



Mathematics Policy

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Mathematics Policy

At TSSMAT we believe that mathematics equips the children with a powerful set of tools and develops an ability to calculate, reason and solve problems. It enables children to understand and appreciate relationships and patterns in both number and space in their everyday lives. We believe that maths should be purposeful and that children are made aware of its importance in real-life contexts.

Subject Aims

Mathematics is a core subject within the National Curriculum.

It is our aim to develop:

1. A growth mindset towards the subject of mathematics
2. A positive attitude towards mathematics
3. Learners who are resilient and embrace challenge
4. A secure foundation of number fluency from EYFS to Year 6
5. Competence and confidence with numbers and the number system and other mathematical knowledge, concepts and skills.
6. To develop mathematical understanding through practical tasks, enquiry and experiment
7. Mastery in mathematics- learners who can reason, think logically and work systematically to solve problems, both independently and with others.
8. Learners who can communicate using sophisticated mathematical language

Our Practice

Teachers' planning and organisation

The TSSMAT has adopted the White Rose Maths Hub programme of study to support staff with the teaching and learning of mathematics. The programme provides planning support and termly assessment materials for Year 1 up to Year 6. As well as a whole school plan for the academic year, each year group is provided with a termly overview and both week by week and lesson by lesson breakdowns. In addition to this whole school programme of study, teachers supplement lesson from a variety of different sources such as NCTEM.

It is understood that within a unit of work, the time spent on teaching a specific learning objective or set of learning objectives depends on the needs of the children in the class.

The structure of maths lessons may vary, depending on the nature of the topic and the activity planned. However, all children are taught the same objective at the same level. All maths lessons last approximately 50 minutes. During break time, the Class Teacher/TA will do a quick mark of the children's work. Any child that has misconceptions within the session will have an immediate intervention session for 15 minutes after break. All other children will be working upon a problem solving/reasoning activity based upon what they were learning before break.

Effective plenaries are only part-planned as misconceptions only arise during the teaching of the lesson. However, all plenaries refer to the learning outcome and the success criteria in a meaningful way, allowing the children time for self-assessment.

We ensure that across each term children are given a range of experiences in mathematics lessons, e.g. practical activities, group problem solving activities, individual group and whole class discussion activities and open and closed tasks. Children are taught a range of methods to calculate so they have the ability to check whether their chosen methods are appropriate, reliable and efficient.

A detailed calculation policy, based on the White Rose Maths Hubs programme of study, is used throughout the school to ensure continual and graduation progression of number and calculation skills.

Concrete, Pictorial, Abstract (CPA) Approach

At TSSMAT, children learn mathematics through the 'concrete, pictorial, abstract' approach. Children will first use physical objects to represent mathematical concepts before moving to pictorial representations and finally abstract representation. (Numerical symbols)

Teachers model different ways of representing solutions to a problem in order to develop children's conceptual variation and reasoning skills. Children should be encouraged to move between these different stages (sometimes returning to concrete or pictorial) in order to fully understand a mathematical concept.

Differentiation

Staff have high expectations of all children, irrespective of ability and encourage them to be successful and achieve their full potential. Our aim is to ensure challenge for all.

The differentiation of tasks is done in various ways:

- Open ended questioning and activities which allow more able children to offer more sophisticated mathematical responses.
- Stepped activities which can be accessed at different steps, supporting and challenging all.
- Recording e.g. allowing some children to give verbal responses and photographing their learning.
- Resourcing e.g. use of cubes, 100 squares, number lines and mirrors to support some children.
- Grouping according to ability so that the groups can be given different tasks when appropriate. Activities are based on the same theme.

Part of independent work often involves some focused, targeted group work from the teacher. However, groupings are fluid and flexible based on the children's performance in a previous lesson or the beginning of that particular lesson.

Where members of support staff are available, they are fully briefed before the lesson and use the same teaching methods modelled by the teacher to support individuals or groups. In some cases they may also model concepts to the whole class allowing the teacher to assess particular groups of children in more detail and identify their next steps.

Maths in EYFS

In the Early Years Foundation Stage, maths is taught holistically through play, based upon the children's interests and class topics. The Early Years team work in two ways to ensure coverage of all areas of maths is evident. Firstly, there will be carpet sessions where groups of children focus on particular topics, with this learning continuing with a couple of children at a time or in small groups. Secondly, the team will also

explore mathematical concepts through planning in the moment and seeking on the spot opportunities to teach maths. As the children progress through Early Years, they will learn to record their learning in more formal methods. This is so that the children are more prepared for the more formal learning that will take place in Year 1 and beyond.

Special educational needs

Children with SEN are normally taught within the daily mathematics lesson. When additional staff are available to support groups or individual children, they may withdraw small groups to use intervention materials at another point.

Within the daily mathematics lesson, teachers not only provide activities to support children who find mathematics difficult but also activities that provide appropriate challenges (e.g. more open-ended investigations and in depth reasoning tasks) for children who are high achievers in mathematics.

Equal opportunities

All children should have equal access to the curriculum, irrespective of particular circumstances such as race, background, gender and capability. In the daily mathematics lesson we ensure this by supporting children in a variety of ways: e.g. repeating instructions, emphasising key words or using picture clues.

Marking

All work is marked to show the children where they have succeeded and where errors have been made. Misconceptions are picked up within the lesson and immediate intervention is given to those children that need it. When appropriate the children can mark their own work with support and guidance from the teacher.

Assessment

Assessment is carried out at the end of each half term, however each class teacher will be carrying out their own on-going assessment of individuals or a group during mathematical tasks each day.

Mathematics can be assessed in a variety of ways:

1. Observations of children or group task
2. Discussion with children about their task
3. Work in books
4. Children`s own evaluation of their work

These assessments:

- Inform future planning
- Provide information about individuals or groups
- Provide summative information
- Contribute to each child`s record of achievement

These assessments are carried out throughout both Key Stages and are the responsibility of the class teacher with support from the Coordinator.

SATS tests are carried out at the end of Key Stage 1 in Year 2 and at the end of Key Stage 2 in Year 6. PUMA tests are also completed for Years 1, 2, 3, 4, 5 and 6 every term. Each half term, every year group is given a Building Block point, which takes into account their attainment within the objectives for their year group. See Assessment Policy for further details

Record Keeping

Medium term assessments focus on the most important aspects of Mathematics identified as Key Objectives. Each Year group has a record of whether each child has achieved the Key Objectives and when. It also helps to track quickly which pupils are in need of further assistance, and also to assess whether there is an objective, which it would be beneficial to cover again with the whole class or a smaller group of pupils.

The records will be up dated each half term.

Reporting

Parents are given the opportunity to discuss their child's progress on two official occasions and two further informal occasions but understand that the school's 'open door' policy enables them to address concerns throughout the year. Reports are completed during the summer term.

Teachers use the information gathered from their assessments to help them comment on individual children's progress.

Role of the subject leader

The Coordinator supports all the staff in Mathematics.

This can include:

- To take the lead in policy development
- To support colleagues
- To monitor and be accountable for progress in mathematics-this may be done through the scrutiny of work, observations and analysis of formal assessment data.
- To take responsibility for the choice, purchase and organisation of central resources for Mathematics, in consultation with colleagues.
- To liaise with other members of staff to form a coherent and progressive scheme of work which ensures both experience of and capability in mathematics.
- To be familiar with current thinking concerning the teaching of mathematics and to disseminate information to colleagues.