixes are twelve… **Chanting out of order** Seven sixes are Three sixes are ….
Step 2	**Spot the pattern on a hundred square** 	**Chanting in order** One six is 6 Two sixes are twelve… **Chanting out of order** Seven sixes are Three sixes are ….

Step 3	**Chanting in order** One six is 6 Two sixes are twelve… **Chanting out of order** Seven sixes are Three sixes are ….	3 minute times table assessment in order on whiteboards 1 x 6 = 2 x 6 = 3 x 6 =
Step 4	Step counting using counting stick (ruler) 6, 12, 18, 24 	**Chanting in order** One six is 6 Two sixes are twelve… **Chanting out of order** Seven sixes are Three sixes are ….
Step 5	Step counting using counting stick (ruler)  6, 12, 18, 24 Teachers watch this video for strategies Make connections between times tables. If I know 2 x 6, how can I use this to solve 4 x 6, 8 x 6….	**Finding patterns on a table**  If I know 2 x 6, how can I use this to solve 4 x 6, 8 x 6….
Step 6	Step counting using counting stick (ruler) 6, 12, 18, 24	Printed assessment in order and out of order 1 x 6 = 4 x 6 =

Professional development

WDA takes pride in providing its teachers with the necessary training and support to deliver maths effectively. The Maths subject Leader plays a crucial role in guiding and assisting teachers in maintaining the highest quality of teaching. By sharing areas for development and offering additional support from the maths lead and other specialists, teachers have the opportunity to continually enhance and refine their practice.

Home Learning

We understand the value of school and parents/carers working in partnership to ensure children have the best opportunities to practise what they have learnt in school. We share links to Emile that enable children to engage in sessions that support what they have been learning in school.

We offer parents the opportunity to attend information sessions about Emile and online learning so that they can fully support their children at home.

LONG TERM OVERVIEW

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Place Value

N	**Number** • Number rhymes • Recognise numbers 1-3 • Show finger numbers to 3 **Numerical pattern** • Number rhymes • Counting to 10 • Recites numbers past 5	**R**	**Number** • Numerical patterns • Comparing groups within 5 • Comparing numbers within 10 • Subitising • Numbers to 20
Y1	• Sorting and counting objects to 50 • Counting on and back to 50 • One more, one less to 50 • Less than/greater than/equal to • Compare and order numbers to 50 • Count from 0 to 50 • Count by making groups of 10 • Partition in 10s and 1s • Tens to 100 • Number line to 100	**Y2**	• Numbers to 20 • Recognise 10s and 1s • Partition numbers to 100 • Flexibly partition numbers to 100 • 10s and 1s on the number line to 100 • Order and compare objects and numbers • Count in 2s,5s,10s • Count in 3s
Y3	• Represent and partition numbers to 100, 1000 • Flexible partitioning of numbers to 1,000 • Find 1, 10 or 100 more or less • Number line to 1,000 • Compare and order numbers to 1,000 • Count in 50s		
Y4	• To represent numbers to 1000 & 10000 • To partition numbers up to 1,000 into hundreds, tens and ones • To label, identify and find missing values on number lines up to 1,000 & 10,000 • To partition a number up to 10,000 by identifying the number of thousands, hundreds, tens and ones • To explore flexible partitioning of numbers up to 10000 • To find 1,10,100,1000 more or less than a number • To round numbers to the nearest 10/100/1000 • Roman Numerals		
Y5	• To explore the place value of numbers to 1,000,000. • To read and write numbers to 1,000,000, using the correct structure. • To explore the relationship of numbers of different values/in different columns (powers of 10) • To identify consecutive values when counting forwards and backwards (more/less) and find missing numbers between two values. • To partition numbers to 1,000,000. • To explore Roman numerals up to 1,000. • To label, identify and find missing values on the number line up to 1,000,000. • To compare and order numbers to 1,000,000. • To round to the nearest 100,000. 1,000,000. • To round within 1,000,000 to any power of 10 up to 100,000. • To understand negative numbers using vertical representations and real life contexts. • To count through zero in 1s, using vertical and horizontal representations. • To count through zero in multiples. • To compare and order negative numbers. • To find the difference between positive and negative numbers.		
Y6	• To read and write numbers up to 10 000 000 and determine the value of each digit. • To order and compare numbers up to 10 000 000. • To round any whole number to a required degree of accuracy. • To use negative numbers in context, calculating intervals across zero. • To solve number and practical problems that involve the above. • To use roman numerals		

Addition and Subtraction

N

Number

- Recognise numerals to 10
- Separates a group of three or four objects in different ways beginning to recognise that the total is still the same.
- Through play and explorations, begin to learn that numbers are composed of smaller amounts.

