



Willow Bank Junior School

Mathematics Policy

Non-statutory policy

Version	Last Review	Next Review	Committee	Comments
2.0	June 2016	June 2017	Learning & Teaching	Rewritten to reflect the new national curriculum.
2.0	June 2017	June 2018	Learning & Teaching	
2.0	June 2018	June 2020	Learning & Teaching	Review period extended to two years.
2.1	October 2020	October 2022	Learning & Teaching	No changes
2.2	January 2023	January 2025	Learning & Teaching	Reflecting changes to curriculum/core principles and homework
2.3	May 2024	May 2027		Reflecting small changes to the times table programme and the addition of peer maths leads.

The main principles of teaching mathematics at Willow Bank Junior School are for pupils to be:

- encouraged to engage enthusiastically and enjoy their mathematics learning;
- actively involved in experiencing the 2014 mathematics curriculum and Ready to Progress Criteria;
- encouraged to make links to real-life problems and see the benefit of learning maths.

Intent

At Willow Bank Junior School, we believe that children should experience the awe and wonder of mathematics as they learn to solve problems; develop ways of looking at patterns; discover efficient strategies and make links between the different areas of maths. In line with our whole-school curriculum intent, our maths curriculum provides children with a rich depth of knowledge, the skills to recall key facts as well as support to apply these facts independently in a range of situations. We intend for Willow Bank children to develop a love of maths, being curious, confident and unafraid to ask questions or make mistakes. We want children to be able to articulate their thoughts and ideas and be able to make connections between different mathematical concepts and skills.

We believe all children can achieve in mathematics, and teach for secure and deep understanding of concepts through fluency, reasoning and problem solving. The maths curriculum allows children to frequently return to previous learning which enable a rich depth of knowledge and understanding. We use mistakes and misconceptions as an essential part of learning and provide challenges through rich and varied problems. We encourage children to use approaches, which work for them, by equipping them with a range of efficient strategies and ensuring an understanding of them. Pupils should have a strong understanding of different concepts so that they are able to apply their knowledge to different situations and problems. At our school, the majority of children will be taught age related content and will be supported in understanding this through pre-teaching and corrective teaching when necessary. We aim to make maths an exciting and varied experience to enable children to flourish and achieve.

Aims

Through our teaching we aim for pupils to:

- Become fluent in the fundamentals of mathematics; including through varied and frequent practice with increasingly complex problems over time, so pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems.
- 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 mathematical learning 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.
- Develop a positive attitude to mathematics as an interesting and enjoyable subject.

- Develop independence of thought and flexibility of mind and where appropriate encourage children to use mental strategies to approach a problem in the first instance.
- Encourage persistence and produce sustained work.
- To develop the correct use of mathematical vocabulary.
- Be able to work both independently and co-operatively.

Teaching and Learning

The curriculum will be delivered through the implementation of 'The 2014 National Curriculum' and DfE Ready to Progress Criteria in both discrete lessons and through other subject areas where appropriate.

When planning, teachers take into consideration the following principles:

- High expectations for every child
- Previous skills and knowledge are the foundation for future development
- Classrooms and resources are organised to encourage independence and efficiency
- Lessons which have pace and rigour
- Lessons have clear learning outcomes
- Teachers have acquired a good personal knowledge and understanding of the material before commencing teaching.
- Learners of all abilities are supported to reach their potential through appropriate scaffolding and challenge.
- ICT should be used to support the maths programme wherever appropriate.

Mathematical concepts and skills are broken up across the different year groups and our calculation policy (see appendix 1) focuses on the CPA approach (concrete, pictorial and abstract). A concept is taught and will be revisited the following year, but in greater depth in order to build upon prior knowledge. We tailor our sequential plans to individual cohorts.

There are 4 Core Principles agreed by the whole school which should be apparent in every classroom for every mathematical concept.

- Key skills – This will be either times tables, Numeracy Ninjas (upper school) or Minion Maths (lower school).
- Last lesson; last week; last term – a starter that revisits previous learning (one question related to last lesson; one question related to topics learnt a week ago; one question related to an old topic from the previous term – in Autumn, term this question will be used to refer back to learning from the previous year group).
- Guided/episodic teaching featuring the following:
 - Stem sentences
 - Children will speak in full sentences, using displayed sentence starters as support.
 - Oral rehearsal

- Use of the CPA model with resources which are providing the appropriate structures
- Challenge language and questioning throughout
- Reasoning and deep understanding (contexts and representations of mathematics)
- Use of misconceptions to develop reasoning and understanding
- Independent practice, which is the same for all children (except SEN children who will have an adapted curriculum when necessary), with conceptual and procedural variation. During the independent practice, some children may require additional adult support or scaffolding through questioning and resources.

