Maths Curriculum Overview

William Austin Infant School - Progression map for Mathematics.
Year R to Year 2.

Unit: Number and Place Value

	Reception	Year 1	Year 2
Counting.	***Children in Reception will be learning to:*** - 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 composition of numbers to 10. - Automatically recall number bonds for numbers 0-5 and some to 10. ***End of Year:*** ***Early Learning Goal - 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 double facts. ***Early Learning Goal - Numerical Patterns:*** - Verbally count beyond 20 recognising the pattern of the counting system.	- 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 - Given a number, identify one more and one less.	- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number - Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward. - Given a number, identify one more and one less

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	- Explore and represent pattern within numbers up to 10, including evens and odd, double facts and how quantities can be distribute equally		
Comparing Numbers.	***Children in Reception will be learning to:*** - Compare numbers - using the vocabulary 'more than', 'less than', 'fewer', 'the same as', 'equal to'. ***End of Year:*** ***Early Learning Goal - Numerical Patterns:*** - Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	- Use the language of: equal to, more than, less than (fewer), most, least	- Compare and order numbers from 0 up to 100; use <, > and = signs
Identifying, representing and estimating numbers.		- Identify and represent numbers using objects and pictorial representations including the number line.	- Identify, represent and estimate numbers using different representations, including the number line.
Reading and Writing Numbers.		- Read and write numbers from 1 to 20 in numerals and words. (Progression onto within 100 throughout the year but NC statement reflects 20).	- Read and write numbers to at least 50 and then onto 100 in numerals and in words.
Understanding Place Value.			- Recognise the place value of each digit in a two-digit number (tens, ones)

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Vocabulary Progression for Number and Place Value.

Number and Place Value Vocabulary	Zero Number One, two, three…. to twenty and beyond. Eleven Twelve Teen numbers - thirteen, fourteen… How many? None Count Count on Count back More Less, few Odd Even Pattern Pair Subitise Ones Tens Digit Place Order More, Larger, Bigger, Greater Fewer, fewest, smaller, smallest, least One more One less Compare Order First, second, third.	Same as EYFS, plus: Numbers to 100. Numerals Words One-digit number Two-digit number Teen and ty numbers Forwards Backwards Multiples Multiples of 2, 5 and 10. Equal to More than Less than Most Fewer Identify Represent Calculate One more, ten more One less, ten less	Same as EYFS and Year 1, plus: Ones, tens, hundreds Three-digit number Multiples of 2, **3**, 5 and 10. The same as Equivalent to

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Unit: Number - Addition and Subtraction			
	Reception	**Year 1**	**Year 2**
Number Bonds.	***Children in Reception will be learning to:*** - Automatically recall number bonds for numbers 0-5 and some to 10. End of Year: ***Early Learning Goal:*** 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.	- Represent and use number bonds and related subtraction facts within 20.	- Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
Mental Calculation.		- Add and subtract one-digit and two-digit numbers to 20, including zero - Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. (appears also in Written Methods)	- Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: o a two-digit number and ones o a two-digit number and tens o two two-digit numbers o adding three one-digit numbers - Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.
Written Methods		- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. (appears also in Mental Calculation)	

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Problem Solving		- 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 objects and pictorial representations, including those involving numbers, quantities and measures. ○ Applying their increasing knowledge of mental and written methods.
Inverse operations, estimating and checking answers.			- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

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Vocabulary Progression for Addition and Subtraction.

Addition and Subtraction Vocabulary	How many? None Count Count on add Addition plus Subtract Subtraction Count back Pattern Subitise Ones Tens Digit More, Larger, Bigger, Greater Less, Fewer, fewest One more One less Number Number line Single digit Answer Doubling Halving Sharing Numbers to twenty Check	Same as EYFS, plus: Numbers to 100. Numerals Words One-digit number Two-digit number Teen and ty numbers Forwards Backwards Equal to Same as More than Less than Most Fewer Identify Represent Calculate One more, ten more One less, ten less Altogether In total Plus Add Addition Subtract Subtraction Minus Difference How many left? Number Sentence	Same as EYFS and Year 1, plus: Ones Tens Hundreds Addend Sum Minuend Subtrahend Difference Inverse Commutative Missing number Estimate Number facts

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Unit: Number - Multiplication and Division.