Numerical pattern

- Can say 'one more than' to 5
- Beginning to recognise that each number is one more than the one before.

R

Number

- Number bonds within 5
- Addition to 10
- Number bonds to 10
- Subtraction
- Counting on and counting back
- Number bonds to 5
- One more/One Less

Numerical patterns

- Change within 5 (one more/one less)

Y1

- Part part whole model
- Fact families
- Number bonds within 10
- Number bonds to 10
- Add numbers
- Subtraction - Find a part/take away and cross out/How many left?
- Add or subtract 1 or 2
- Add by counting on
- Number bonds to 20

Y2

- Number bonds to 10, 20, 100
- Add and subtract 1s
- Add by making 10
- Add three 1 digit numbers
- Add across a 10
- Subtract across a 10
- Subtract from a 10
- Subtract a 1 digit numbers from a 2 digit number
- 10 more 10 less
- To add and subtract 10s
- To add two 2-digit numbers
- Subtract two 2-digit numbers
- To complete mixed addition and subtraction
- Missing number problems

Y3

- Number bonds within 10
- Add and subtract 1,s 10s, 100s
- Spot the pattern
- Add 1s across a 10
- Add 10s across a 100
- Subtract 1s across a 10
- Subtract 10s across a 100
- Make connections
- Add two numbers
- Subtract two numbers
- Add 2-digit and 3-digit numbers
- Subtract a 2-digit number from a 3-digit number
- Complements to 100
- Estimate answers
- Inverse operations

Y4

- To add and subtract 1s,10s, 100s and 1000s
- To add two 4 digit numbers
- Subtract two 4 digit numbers
- Efficient subtraction
- Estimate answers

Y5

- To use the column method for addition and subtraction and apply this to numbers with more than four digits.
- To explore the structure of a calculation in order to compare calculations.
- To apply knowledge of inverse operations to solve missing number calculations by comparing calculations.
- To use rounding to estimate answers to additions and subtractions.
- To use inverse operations (addition and subtraction) to check the accuracy of calculations and find unknown numbers.
- To apply addition and subtraction strategies to solve addition and subtraction problems with more than one step.

Y6

- To add and subtract using the formal column method.
- To solve addition and subtraction multi step problems, deciding which operations and methods to use and why.
- To know the priority of the order of operations in a calculation.
- To solve problems involving addition, subtraction, multiplication and division.