Challenge boxes will also be displayed on most teaching slides/SMART pages to deepen understanding.

Resources

The following resources are available to support teaching and learning:

- Medium Term Plans created specifically for Willow Bank Junior School include key vocabulary and sentence stems.
- Planpanion (formally known as Deepening Understanding) – main resource used for whole class teaching and individual activities
- I See Reasoning and I See Problem Solving
- Nrich
- Twinkl
- Numeracy Ninjas
- Times table Ninjas
- Maths Out Loud by Beam (Years 3-6)
- Talk It, Solve It by Beam (Years 1-2, 3-4 and 5-6)
- MyMaths
- Purple Mash

Planning

Progression is mapped out through the school using long term planning, which shows which topics are covered across each year group. Our medium and long term plans are developed through termly discussions with staff in each year group and the maths lead and follow the White Rose mastery approach combined with the DfE curriculum prioritisation guidance and Ready to Progress criteria.

- Teachers are expected to follow the Willow Bank Junior School Maths Curriculum yearly over views and medium term plans.
- Coverage – expectation of learning is to be high and all children are taught in mixed ability classes.

Assessment, recording and reporting

Formative assessment

Teachers are expected to use the following types of assessments to inform planning:

- AFL strategies should be an integral part of everyday teaching and learning and linked to the objectives and success criteria set for every lesson.
- Marking of classwork (refer to marking policy)
- Discussion, peer and self-assessment
- Probing questions

Summative assessment

- Frequent assessment of Ready to Progress Criteria
- Termly NTS tests (Y3,4,5)
- Termly SATs past papers (Y6)
- Year 6 KS2 SATs

We utilise summative assessments at the end of each topic (White Rose end of topic assessments and Ready to Progress assessments) and at the end of the three school terms we use NTS standardised assessment. An analysis is completed after each test to determine if any changes need to be made to long term planning.

The maths curriculum is monitored and evaluated across the school by:

- Lesson observations with specific feedback and targets conducted
- Learning walks
- “Book looks” with specific and purposeful criteria
- Pupil voice
- Termly data in INSIGHT
- Termly analysis of NTS tests
- Termly discussions with staff per year group.

Times tables

Children have regular personalised x table tests. The times tables are split into four stages; Stage 1 (2 x, 5, 10x), Stage 2 (4x, 8x, 3x), Stage 3 (6x, 9x 7x), Stage 4 (12x mixed), Stage 5 (multiplication/division by 10, 100, 1000), Stage 6 (multiples of 10, multiplying 2 digits by 5 and multiplying 2 digits by 9), Stage 7 (multiplying and dividing decimals), Stage 8 (multiplication/division of fractions) and Stage 9 (multiplying percentages). Children move through these stages at their own speed and once they have passed each times table three times, they move onto the next multiplication; however, if they reach a stage that has not been taught for their age yet (e.g. Stage 7), they will pause the challenge and complete mixed mental maths activities until they have been taught that skill in class. At the end of each stage, the child’s success is celebrated with a certificate in assembly. Times tables are further supported but the use of Times Table Rock Stars. Effort, progress and attainment within this are also rewarded termly.

Intervention & Inclusion

Every child has a right to quality first teaching. Individual needs are met within the class use a range of resources and scaffolding, supported by the class teacher and the TA team.

Number Stacks is used as a 1:1 and small group intervention. Some children also receive additional times-table support as part of a small group.

Each year, some Year 6 pupils are trained as maths leads and they subsequently support the learning of times tables in the younger years.

Home Learning

Children are expected to work on their times-tables each week. This will be through Times Table Rock Stars and/or times table practice and games with parents. Ideas for how to practise times tables at home are available on the school website.

ICT

All teachers should include ICT in their teaching programmes. ICT can enhance learning by providing stimulating material.

Cross curricular links

There are many possible links maths may have with other subjects. It is important that these links are made as it reinforces skills and makes them more relevant.

Equal Opportunities

The school will actively encourage all pupils to participate fully in all areas of school life.

Health and Safety

Pupil welfare and safety will, at all times, be of paramount importance to all staff. All resources will be checked for safe use and safeguarding procedures adhered to absolutely. The learning environment will be free from fear, a place where the child is unafraid to be wrong and where mistakes are seen as learning opportunities.