



Tuition, Medical and Behaviour Support Service

Curriculum Policy Science

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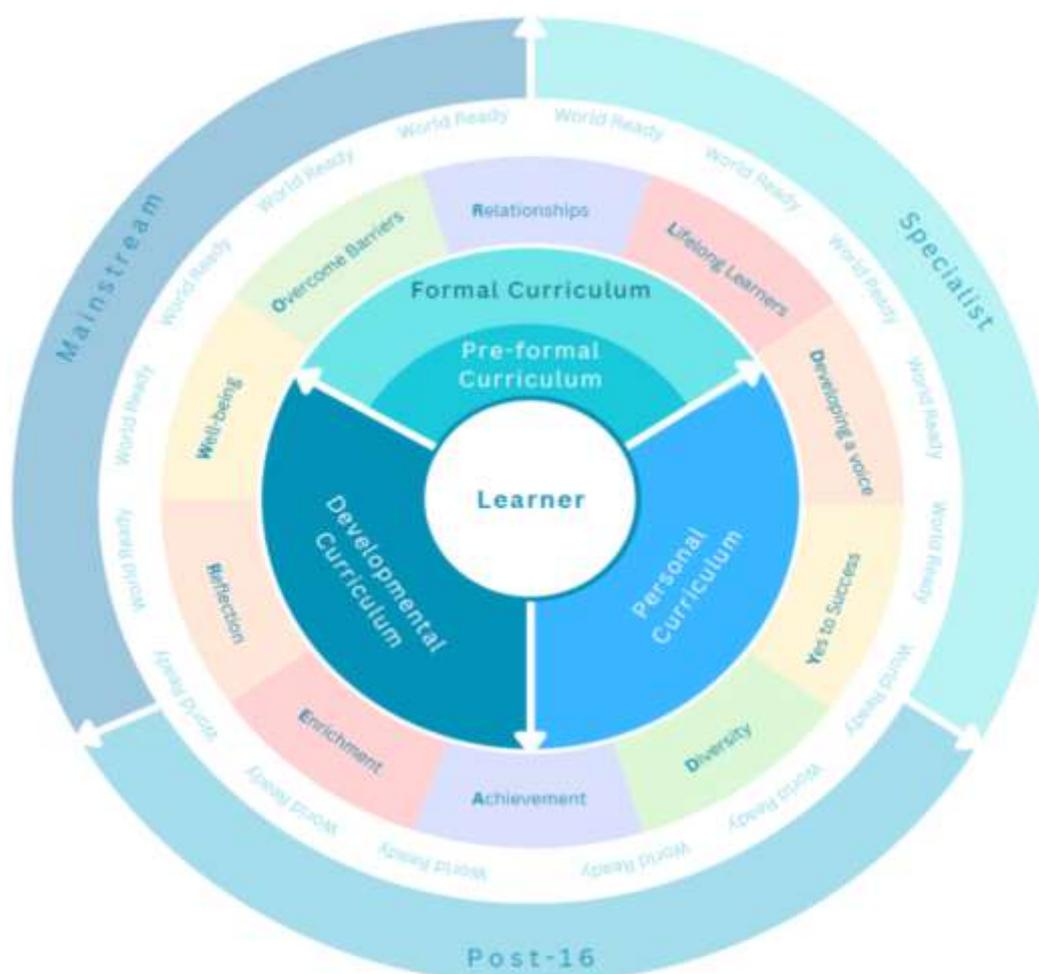
Science at TMBSS

Science is a core curriculum area and is delivered at all TMBSS centres across Shropshire. The Science curriculum at TMBSS supports development in scientific knowledge, practical skills, and conceptual understanding with a focus on the enquiry skills needed for working scientifically.

Science forms part of the formal curriculum as depicted in the TMBSS curriculum model below.

