

	<p>North Wootton Academy Priory Lane North Wootton Kings Lynn Norfolk PE30 3PT</p>
<p>Name of policy:</p>	<p>Maths</p>
<p>Lead member of staff with responsibility for this policy:</p>	<p>Rebecca Bamber James Grimsby</p>
<p>Date of implementation:</p>	<p>18th January 2022</p>
<p>Details of dissemination:</p>	<p>The policy is available for all staff, visitors, pupils and parents on the school website.</p>
<p>Linked Policies:</p>	<p>Calculation Policy Curriculum Policy</p>
<p>Frequency for review:</p>	<p>Annually</p>

Maths Policy
North Wootton Academy

This policy should be read in conjunction with the Calculation Policy.

What is maths and why is it important?

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history’s most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject (National Curriculum, Mathematics Programme of Study, Department for Education, 2014).

Aims of the National Curriculum

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 nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Our intent is that all pupils are FRIPS: Fluent, Reasoning, Independent Problem Solvers

At North Wootton Academy, we aim to provide our pupils with a high-quality mathematics education that equips them with key skills and understanding of mathematical concepts and develops their ability to communicate their mathematical reasoning and become critical thinkers. As such, we aim to:

- develop a fluency in mathematical competency and skills and understanding across key concepts
- develop a fluency in our pupils' sense of number both in terms of formation and place value
- develop fluent mathematicians who are confident and able to apply their mathematical knowledge to a variety of problems
- develop pupils' ability to reason about mathematical concepts and make connections within the mathematics programme of study, the whole school curriculum, and between disciplines and the wider world
- develop independent problem solvers who take risks in their learning and challenge themselves
- foster an enjoyment of mathematics and create critical thinkers

Our scheme of work

As of September 2016, North Wootton Academy has been following a scheme of work designed to enable children to develop mastery of mathematics. This means that National Curriculum objectives have been grouped together into units lasting between 2 and 4 weeks. Each unit focuses on a small number of key objectives and teaching staff then develop these objectives and plan lessons which develop the fluency of these objectives, pupil's ability to reason about these concepts and the opportunity to deepen their understanding through engaging in rich problem-solving tasks to apply their learning.

As the school's calculation policy provides a core to the teaching of the subject and progression in ability, the expectations for each year group have been clearly articulated in the school's Calculation Policy. This is updated yearly and shared with staff annually.

The EMAT Mathematics Teaching Policy (as of Autumn 2018)

Through consultation with maths leaders in all the academies across the Trust, a practical and manageable teaching policy for all our Academies has been designed to support raising standards. This will support leaders in ensuring maths is taught effectively. The policy is to be seen as a non-negotiable by all staff in the trust.

- **EMAT maths philosophy**
We understand that maths is a skill necessary for the rest of our lives. Therefore, we believe that Fluency, Reasoning and Problem Solving go together, and as such are taught together.

Pupils are encouraged to solve maths problems using a variety of skills taught during maths lessons, as well as using cross-curricular opportunities too.

- **What we will typically see in and around the school**

We expect to see calculations and problem-solving opportunities around the school, either in displays or via verbal interaction with all staff. Classrooms will be rich with maths examples and carefully explained vocabulary that match the current focus. Pupils are taught to be independent learners using the learning environment to support them.

- **How do we track progress and attainment?**

We use a variety of assessment systems; for instance: Pixl, Pupil Asset. These will *support*, **not** replace, teacher assessment. Formative assessment is used to guide teaching focus; summative assessment is used to track progress and attainment over time.

- **Use of intervention, challenge and stretch**

Carefully identified intervention is used to support and challenge ALL pupils to ensure they achieve their full potential- this includes those pupils working at greater depth.

