Tuition, Medical and Behaviour Support Service

Curriculum Policy
Mathematics

Adopted: February 2019
Next Review: February 2020
Responsibility: Charlotte Maclachlan
Upon entering the service a pupil or member of staff can expect the following:

Once in the TMBSS a pupil will be on a personal program. This program will however follow an appropriate scheme of work. Baseline assessment places a pupil on a ‘flightpath’ for tracking purposes. The scheme of work is primarily decided from baseline assessment, but at times it is also appropriate to consider teacher assessment and previous school input.

Schemes of work can be accessed in the ‘Maths Area’ and are also on the electronic ITP’s. These link to appropriate teacher manuals where more detailed lesson plans along with common misconceptions can be found. Links to problem solving tasks and cross-curricular work are also in the process of being uploaded to the electronic ITP’s.

Tracking data is input once a term into ‘4matrix’ for analysis. There is a termly assessment for Y9-11 provided by the Maths co-ordinator Evidence from this along with teacher assessment using bookwork and ITP’s inform the termly data given. ITP’s can inform teacher assessment by observing which colour code has the most ‘loa’s’ defined by a ‘✓’.

For Y7&8 termly data from Numeracy Ninja tests is used to submit an AWL which is then input into 4matrix. Bookwork can also be used to identify these targets. From this the Maths co-ordinator is able to see if a pupil is maintaining their flightpath.

Pupils that fall below expected progress from termly data analysis are followed up by the Maths co-ordinator using a ‘case study’ pro-forma. This is filled in by the Centre Manager and class teacher. The Maths co-ordinator is then expected to overview appropriate interventions for this pupil.

Intervention time is provided on a daily basis where it is needed by a pupil. Resources for Maths Interventions can be found in the ‘Interventions’ folder.

Y11 pupils are encouraged to complete a weekly past paper. This is done in both timed conditions and with teacher support with encouragement to complete at home. Pupils are given time to address errors individually and common errors are always addressed as a class.

There is a half-termly departmental meeting and Book/Work Scrutinies take place termly.

The Maths co-ordinator takes part in some lesson observations to assess the quality of teaching within the department.

Sharing of ideas and resources within the department is strongly encouraged as is teaching the ‘why’s’ not just the ‘how’s’. Due to our unique situation as a department the Maths co-ordinator has set up a new platform called ‘Mathstime’. This is available to view at any time but the Maths co-ordinator is available at a fixed time weekly for staff to be able to share ideas.
Aims

To foster an interest and enjoyment of mathematics and its use in the day to day world in which we live. This includes integrating SMSC and British Values whenever possible. A platform across the service is available to record this and staff are strongly encouraged to use it.

Confidence with mathematics supports pupils in numerous ways with living in modern society. Pupils need mathematical skills in order to successfully manage their everyday lives, e.g. shopping, budgeting and money management. Mathematical skills are important across the curriculum e.g. problem solving, data handling, time management, use of maps and charts, measuring and design. A growth mindset approach is encouraged within the department and many pupils enjoy mathematics and achieve well. Maths is a core skill, essential for access to employment opportunities and further education. Pupils may also have the opportunity to continue a personal interest in mathematics through Sixth Form and F.E. College courses.

Objectives

Across both Key Stages it is expected that pupils study the following assessment objectives:

- **Use and apply standard techniques**
  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, interpret and communicate mathematically**
  reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language

- **Solve problems within mathematics and in other contexts**
  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.

Methodology

The work needs to reflect the special educational needs, behavioural and medical needs of the pupils, and the varied lengths of time over which tuition is provided.

Pupils entering TMBSS will undergo a baseline assessment to establish pupils levels and where they have experienced an interruption in their maths education. The baseline assessment is the ‘Graded Arithmetic Test’ by Vernon and Miller. This focuses on key essential numeracy skills to enable access to all maths content. The test can then be used as a re-test prior to a first review to assess what progress has been made.

Particular learning needs will be taken into account, as will learning deficits caused by absence from education.
Pupils will be advised of appropriate examination opportunities and encouraged to work towards awards which will reflect their age and ability.

Pupils are given the opportunity to study:
- Using and applying mathematics
- Number and algebra
- Geometry and measure
- Handling data and Probability
- Ratio, Proportion and Rates of change

Since September 2015 GCSE pupils have been working from the new GCSE specification. Our department is following the AQA specification accredited by Ofqual.

Pupils will follow individual programmes of study dependent on their needs, gaps in knowledge and the time available.

**Planning**

Planning will be determined by the initial base-line tests and pupil progress during placement with TMBSS. In this respect, arrangements are quite flexible and groups may change according to personal and social issues, progress and prior learning within the topic. Historical factors often result in significant gaps in pupil's learning; therefore pupils will usually work on an individual programme designed to revise and reinforce previous learning, to cover gaps in learning, and to work towards examination at an appropriate level.

**Key Stage 3**

Since September 2013 National Curriculum Levels have not been compulsory and a new KS3 National Curriculum has been put in place along with KS3 schemes of work that the department is working from. These have been uploaded to the shared teacher area under ‘Maths’.

Due to content changes in the GCSE from September 2015 KS3 SOW will apply to Y7 & 8. Y9 pupils will follow a 3 year GCSE route plan except in the case of a pre-KS3 ability pupil where they would continue to follow the ‘working towards’ scheme of work.

