Willow Primary Academy

Maths Curriculum



*“Without mathematics, there’s nothing you can do. Everything around you is mathematics. Everything about you is numbers.” – Shakuntala Devi*

**INTENT**

We want all pupils at Willow Primary Academy to experience the beauty, power and enjoyment of mathematics and develop a sense of curiosity about the subject. At Willow, we foster positive ‘can do’ attitudes, believe all children can achieve in mathematics, and teach for secure and deep understanding of mathematical concepts. We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems before acceleration through new content.

We aim for all pupils to:

* Become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
* Solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios.
* Reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.
* Have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately.

**IMPLEMENTATION**

Our Maths curriculum is delivered during daily Maths lessons and Maths fluency sessions. Maths lessons involve everyone learning together with appropriate support and challenge in place for all pupils to access the learning. They are used to deliver the set curriculum. Fluency sessions focus on Key Instant Recall Facts (KIRFs) and are deliberate practice sessions that allow time for children to practice key number facts and provide time for any intervention pupils may need to support them in securing understanding and making progress.

**Delivery**

* Maths lessons involve everyone learning together with appropriate support and challenge in place for all pupils to access the learning.
* Maths lessons focus on a manageable step of new learning based on NC statements.
* Teachers use MTPs to plan their lessons using one Key learning Point per lesson.
* Conceptual understanding is developed through concrete and pictorial representations.
* Reasoning skills are part of every daily lesson.
* High quality materials and tasks support learning and enable all to access maths learning.
* Teachers have access to Can Do Maths resources and White Rose (EYFS) to support planning.
* Key questions are used to open up the content to be studied.
* Assessment takes place during learning to address misconceptions, identify strengths and gaps and inform next steps.
* Fluency sessions are deliberate practice sessions that allow time for children to practice key skills.
* Fluency sessions can provide time for any intervention pupils may need to support them in securing understanding and making progress.

**Progression**

* In EYFS, White Rose is used to map out the learning for the year and then by term. This ensures that we cover all curriculum and early years development goals. The MTPs show the small steps of learning for each unit of work along with key vocabulary and sentence stems that the adults will be modelling and pupils will be encouraged to use.
* Pupils, regardless of their ability, in KS1 and KS2 are provided with opportunities to become more fluent in their learning, to reason mathematically and to solve a range of problems.
* All children are expected to be exposed to age related expectations and staff allow the time to plug gaps children may have in a particular area of mathematics.
* Staff understand what age-related expectations and mastering looks like for each objective and plan for how their children will get there.
* Maths concepts are carefully mapped out to ensure that they are revisited and reviewed throughout the year and across each Key Stage, each time building on prior learning.
* Lessons are carefully sequenced to develop coherent and comprehensive pathway.
* Each unit has clear overview outlining key concepts, knowledge, skills and vocabulary to be taught and evaluated to measure impact.
* Potential misconceptions are identified in advance and strategies to address them are planned for.
* Key questions are used to challenge thinking and develop learning for all pupils.
* Calculation and fraction, decimal and percentage documents show clear progression, building on prior learning and supporting pupils in linking concrete ideas to abstract concepts.
* Adaptive teaching is used in order to meet the needs of all pupils.

**IMPACT**

The Maths curriculum at Willow ensures that children are happy learners who talk enthusiastically about their learning and eager to further their progress in maths. Children celebrate their mistakes and learn from them and each other. Classes are enthused, engaged and challenged. The impact of ‘mastery’ and the emphasis on accurate use of mathematical language is evident during class/pupil discussions. Consistent teaching practices that are more effective for pupil progress long term are evident across school**.** These factors ensure that we are able to achieve the expected standards, with achievement at the end of KS2 in-line with that of the national average, as well an increasing proportion of children demonstrating greater depth, at the end of each phase. Pupils leave Willow being ready for their next stage of learning and are able to use maths in their everyday lives.