	Reception	Year 1	Year 2
Facts	-Numerical patterns ○ Doubling ○ Halving and sharing ○ Odds and evens ***End of Year:*** ***Early Learning Goal: Numerical Patterns.*** - Verbally count beyond 2, recognising the pattern of the counting system. - Explore and represent pattern within numbers up to 10, including evens and odd, double facts and how quantities can be distribute equally.	- Count in multiples of twos, fives and tens (Linked to number and place value objective)	- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward. (Linked to number and place value objective) - Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
Mental Calculation.			- Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.
Written Methods			- Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs.
Problem Solving		- 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 contexts.

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Vocabulary Progression for Multiplication and Division.

Multiplication and Division Vocabulary	Sharing Doubling Halving Number pattern	Same as EYFS, plus: Odd numbers Even numbers Multiples Twos Fives Tens Number Repeated Addition Multiply Multiplication Times Divide Division Share Shared equally Groups of One step problem Answer Concrete object Pictorial representation Count Equals Write	Same as EYFS and Year 1, plus: Product Arrays Factor Lots of Groups of Multiplication facts Division facts Multiplication tables Calculate Two-step Problems

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Unit: Number - Fractions.			
	Reception	**Year 1**	**Year 2**
Recognising Fractions.		- Recognise, find and name a 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.
Equivalence			- Write simple fractions e.g. 1/2 of 6 = 3 and recognise the equivalence of 2/4 and 1/2.

Vocabulary Progression for Fractions.

Fractions Vocabulary		Same as EYFS, plus: Fraction Object Shape Quantity Equal parts One whole Half Quarter	Same as EYFS and Year 1, plus: Two-quarters Three-quarters Thirds Two thirds Equivalent Equivalence

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Unit: Measurement.			
	Reception	**Year 1**	**Year 2**

Comparing and Estimating.	***Children in Reception will be learning to:***
	
	- Compare length, weight and capacity.
		- Compare, describe and solve practical problems for:
		  o lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half]
		  o mass/weight [e.g. heavy/light, heavier than, lighter than]
		  o capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter]
		  o time [e.g. quicker, slower, earlier, later]
		- Sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening].
			- Compare and order lengths, mass, volume/capacity and record the results using G, q and =
			
			- Compare and sequence intervals of time.

Measuring and Calculating.		- Measure and begin to record the following:
		  o **lengths and heights**
		  o **mass/weight**
		  o **capacity and volume**
		  o **time** (hours, minutes, seconds**)**
			- 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.

Measuring and Calculating - **Money.**		- 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.

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			- **Solve simple problems** in a practical context involving addition and subtraction of money of the same unit, including giving change.
Telling the Time	- Talk about Day and Night - Order Key Events in their Daily Routine - Describe when events happen - Begin to Measure time by counting or using timers.	- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. - Recognise and use language relating to dates, including days of the week, weeks, months and years	- 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.

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Vocabulary Progression for Measure.