Multiplication and Division			
N	• Sharing	**R**	• Numerical Patterns (halving/doubling/odds and evens) • Sorting into 2 groups - Halving • Doubling/ Odds and Evens • Sharing
Y1	• Count in 2s,5s and 10s • Doubles/Make doubles • Recognise equal groups • Add arrays/Make arrays • Make equal groups - grouping and sharing	**Y2**	• Recognise and make equal groups • Add equal groups • Introduce multiplication symbol • To understand multiplication sentences • To use arrays • To make equal groups (grouping & sharing) • To recall and use multiplication and division facts for the 2,5 & 10 multiplication table. • To recognise odd and even numbers. • To double and halve numbers • Bar modelling - Sharing & Grouping
Y3	• Multiplication – equal groups • Use arrays • Sharing and grouping • Multiply and divide by 3, 4 & 8 • Multiples of 10 • Related calculations • Multiply a 2-digit number by a 1-digit number • Link multiplication and division • Divide a 2-digit number by a 1-digit number	**Y4**	• Multiply by 1 and 0 • Divide a number by 1 and itself • Factor pairs • Multiply three numbers • Multiply and divide by 10/100 • Related facts - multiplication and division • Informal written methods for multiplication • Multiply a 2 or 3 digit number by a 1 digit number • Divide a 2 or 3 digit number by a 1 digit number • Multiply and divide by 3,6,9,7, 11, 12
Y5	• To identify and explore multiples. • To identify and explore common multiples of any pair of numbers. • To explore the relationship between multiplication and division: factors. • To compare factors to identify common factors. • To multiply and divide by 10, 100 and 1,000. • To apply my knowledge of factors to identify prime numbers. • To calculate square and cubed numbers. • To multiply up to a 4-digit number by a 1-digit number. • To multiply a 2, 3 or 4 digit number by a 2-digit number • To divide using the formal (bus-stop) method of short division • To divide with remainders (formal method). • To solve problems with multiplication and division. • To apply my knowledge of factors to identify prime numbers.		
Y6	• To identify common factors and common multiples. • To multiply four digits by 2-digits using the formal written method of long multiplication. • To divide numbers up to four digits by a 1-digit number using the formal written method of short division. • To divide numbers up to four digits by a 2-digit whole number using the formal written method of long division. • To know the priority of the order of operations in a calculation. • To solve problems involving addition, subtraction, multiplication and division. • To multiply and divide by 10, 100 and 1000.		

Fractions

Y1

- Recognise & find half of an object, shape or quantity.
- Recognise & find quarter of an object, shape or quantity.

Y2

- To introduce the terms part and whole.
- To understand equal and unequal parts.
- To recognise and find a half
- To recognise and find a quarter
- To recognise and find a third
- To find the whole
- To find a unit and non unit fraction of a shape.
- To find a unit fraction of an amount.
- To recognise the equivalence of a half and two quarters
- To recognise and find three quarters
- To count in fractions to a whole

Y3

- Understand the denominators of unit fractions
- Compare and order unit fractions
- Understand the numerators of non-unit fractions
- Understand the whole
- Compare and order non-unit fractions
- Fractions and scales
- Fractions on a number line
- Count in fractions on a number line
- Equivalent fractions on a number line
- Equivalent fractions as bar models
- Add and subtract fractions
- Unit fractions and non-unit fractions of a set of objects

Y4

- To understand the whole
- Count beyond 1
- Partition a mixed number
- Number line with mixed numbers
- Compare and order mixed numbers
- Understand improper fractions
- Convert mixed numbers to improper fractions
- Convert improper fractions to mixed numbers
- Equivalent fractions on a number line
- Equivalent fraction families
- Add two or more fractions
- Add fractions and mixed numbers
- Subtract two fractions
- Subtract from whole numbers
- Subtract from mixed numbers
- Tenths as fractions and decimals
- Tenths on a place value chart and number line
- Divide a 1 or 2 digit number by 10 and 100
- Hundredths as fractions and decimals
- Hundredths on a place value chart
- Make a whole with tenths/hundredths
- Partition decimals
- Compare and order decimals
- Round to the nearest whole number
- Halve and quarters as decimals

Y5

- To find fractions equivalent to a unit fraction/ non-unit fraction
- To convert improper fractions to mixed numbers.
- .To recognise the place value of numbers up to 2 decimal places.
- To explore equivalent fractions and decimals (hundredths, (halves, quarters, fifths and tenths).
- To convert mixed numbers to improper fractions.
- To compare and order fractions
- To explore thousandths as fractions and decimals
- To order and compare decimals
- To add and subtract fractions
- To add and subtract mixed numbers.
- To add and subtract two mixed numbers.
- To order and compare decimals with up to 3 decimal places
- To round to the nearest whole number/1 decimal place
- To multiply a unit/non unit fraction by an integer.
- To multiply a mixed number by an integer.
- To calculate the fraction of a quantity/amount.
- To find the whole, using a fraction of an amount.
- To use fractions as operators.
- To recognise percentages as fractions/decimals.
- To recognise equivalent fractions, decimals and percentages.
- To add and subtract decimals
- To recognise decimal sequences.
- To multiply and divide by 10, 100 and 1,000.
- Multiply and divide decimals - missing values.