At KS3 it is expected that pupils will move on to full-time education in either mainstream or special schools. The programmes of study will enable pupils to access the new National Curriculum at the appropriate level and in line with mainstream education.
Key Stage 4

At KS4 the majority of pupils will follow the AQA specification for the new GCSE Mathematics specification 8300. If a student is unable to access these qualifications then they will be entered for the new AQA Entry Level exam. This can also be used as a stepping stone in Year 10 with a view to working towards a Functional Skills qualification alongside a GCSE in Year 11. This will be a two year course for Y10’s and a 3 year course for Y9’s.

Planning will be consistent with the National Curriculum framework at KS3 and KS4, and may be designed to link to the pupil’s school programme when the pupil is likely to return to school.

Schemes of work at various levels are available from the Maths Co-ordinator and Education Centres and are also available on the shared teacher area under ‘Maths’.

Assessment

At KS3 pupils will be following an appropriate scheme of work. This will be ‘Working towards’, Developing, Secure or Exceeding depending on their baseline assessment. Within this framework each pupil is also placed on a ‘flightpath’. ‘Working Towards’ is pre-KS3 level and has a separate scheme of work. ‘Emerging’ and ‘Developing’ work from the ‘Developing’ scheme of work, whilst ‘Secure’ and ‘Exceeding’ work from their own schemes of work. They will be assessed termly on their numeracy skills within this scheme. This follows the ‘Numeracy Ninja’ framework and works towards ensuring all students are able to access all GCSE content when they start the GCSE course.

In KS4 Pupils will be advised as to the most appropriate level of award according to individual ability. Pupils will have access to Entry Level, Functional Skills and/or GCSE qualifications at either Foundation or Higher Tier level. This will be assessed from both their initial baseline, school information and teacher assessment. Pupils may be encouraged to take a qualification in Year 10, and to progress to a higher award in Year 11. Assessment has followed the AQA specification for GCSE from September 2015 and AQA Entry Level from September 2018.

Where pupils are identified as Gifted and Talented we ensure that they have access to specialist teaching and links to the Further Maths Support Programme.

Marking

We follow the TMBSS marking policy and this is scrutinised termly in departmental moderation meetings.
Resources

Key Stage 3
Pupils have access to core texts for all levels including a new for KS3 updated version of Collins ‘Maths Frameworking’, ‘Maths Connect’ Series, ‘Mathswise’ and ICT packages. All KS3 pupils also have access to a program of AT1 tasks. For pupils whose ability is lower than KS3 there is cross-phase support from the KS1/2 Maths co-ordinator alongside a ‘working towards’ scheme of work.

Key Stage 4
Pupils have access to all KS3 resources as well as the AQA recommended texts for GCSE. Entry level candidates have access to a large number of resources provided by AQA. Both GCSE and Entry Level materials can be accessed using links on the electronic ITP’s. All KS4 pupils have access to ICT packages available and AT1 tasks where appropriate.

Maths equipment is readily available to all pupils, and pupils have access to computers as needed.

ICT Packages
All staff are familiar with the e-safety policy and ensure that E-Safety is reinforced, when appropriate, in all teaching of Mathematics.
- Mathematics ‘OXBOX’ computer software package and assessment tool
- ‘MyMaths’
- ‘Mathsbox’
- TES KS3/4 Mathematics Resources
- Teachit Maths KS3/4 Resources

AT1 TASKS
- Bowland Maths Projects
- Practical Maths Investigations
- CAME tasks
- Nuffield Foundation tasks
- Further Maths Support Programme- Problem Solving booklets
- Problem Solving Folder in ‘Maths’ area

The above will be accessed via a half-termly problem solving task in the shared teacher area under ‘Maths’. The Maths co-ordinator has started work on linking the half-termly problem solving activities into the electronic ITP’s. Hovering over certain objectives gives a link to an appropriate problem solving task.

Literacy in the curriculum

All students have access to a mathematical dictionary during lessons. The use of mathematical word games such as ‘Taboo’, ‘hangman’, ‘top trumps’, ‘maths pictionary’ etc. are encouraged either as a starter or plenary to lessons. The Maths Co-ordinator is also disseminating a series of ‘Mathematical Stories’ to use as whole lessons at intervals during each term. These will be available in the shared teacher area under ‘Maths’.
Numeracy across the curriculum

We are all teachers of numeracy. All staff have a responsibility to promote the development of effective numeracy skills and an understanding and appreciation of the importance of numeracy.

Our aim is to ensure that students receive positive messages about numeracy when used across the curriculum.

Strategies (Teachers of subjects other than Mathematics)

- Ensure teachers are familiar with mathematical language, notation, conventions and techniques relating to their own subject, and encourage students to use these correctly.
- Provide information and resources to staff relating to when particular numeracy skills will be required in their particular subject.

Staff within the Maths department also teach a wide range of other subject areas. Within TMBSS, therefore, there is a consistent approach to the teaching of numerical skills across the curriculum. The Maths co-ordinator has put a wide range of subject specific numeracy resources in the Maths area on the teacher shared server for all staff to access along with ‘Numeracy Display Mats’ available in each class focusing on key essential numeracy skills.

The department uses ‘Numeracy Ninjas’ across the service and it is now integrated as part of our AWL for KS3. Research provided by ‘Numeracy Ninja’s’ backs up the impact that we have seen with our own pupils. This programme has been developed to specifically target key numeracy skills that then enable pupils to access the wider content of the GCSE specification.