Measure Vocabulary	Measure, Measurement, Compare , Solve, Size, Length, Height, Long, Longer, Longest Short, Shorter, Shortest Small, Tall Weight Heavy, Heavier, Heaviest Light, Lighter, Lightest Capacity Full, Empty Object Time Now, Before, Soon, Later, Next Yesterday, Today, Tomorrow Day, Week, Weekend, Month, Year Days of the week Morning, Afternoon, Evening, Night Bedtime, playtime, lunchtime	Same as EYFS, plus: Compare, Estimate Measure Non-Standard Unit of Measure Tall, Taller, Tallest Weigh Balance Scales, Balancing Scales Balanced, Unbalanced Full, Empty, Half full, Half empty, Almost full, Almost empty Time Slower, Faster Calendar Date Clock Analogue Clock Clock Face Second, Minute, Hour Minute Hand, Hour Hand O'clock Half Past Pound (£) £1, £2, £5, £10, £20. Pence (p) 1p, 2p, 5p, 10p, 20p, 50p. Coin Note	Same as EYFS and Year 1, plus: Standard Unit of Measure Centimetre (cm), Metre (m) Ruler, Metre Stick, Measuring Tape Width Distance Mass Weighing Scales Gram (g) Kilogram (kg) Litre (l) Millilitre (ml) Volume Capacity Temperature Thermometer Degrees Celsius (°C) Quarter past, Quarter to Duration Intervals Change

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Unit: Geometry - Properties of Shapes.

	Reception	Year 1	Year 2

Identifying Shapes and their properties.	***Children in Reception will be learning to:***
	- Select, rotate and manipulate shapes in order to develop spatial reasoning skills.
	- Compose and decompose shapes- recognising a shape can have other shapes within it, just as numbers can.
	- Continue, copy and create repeating patterns.
		- Recognise and name common 2-D and 3-D shapes, including:
		  ○ 2-D shapes [e.g. rectangles (including squares), circles and triangles]
		  ○ 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres.
			- 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]

Drawing and constructing.	- Compose and decompose shapes- recognising a shape can have other shapes within it, just as numbers can.		
Comparing and classifying.		- Compare and sort common 2-D and 3-D shapes and everyday objects	- Compare and sort common 2-D and 3-D shapes and everyday objects

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Vocabulary Progression for Shape

Shape Vocabulary	Shape Group Sort, Similarities, Differences, Same, Different 2D 3D Flat Solid Square Triangle Circle Rectangle Side Corner Cylinder Cube Cuboid Cone Sphere Face Pattern	Same as EYFS, plus: Pentagon Hexagon Octagon Pyramid Prism Face Edge Vertex Vertices	Same as EYFS and Year 1, plus: Prism Right Angle Symmetrical Line of Symmetry Fold Mirror Line Reflection

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Unit: Geometry – Position and Direction.

	Reception	Year 1	Year 2
Position, direction and movement.		- Describe position, direction and movement, including half, quarter and three-quarter turns.	- 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)
Pattern	- Continue, copy and create repeating patterns.		- Order and arrange combinations of mathematical objects in patterns and sequences. *(Including those in different orientations,* in patterns and sequences).

Vocabulary Progression for Position and Direction

Position and Direction Vocabulary	Copy Create Repeating Pattern	Same as EYFS, plus: Describe Position Direction Movement Turn Turns Whole Half Quarter Three-quarter Left Right	Same as EYFS and Year 1, plus: Order Arrange Patterns Sequences Rotation Right angles Clockwise Anti-clockwise

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Unit: Statistics.

	Reception	Year 1	Year 2
Interpreting, constructing and presenting Data.			- Interpret and construct simple pictograms, tally charts, block diagrams and simple 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.

Vocabulary Progression for Statistics

Statistics Vocabulary			Year 2: Interpret Construct Pictograms Tally Charts Block Diagrams Table Ask Answer Questions Counting Category Sorting Quantity Totalling Comparing Categorical Data

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Vocabulary Progression for Reasoning and Problem Solving

Reasoning and Problem Solving Vocabulary	Listen Join in Think Imagine Start from Start with Point to Put Place Change Carry on What comes next? Find Choose Collect Make Build Tell me Explain Show me Count Solve Work out Check	(KS1) Same as EYFS, Plus: Arrange Rearrange Change Separate Continue Repeat Describe Describe the Rule/pattern Predict Record Trace Same Different Odd one out Reason Explain why How do you know? Always, Sometimes, Never Number facts Find all Another way A different way In a different order Investigate

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Adaptive Strategies.