Y6

- To use my knowledge of common factors to simplify fractions.
- To use my knowledge of common multiples to make equivalent fractions.
- To compare and order fractions
- To add and subtract fractions.
- To add and subtract fractions with mixed numbers.
- To multiply proper fractions by integers and fractions
- To divide proper fractions by integers and fractions
- To identify the value of each digit in numbers up to three decimal places.
- To round decimals to the nearest integer, tenth and hundredth.
- To add and subtract decimals
- To multiply 1 digit numbers with up to two decimal places by whole numbers.
- To divide decimals by integers
- To use a fraction as division to calculate decimal/fraction equivalents.
- To understand fractions to percentage equivalents.
- To order fractions, decimals and percentages.
- To use equivalences between fractions, decimals and percentages in different contexts.
- To calculate percentage of an amount
- To calculate the whole number from a given percentage.
- To solve problems which require answers to be rounded to specified degrees of accuracy.

Measurement

N	• Big, small-objects • Comparing length • Bigger/ longer, smaller objects to compare • Full and empty • Sinking and floating • Heavy and light • Make comparison between objects relating to size,length and capacity • Recall a sequence of events using words such as first/next	**R**	• Measure (Length, height and weight) • Measure (volume and capacity) • Time (my day)
Y1	• Heavier and lighter • Compare and measure mass • Full and empty • Measure and compare capacity • Compare lengths and heights. • Measure length using objects/centimetres • Time- Before and after • Days of the week • Months of the year • Recognising coins and notes • Count in coins • Hours,minutes, seconds • Tell the time to the hour/half hour	**Y2**	• Measure in centimetres and Metres • Compare and order lengths and heights • Compare mass • Measure in grams and kilograms • To count money in pence and pounds • To make the same amount of money • Compare volume and capacity • Measure in millilitres and litres • Temperature • O clock and half past, Quarter past and Quarter to • Tell the time past the hour and to the hour • Tell the time to 5 minutes • Minutes in an hour/ Hours in a day • Compare amounts of money • Calculate with money • Make a pound • Find change
Y3	• Metres, centimetres and millimetres • Roman numerals to 12 • Tell the time to 5 minutes & to the minute • Read time on a digital clock • Use am and pm • Years, months, days, hours • Hours, minutes & seconds– use start and end times & durations • Units of time • Equivalent lengths • Compare lengths • Add and subtract lengths • Measure and calculate perimeter • Use scales • Measure mass in grams/kilograms and gram • Equivalent masses (kilograms and grams) • Compare mass • Measure capacity and volume in litres and millilitres • Equivalent capacities and volumes (litres and millilitres) • Convert pounds and pence • Add and subtract money • Find change	**Y4**	• To measure in KM and M • To understand equivalent lengths • To find perimeter by counting • square lengths around rectangles and squares drawn on grids. • To find the perimeter of rectangles and rectilinear shapes • Find missing lengths in rectilinear shapes • Years, months, weeks and days • Perimeter of regular polygons • Perimeter of polygons • Hours, minutes and seconds • Convert between analogue and digital times • Convert to the 24 hour clock • Convert from the 24 hour clock • Write money using decimals • Convert between pounds and pence • Compare amounts of money • Estimate with money • Calculate with money • Solve problems with money
Y5	• To convert between kilograms and kilometres. • To convert between millimetres and millitres. • To convert units of length. • To convert between metric and imperial units. • To measure volume using cubic centimetres. • To compare the volume of different shapes. • To estimate volumes of different objects. • To estimate the capacity of unknown containers. • To convert units of time.		
Y6	• To convert between standard units, converting measurements of length, mass, and volume from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places. • To convert between miles and kilometres. • To solve problems involving the calculation/ conversion of units of measure, using decimal notation up to 3 decimal places where appropriate. • To calculate the area and perimeter of rectangles and rectilinear shapes/ triangles/parallelograms • To calculate the volume of a shape by counting cubes. • To calculate the volume of a cuboid using a formula.		

