Naunton Park Primary School Maths Policy

Updated: December 2022

Next review date: December 2023

Mathematics is an important creative discipline that helps us to understand and change the world. We want all pupils at Naunton Park Primary School to experience the power and enjoyment of mathematics and develop a sense of curiosity about the subject.

At Naunton Park, 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.

Intent

Our children are encouraged to become competent and independent mathematicians in classrooms where we 'like' both right and wrong answers in order to inspire risk taking. Therefore, mathematical ideas are discussed and reasoned and not just passively 'received' by pupils. In our classrooms, lessons are planned to encourage pupils to describe, explain, justify, convince and/or prove mathematical concepts.

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 non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- Have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately.

By the end of Key Stage 1 our pupils will learn to:

- develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools];
- develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money;
- know the number bonds to 20 and be precise in using and understanding place value (an emphasis on practice at this early stage will aid fluency);

- read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

By the end of Key Stage 2 our pupils will learn to:

- become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value (this should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers);
- develop their ability to solve a range of problems, including with simple fractions and decimal place value;
- draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them;
- use measuring instruments with accuracy and make connections between measure and number;
- read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Implementation

At Naunton Park Primary School, we recognise that in order for pupils to progress to deeper and more complex problems, they need to be confident and fluent across each yearly objective. We follow the Can Do scheme of learning to ensure effective curriculum coverage for the year complemented by other supplementary schemes of work e.g. NCETM.

The timetable for each day includes a daily maths lesson of 45 minutes for all year groups in Key Stage 1 and Key Stage 2 and as part of continuous provision in EYFS. Further to this, incorporated into the daily timetable, is a daily Maths on Track session – which supports deliberate practice (arithmetic), consolidation, pre-teach and/or immediate intervention in conjunction with 'Can Do' resources.

Each lesson focuses on a manageable step of new learning based on the NC statements.

Typical Lesson design:

1) Hook It: Giving an Introduction to the lesson without giving away the objective (straight away).

2) Teach It: Live modelling of the new learning with explicit use of potential misunderstandings

3) Practise It: All children practise together **Support & Challenge**

4) Do It: Up to 5 examples – 5 'What it is' or '3+2 'What it is/What it's also' **Challenge 1: Procedural Fluency**

5) Secure It: 1 or 2 Misunderstandings (True/false, Spot the mistake) **Challenge 2: Conceptual Understanding**

6) Deepen It: Apply understanding to solve new problems **Challenge 3: Mathematical Thinking**

7) Review It: Lesson Recap: Key Concept Statement and Key Vocabulary

MathsOnTrack (MOT) Meetings

Day 1 : Arithmetic

Day 2 : Arithmetic

Day 3 : Deliberate Practice: Past and Present

Day 4: Deliberate Practice: Past and Present

Day 5: Fact Friday

Within the Can Do scheme of learning, each National Curriculum objective is broken down into fluency, reasoning and problem solving; our teachers use the learning challenges to teach for mastery - an approach to extend and deepen the understanding of pupils within each year group.

In EYFS, provision follows Can Do within two formal maths lessons each week with a whole class introduction followed by two adult-focussed group alongside independent maths activities and child initiated learning.

The teaching of this subject is adapted as required to enable all children to access this area of the curriculum, including children with SEND and those who speak EAL, in line with their individual needs and through liaison with the school's Inclusion Lead. Wherever possible, children with SEND should remain with the whole class in order for them to learn from their peers and have access to first quality teaching. Currently, interventions are led by teaching partners through additional sessions based on learning from that morning or from previous days' learning.

Impact

The impact of children's progress and attainment in Maths is measured through:

- **Pupil conferencing**: pupils' enjoyment, interest, participation, confidence, preferences, opinions about lessons, resources and opportunities.