Overall Strategies that support ALL pupils and learners:

- **Pre-teaching**
- **'Keep up, not catch up'** - Same day Interventions, support in lesson, adaptions made within a lesson/ to the sequence based on outcomes.
- **Key vocabulary** taught and explored.
- Use of **STEM sentences**.
- **CPA approach** to teaching and learning.
- **Carefully planned and sequenced small steps-** have an understanding that for some children this may need to be broken down even further into additional smaller steps.
  Small steps in planning as well as small steps of progression during the lesson.
- Having an awareness of **prior learning** and what needs to be mastered first before teaching new concepts.
- **Mixed ability groupings** and seating- flexible groupings.
- **Use of Talk**- Child led Talk rather than Teacher led. This to be planned carefully.
  Understanding the **power of peer support** is essential.
- **Use of manipulatives and concrete resources** in **all lessons** for **ALL learners**.
  Display **multiple representations** to support conceptual understanding.
- Use of **Questioning**
- **Support given by Class Teacher and Class Teaching Assistant**
- **Explicit, precise and clear instructions**.
- **Model learning tasks** and **provide scaffolds** to support initially and then reducing these throughout progression of the lesson/unit.
  Adding in additional scaffolds during the lesson when and where required.
- Allow **opportunities for practice.**
- Carefully thought out and planned strategies for recording- is formal recording always necessary/needed?
- Before teaching a lesson teachers will **anticipate misconceptions and barriers** to learning that could arise during the lesson and have resources/strategies available ready to overcome and address these.
- Based on outcomes from lessons add additional small steps, continue to work on a small step until children have mastered the concept before rushing through the curriculum.
- **Formative and summative assessments** can be used to inform **in-the-moment adaptations and future planning** of maths lesson- questioning, use of hinge questions, mini-whiteboard work etc.
- Creating a **positive and supportive learning environment**- having **high expectations** for **all** learners.

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Area of SEN: Communication and Interaction		
Barrier	**Adjustment**	**Resources**
Difficulty with attention	○ Making jottings/writing each step ○ Independent activity during input then have task explained 1:1 ○ Target amount of work to complete ○ Check ins during input and tasks ○ Avoid overload of input and instructions - broken down ○ Use of specific direct language	
Difficulty verbalising ideas	○ Give thinking time ○ Allow oral rehearsal before sharing with class ○ Allow children to script answers ○ Give alternative ways of sharing ideas for some	
Reluctance to work in pairs / with others	○ Allow written explanations instead of telling partner ○ Structured roles for members of group	
Retention of previously taught concepts	○ Avoid overload of input and instructions - broken down ○ Use of specific direct language ○ Pre teaching / reminding ○ Use of maths jotters to reference prior learning ○ Reference working wall ○ Use of prompts and resources to free up working memory ○ Multiple examples of new concepts provided ○ Break down activities into small steps	○ Adult support ○ Maths jotters ○ Working wall, sugar paper ○ Multiplication grid, prompts, etc.
Understanding concepts	○ Use of CPA approach to anchor learning ○ Kinaesthetic and visual learning	○ Concrete and pictorial resources

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Area of SEN: Social, Emotional and Mental Health		
Barrier	**Adjustment**	**Resources**
Developing independence	○ Scaffolded activities where support (adult and/or scaffolding within task) is gradually removed.	○ Adult support. Adapted activities
Lack of confidence / awareness of working at level below peers / not feeling included	○ Incorporate open-ended questions ○ Differentiate and target questions ○ Work has gradual curve of challenge allowing children to develop confidence gradually	
Need for constant reassurance	○ Paired/group work allows opportunities for all children to share their answer with someone	
Area of SEN: Sensory and / or Physical Need		
Barrier	**Adjustment**	**Resources**
Struggle with transition and change	○ Routines consistent across school so can be learnt early on and predictable ○ Give children warnings before moving to next task/activity	○ Consistent approach across school
Use of concrete resources in group	○ Work with a partner away from carpet/large group	○ Space, individual set of resources