**Long Term Plan – 2022 – 23**

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| **Units Overview** | TERM 1 | TERM 2 | TERM 3 | TERM 4 | TERM 5 | TERM 6 |
| **EYFS** | **GETTING TO KNOW YOU**  Baseline assessments  **MATCH, SORT AND COMPARE**  Match objects  Match pictures and objects  Identify a set  Sort objects to a type  Explore sorting techniques  Create sorting rules  Compare amounts  **TALK ABOUT MEASURE AND PATTERNS**  Compare size  Compare mass  Compare capacity  Explore simple patterns  Copy and continue simple patterns  Create simple patterns  **KIRFs**  I can say numbers 0 to 5 and back from 5 to 0 in order | **IT’S ME 1, 2, 3**  Find 1, 2, 3  Subitise 1, 2, 3  Represent 1, 2, 3  1 more, 1 less  Composition of 1, 2, 3  **CIRCLES AND TRIANGLES**  Identify and name circles and triangles  Compare circles and triangles  Shapes in the environment  Describe position  **1, 2, 3, 4, 5**  Find 4 and 5  Subitise 4 and 5  Represent 4 and 5  1 more, 1 less  Composition of 4 and 5  Composition of 1-5  **SHAPES WITH 4 SIDES**  Identify and name shapes with 4 sides  Combines shapes with 4 sides  Shapes in the environment  My day and night  **KIRFs**  I can say numbers 0 to 10 and back from 10 to 0 in order | **ALIVE IN 5**  Introduce 0  Find 0-5  Subitise 0-5  Represent 0-5  1 more  1 less  Composition  Conceptual subitising to 5  **MASS AND CAPACITY**  Compare mass  Find a balance  Explore capacity  Compare capacity  **GROWING 6, 7, 8**  Find 6, 7, 8  Represent 6, 7, 8  1 more  1 less  Composition of 6, 7, 8  Make pairs – odd and even  Double to 8 (find a double)  Double to 8 (make a double)  Combine 2 groups  Conceptual subitising  **KIRFs**  I can partition numbers to 5 in two groups | **LENGTH, HIEGHT AND TIME**  Explore length  Compare length  Explore height  Compare height  Talk about time  Order and sequence time  **BUILIDNG 9 AND 10**  Find 9 and 10  Compare numbers to 10  Represent 9 and 10  Conceptual subitising to 10  1 more, 1 less  Composition to 10  Bonds to 10 (2 parts)  Make arrangements of 10  Bonds to 10 (3 parts)  Doubles to 10 (find a double)  Bonds to 10 (make a double)  Explore odd and even  **EXPLORING 3D SHAPES**  Recognise and name 3D shapes  Find 2D shapes within 3D shapes  Use 3D shapes for tasks  3D shapes in the environment  Identify more complex patterns  Copy and continue patterns  Patterns in the environment  **KIRFs**  I can partition numbers to 10 in two groups | **TO 20 ANY BEYOND**  Build numbers beyond 10 (10-13)  Continue patterns beyond 10 (10-13)  Build numbers beyond 10 (14-20)  Continue patterns beyond 10 (14-20)  Verbal counting beyond 20  Verbal counting patterns  **HOW MANY NOW?**  Add more  How many did I add?  Take away  How many did I take away?  **MANIPULATE, COMPOSE AND DECOMPOSE**  Select shapes for a purpose  Rotate shapes  Manipulate shapes  Explain shape arrangements  Compose shapes  Decompose shapes  Copy 2D shape patterns  Find 2D shapes within 3D shapes  **KIRFs**  I can count, read and write numbers to 20 | **SHARING AND GROUPING**  Explore sharing  Sharing  Explore grouping  Grouping  Even and odd sharing  Play with a build doubles  **VISUALISE, BUILD AND MAP**  Identify units of repeating patterns  Create own pattern rules  Explore own pattern rules  Replicate and build scenes and constructions  Visualise from different positions  Describe positions  Give instructions to build  Explore mapping  Represent maps with models  Create own maps from familiar places  Create own maps and plans from story situations  **MAKE CONNECTIONS**  Deepen understanding  Patterns and relationships  **KIRFs**  I can use physical representations to add and subtract two-single digit numbers and count on or back to find the answer |
| **Year 1** | - Number and place value  - Geometry – Properties of shapes  - Addition and subtraction | - Number and place value  - Addition and subtraction  - Geometry – Properties of shapes | - Addition and subtraction  - Measure - length | - Addition and subtraction  - Fractions | - Multiplication and division  - Measure – Time  - Geometry – position and direction | - Multiplication and division  - Measure – money  - Measure – mass and capacity |
| **Year 2** | - Number and place value  - Geometry – Properties of shapes  - Addition | - Subtraction  - Geometry – Properties of shapes  - Multiplication and division  - Geometry – position and direction | - Multiplication and division (Times tables)  - Measure – length and mass | - Fractions  - Measure – Time  - Measure – Money | - Statistics  - Measure – capacity and temperature  - SATS | - Number and place value  - Addition and subtraction  - Multiplication and division  - Geometry and measure  - Fractions |
| **Year 3** | - Number and place value  - Geometry – Properties of shapes | - Multiplication and division (Times tables)  - Addition and subtraction mental methods | - Fractions  - Addition and subtraction written methods | - Multiplication and division  - Measure – money | - Fractions – calculating  - Measure – time | - Measure – length, mass and capacity  - Geometry – angles  - Statistics |
| **Year 4** | - Number and place value  - Geometry – Properties of shapes | - Multiplication and division (Times tables)  - Addition and subtraction mental methods | - Multiplication and division (Times tables)  - Addition and subtraction written methods | - Multiplication and division  - Geometry – angles | - Decimals  - Fractions  - Measure – time and converting units | - Measure – perimeter and area  - Geometry – position and direction  - Statistics |
| **Year 5** | - Number and place value  - Decimals  - Geometry – Properties of shapes | - Addition and subtraction  - Multiplication and division – powers of 10  - Multiplication and division  - properties of number | - Multiplication and division – written methods  - Geometry – Position and direction | - Fractions, decimals and percentages  - Measure – length, mass and capacity | - Fractions – calculating  - Measure – time  - Geometry – position and direction | - Measure – area and volume  - Geometry – Properties of shapes  - Statistics |
| **Year 6** | - Number and place value  - Multiplication and division  - Geometry – position and direction | - Negative numbers  - Fractions, decimals and percentages  - Addition, subtraction, multiplication and division  - Geometry – Properties of shapes | - Fractions – calculating  - Geometry – Angles  - Statistics – handling data | - Ratio and proportion  - Measure – converting units  - Measure – area and volume | - Statistics – averages  - Algebra  - SATs week | - Fractions, decimals and percentages  - Addition, subtraction, multiplication and division  - Algebra |