Geometry - Shapes

N	• Shape of face for self portraits - Flat. Round. square/circle • 2D shape recognition square/circle/triangle • House building with bricks/shapes and combining to make new shapes- 6 squares make a rectangle. • 2D shapes-language - square/circle/triangle/rectangle • Using some mathematical language to talk about 2D and 3D shapes and choose items based on their shape for a child's purpose, triangle prism-roof, circles-wheels.	**R**	• Shape (3D and 2D shapes) • Space • Shape (composing and decomposing shapes)
Y1	• Recognise and name 3D shapes • Sort 3D shapes • Recognise and name 2D shapes • Sort 2D shapes • Patterns with shapes	**Y2**	• To recognise 2D & 3D shapes • To count sides and vertices on 2D shapes • To identify lines of symmetry on shapes. • To sort 2D shapes • Count faces on 3D shape • Count edges on 3D shapes • Count vertices on 3D shapes • Sort 3D shapes
Y3	• Turns and angles • Right angles • Compare angles • Measure and draw accurately • Horizontal and vertical lines • Parallel and perpendicular lines • Recognise and describe 2-D shapes • Draw polygons • Recognise and describe 3-D shapes • Make 3-D shapes	**Y4**	• To understand what area is • To find the area of rectilinear shapes by counting squares • To make rectilinear shapes using a • given number of squares • To compare the areas of rectilinear shapes • Triangles • Quadrilaterals • Polygons • Lines of symmetry
Y5	• To find the perimeter of rectangles by measuring and calculation. • To calculate the perimeter of rectilinear shapes. • To find the perimeter of polygons. • To use knowledge of perimeter to find missing sides. • To calculate the areas of rectangles (counting squares). • To calculate the area of compound shapes. • To apply my knowledge of counting squares to estimate the area of non-rectilinear shapes. • To explore, understand and use degrees. • To classify angles, by comparing them to right angles and straight lines. • To estimate the size of angles. • To measure angles up to 180 degrees, using a protractor. • To draw lines and angles accurately. • To calculate angles around a point. • To calculate angles on a straight line. • To measure lengths and angles in shapes • To identify lines of symmetry in a 2D shape. • To be able to complete reflections on horizontal and vertical lines (using a mirror and coordinate grids). • Regular and irregular polygons • 3-D shapes		
Y6	• To use a protractor to measure and draw angles. • To draw 2D shapes using given dimensions and angles. • To recognise and describe simple 3D shapes. • To make nets and build simple 3D shapes. • To calculate angles in a triangle and apply this knowledge to workout missing angles. • To calculate angles in a quadrilateral. • To calculate angles in a polygon. • To understand the terms radius, diameter and circumference and calculate the radius and diameter of circles.		

Geometry - Position and direction			
N	• Starting to understand positional words On, off, under, behind. • Look at different patterns, stripes, spotty, zigzag • Recognising simple ABAB patterns-Coloured stripes/paper • Describe a familiar route and location e.g. 'in front of' and 'behind', • Positional language understand and use -where is teddy(under, on, behind, infront) • Complete simple ABAB patterns and notice and correct an error. • Describe a familiar route - Routes and locations	**R**	• Exploring Patterns • Positional language (Space)
Y1	• Ordinal numbers	**Y2**	• Language of position • Describe movement and turns • Patterns - Turns • Patterns - 2D & 3D shapes
Y3	• Identify angles	**Y4**	• Understand angles as turns • Identify angles • Compare and order angles • Describe position using coordinates • Plot coordinates • Draw 2D shapes on a grid • Translate on a grid • Describe translation on a grid
Y5	• To read and plot coordinates on a grid. • To solve problems applying knowledge and understanding of coordinates. • To translate shapes on a squared and coordinate grid (translation). • To understand how coordinates change when points are translated (translation with coordinates)		
Y6	• To describe positions on the coordinate grid (all four quadrants). • To draw simple shapes on the coordinate plane. • Translate simple shapes on the coordinate plane. • Draw simple shapes on the coordinate plane and reflect them in the axes.		