- **Observations**: pupils' learning; curriculum coverage; curriculum progression; teaching skills; teachers' skills audit.
- **Planning scrutiny**: curriculum coverage and progression against the NC requirements; teaching sequences; adaptation to pupils' needs; range of opportunities; range of experiences; cross-curricular links.
- **Resources**: audit resources available to children and teachers e.g. practical resources, supplementary 6schemes of work, online subscriptions.
- **Book/work scrutiny**: regular analysis of Maths books from each class (higher-attainers, average, and lower-attainers) to assess learning, attainment, progress, coverage, marking and feedback.
- **Learning Walks**: to gauge the ongoing experiences in learning.
- **Data**: analysis of termly data drops on Insight (learning objectives achieved, teacher assessments, (NFER Assessment); Baseline Tests in Reception; Key Stage 1 and 2 statutory test results; Y4 Times table's scores.

The impact of our curriculum is not always measured in the terms above – our learners leave Naunton Park Primary School equipped with the skills of an effective learner; content in challenging environments; and ready and excited for the next challenge in education.

Assessment

Summative assessment of mathematics in KS1 and 2 incorporates completing NFER assessment materials in Term 2 (Y2-Y6 pupils), Term 4 (Y1 pupils only) and Term 6 (Y1, Y3-Y5). Year 6 may supplement these assessments with previous National Curriculum Tests as necessary.

The data from these assessments is recorded on Insight (the school's on-line assessment system) after tests have been marked and standardised. This data is then used to inform Teacher Assessments for maths at the end of each term and inform subsequent planning. At the end of each even term, pupils are assessed according to whether they are Working Below, 0; Working Towards, 1; Working At the Expected Standard, 2; or are working at Greater Depth, 3. This information is shared with parents through a mid-year report and the child's annual end-of-year report as well as during parent consultations.

Following the summative assessments, any children in the lowest 20% of mathematicians for each class are monitored closely and provisions are established to ensure that any given area of need is appropriately supported: this could include specific interventions or My Plans for example.

Formative assessment by teachers takes place on an on-going basis to ensure progress and attainment against the National Curriculum objectives for each year group. Based on children's understanding and progress, teachers plan accordingly and identify next steps for pupils' learning. Teachers use this information, alongside data from summative assessments, to create their Teacher Assessment judgement, recorded on Insight, three times a year. Teachers'

formative record keeping may be requested by SLT and/or Subject Leaders when doing a work scrutiny.

Inclusion

All children receive quality first Maths teaching on a daily basis. In addition, where identified that pupils require targeted support to enable them to work towards age-appropriate objectives, intervention programmes are implemented. Teachers, Teaching Partners and the Inclusion Lead plan programmes together and monitor progress of these pupils.

There is a third wave of support for pupils who have a My Plan, My Plan Plus or EHCP in place, which is additional and different to the support that is part of usual classroom practice. Pupils who are more able and/or confident in Maths are challenged appropriately through our "Can Do" maths approach.

The needs of children with English as an Additional Language (EAL) is met through careful planning and additional support where appropriate. This is supported by our team of staff who regularly support pupils that speak EAL and the school's Inclusion Lead.

Staff Development

Teachers are expected to maintain excellent subject knowledge, keep up to date with developments in Mathematics and use current materials that are available in school or online.

Training needs are identified as a result of whole-school monitoring and evaluation, performance management and through the school's induction process; and these needs are reflected accordingly in the School Development Plan. The Maths team arrange for relevant advice and information, such as feedback from courses or CPD, to be disseminated to other staf members and/or parents and governors. Where necessary, the Maths team lead or organise school-based CPD training.

Monitoring and Evaluation

Having identified priorities within the Maths Action Plan and Whole-School Development Plan, the SLT and Maths team monitor this subject according to an annual cycle. Any form of monitoring activities clearly identify when, who and what is to be monitored and how this will take place e.g. classroom observation, work scrutiny, Learning Walks etc.

The Link Governor for Mathematics visits the school and meets with the Maths Team as per the Governors' Monitoring Schedule. During these visits and meetings, the Link Governor supports and challenges the Maths team, ensuring that the teaching and learning of Maths meets and exceed statutory requirements and that pupils' outcomes reflect the school's high expectations of challenge, attitudes to learning and progress.

Review

This policy is reviewed annually or, more often if needed according to the School Development Plan**.**