We focus on the following at the 'class level'

1. **Positive learning environment.** This includes up to date working walls (featuring relevant and current vocabulary), manipulative equipment available to use, focussed examples and positive learning behaviours
2. **Effective questioning.** This is to investigate deeper understanding and address misconceptions.
3. **Feedback.** This should be clear and effective, in line with the marking policy.
4. **Depth of understanding.** Striving to ensure pupils really understand a concept, not just follow a sequence or algorithm.
5. **Differentiation/challenge for all.** Stretching ALL pupils from their starting point.
6. **Accurate and effective assessment.** Analysis of strengths and weaknesses, so that effective next steps can be planned.
7. **Carefully identified Intervention.** Led by trained support staff and teachers.
8. **Planning** to include elements required to teach effective lessons allowing **ALL** pupils to access the learning. (The gold standard= vocabulary, progress for all, reason/ problem solving, misconceptions, conceptual understanding)

Assessment, Recording and Reporting

On a daily basis, marking and feedback is the most effective way of measuring impact. Live marking is used as much as possible with the children so that teachers are able to gain immediate feedback on the progress being made within a lesson and identify gaps in learning. These are then plugged through either immediate intervention in the lesson or during a short catch-up session soon after the lesson. Live marking also allows teachers to deepen pupils understanding through identifying when children are ready to move their learning on.

The ongoing assessments made by the class teacher are combined with formal PiXL testing scores to enable each teacher to make a summative assessment on the level at which the pupil is working for the objectives taught. Known as a Point in Time Assessment, a scale between 1 – 9 is recorded on Pupil Asset.

Within EYFS and Year 1, key milestones have been identified across the year and these are used to assess the children against and to again identify any gaps that need addressing.

Fluency is also tracked on a half termly basis to allow staff to identify quickly any ongoing areas of weakness that may need to be addressed in a more formal intervention setting for a short period of time and allows for vulnerable groups to be tracked carefully. In addition, multiplication tracking through the EMAT happens termly and on a half termly basis through Tackling Tables scheme.

All this information is used to make termly judgements about the working level of each pupil; these are then quality assured through a data validation process, in which books and teaching are reviewed together with assessments by the subject leader and discussed with each teacher to moderate assessment. All SEND, EAL and pupil premium champions track these cohorts specifically on a half-termly basis and conduct pupil progress reviews twice yearly. With regard to SEND, this may involve the reviewing of their progress on NAP steps as required for pupils 2 years below the expected level.

Monitoring and Evaluation

Mathematics is monitored by the Mathematics Coordinator: who will follow a rolling programme of monitoring, review and evaluation, to ensure that the subject is planned, taught, resourced and developed. Having identified priorities, the subject leader will construct an action plan which forms part of the Academy Development Plan. This will form the basis for monitoring and will identify how this is to be implemented. As the school is currently completing a Mathematics Mastery accreditation, the action plan is being completed in conjunction with a mentor from this programme.

The Subject Leader will be responsible for improving the standards of teaching and learning in Mathematics through:

- Taking the lead in policy development and initiating changes;
- Purchasing and organising resources;
- Keeping up to date with recent English developments
- Attending ongoing CPD;

Monitoring and evaluating:-

- Teaching and learning
- Pupil progress
- Assessment
- Provision of Mathematics
- The quality of the Learning Environment
- Work sampling
- Pupil interviews

The Governing Body

The Mathematics subject leader makes regular reports to school governance via termly data submissions and holds yearly meetings with the Academy council.

Inclusion

We aim for all children to participate in mainstream lessons in order to receive quality teaching on a daily basis. Work is differentiated accordingly and extra support is in place for children with SEND. Where it is felt necessary a pupil may be withdrawn from class to receive specialist help from school

devised intervention programmes these are recorded within the pupil's Individual Education Plan and linked to the North Wootton SEND Pathways, in addition to their existing mathematics provision - See SEND Policy

Parental/Community Involvement

We value parent involvement in children's development of mathematics and promote a home school partnership in the following ways:

- Sharing the school calculation policy
- Updates about methodology and new developments – e.g. Parents Curriculum Awareness Session, emails, newsletters and via website;
- Involvement in national/local events e.g. EMAT times table competition.

Professional Development

Training needs are identified as a result of whole school monitoring and evaluation, performance management and needs of children. These will be reflected in the Mathematics Action plan and School Development Plan.