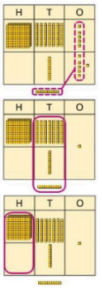
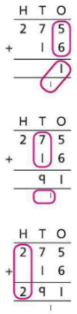
Statistics			
N		**R**	
Y1		**Y2**	• Make Tally charts • Tables • To identify simple information from a block diagram • To draw and interpret pictograms
Y3	• Interpret pictograms • Draw pictograms • Interpret bar charts • Draw bar charts • Collect and represent data • Two-way tables •	**Y4**	• Interpret charts • Comparisons, sum and difference • Interpret line graphs • Draw line graphs
Y5	• To draw line graphs. • To read and interpret line graphs. • To read and interpret tables. • To read and interpret two-way tables. • To read and interpret timetables.		
Y6	• To read and interpret line and pie graphs. • To solve problems using line and pie graphs. • To calculate the mean as an average. • To calculate and interpret the mean as an average. • Bar graphs		

Ratio & Proportion			
N		**R**	
Y1		**Y2**	
Y3			
Y4			
Y5			
Y6	• To (use my knowledge of fractions, word problems and multiplication facts) to calculate and use ratio and scale factors in a variety of contexts. • To interpret scales on plans and maps, using them to calculate actual size or distance. • To enlarge shapes by a given scale factor and identify whether two shapes are similar • To use calculations to deduce the scale factor.		

Algebra			
N		**R**	
Y1		**Y2**	
Y3		**Y4**	
Y5			
Y6	• To use simple formulae • To use simple formulae • To express missing number problems algebraically • To express missing number problems algebraically		

SKILLS PROGRESSION

The Power Maths calculation policy at West Drayton Academy provides a structured and inclusive approach to develop students' mathematical skills. By breaking down each skill into concrete, pictorial, and abstract stages, the policy accommodates different learning styles and abilities. In Reception, real-life examples are used as a starting point, followed by alternative representations to support their learning. This ensures that all students have the opportunity to effectively grasp mathematical concepts within a supportive learning environment. Below is an example of the calculation policy:

exchange required	*Use place value counters to represent 154 + 72.* *Use this to decide if any exchange is required.* *There are 5 tens and 7 tens. That is 12 tens so I will exchange.*	 *275 + 16 = 291* Note: In this example, a mental method may be more efficient. The numbers for the example calculation have been chosen to allow children to visualise the concept and see how the method relates to place value. Children should be encouraged at every stage to select methods that are accurate and efficient.	 *275 + 16 = 291*

INCLUSION

In mathematics, West Drayton Academy supports students by implementing the calculation policy and delivering instruction in a concrete, practical, and abstract manner. This incremental approach allows for skill development in small steps. For students on the SEN register who are not meeting their maths targets, a specific target will be added to their SEN record, and their teacher will provide personalised support in class. Additionally, if a student is working below the expected level in maths, they will receive work planned at a pre-key stage level to ensure they are working at an appropriate level for their needs.

Maths Standards 1 and 2

Standard 1						
	Objective	**Evidence (date)**				
	I can demonstrate an understanding of the concept of transaction (e.g. swapping 1 item for another)					
	I can distinguish between 'one' and 'lots' when shown a single object and a group of objects					
	I can demonstrate an understanding of the concept of 1:1 Correspondence (e.g. giving 1 cup to each child)					

Standard 2						
	Objective	**Evidence (date)**				
	I can identify the big or small object from a selection of two					
	I can sort objects according to given characteristics (e.g. small balls together, triangles and circles)					
	I can say the number names to 5 in the correct order					
	I can demonstrate an understanding of the concept of numbers up to 5 by putting together the right number of objects when asked,					
	I can copy and continue simple patterns using real-life materials					

IMPACT

We measure and monitor progress throughout the year using NTS assessments, times tables tests and arithmetic assessments. Children are assessed every half term. Those who are identified as making less than expected progress receive interventions in the form of a booster session to target specific gaps within their learning. In addition to this, teachers informally assess on a daily basis and address any gaps within the session and/or follow up lessons.

The maths Leader regularly monitors the teaching of maths to ensure all children receive quality first teaching to enable children to make expected or accelerated progress.

MTC

At the end of year, we administer the statutory Multiplication Tables Check to all Year 4 children.
In 2022/23, 39% of pupils met the expected standard in the Multiplication tables check in year 4. Children at WDA perform better than children nationally.