TMBSS Curriculum Model

The students who join TMBSS are at different stages of their own personal journey. A journey that has often been difficult, traumatic, and unconventional. Our curriculum content choices and sequencing are designed to allow our transient and dynamic student population to re-engage with education and achieve their own next steps to success. The TMBSS curriculum can be represented by the model below:



Each aspect of the 'World Ready' vision represents the primary aims of our curriculum model (Well-being, Overcoming barriers, Relationships and Life-long learners and Developing a voice) and the tools and approaches we use to achieve them (Reflection, Enrichment, Achievement, Diversity and Yes to success)

The application of the World Ready vision is highly bespoke to the needs of the individual and encompasses the formal, personal and developmental aspects of our curriculum.

For Health and Safety reasons, aspects of practical science requiring laboratory facilities may not be offered in the home or hospital settings, however, practical science is taught in all Education Centres. All strands of the science curriculum are taught so that students have the opportunity to access chemistry, biology, and physics content.

As students are unlikely to attend for full academic years and have a wide range of ages and ability, it is not always possible to cover the full breadth of the National Curriculum.

The study of science gives students an opportunity to understand about their own health and lifestyle through human biology. They learn about safety when using a variety of equipment and chemicals, and about the effects of human activity on the environment. Science provides a basis for understanding of processes in a wide range of industries.

Science links closely to the development of literacy and numeracy skills, including speaking and listening, and the production of precise and accurate reports. Science supports Literacy across the Curriculum in line with whole service policy.

Students learn and develop investigative skills. These transferable skills include devising and investigating testable questions, identifying and controlling variables, analysing, interpreting and evaluating data for accuracy, reliability and validity when assessing material from different sources.

Aims

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- Students are equipped with the scientific knowledge required to understand the uses and implications of science, becoming World Ready, today and for the future.
- Raise awareness of the range of careers that are available following the study of Science.

Objectives

Students will learn to:

- Carry out simple investigations and experiments to develop the skills of research and evaluation as in 'Working scientifically'.
- Be able to use scientific terms.
- Develop science skills e.g. observation, measurement, investigation.
- Understand scientific processes and how they impinge on daily life.

Planning

Resources within the Education Centres may limit the range of practical science which can be taught, but where possible lessons include a practical component. The sequencing of the science curriculum is flexible to cope with the transient and dynamic nature of the TMBSS student cohort. However, it remains ambitious, with an intent to meet the requirements of the National Curriculum for students who have experienced extended gaps in their education.

The structured nature of the National Curriculum guidance for science makes student progress tracking relatively straightforward. Staff adhere as closely as possible to the national sequence of the schemes of work, to facilitate the effective transition of students to new educational provisions.

KS3 SCIENCE

At KS3 most students follow a core AQA Big ideas science programme that is taught using some of the activate science resources. Practical lessons allow students to identify and use the range of enquiry skills that are needed to work scientifically.

Where students are not yet ready or able to access the core science program, a science pre-formal curriculum has been developed. The pre-formal curriculum promotes students' engagement by allowing them to experience and enjoy science as a relevant and exciting subject by engaging in practical enquiry skill-based learning.

Many TMBSS students have had restricted access to practical science lessons. To prevent this becoming a barrier to their future progress in GCSE science, the 10 identified practical science competencies are included in the KS3 SOL. Bronze, Silver and Gold certificates are awarded for completion of the skills.

KS4 SCIENCE

At KS4, the majority of students study the AQA GCSE Biology or Combined science course. Students with a particular interest in science or a desire to continue at A level, have the opportunity to study GCSE single science qualifications in Chemistry, Biology and Physics, with the opportunity to obtain GCSE qualifications in all three sciences or to focus on 1 or 2 specific sciences.

All students are supported to transition between education settings with minimum disruption to their academic progress and it is the aim of the department to enter all eligible students for science qualifications at GCSE level at the appropriate time.

An entry level qualification in science will be offered to all KS4 students, but there is still an expectation that all year 11 students will be entered for at least one science GCSE.

Where possible STEM activities are included across KS3 and KS4 to increase engagement, promote scientific enquiry skills and increase awareness of potential career opportunities.

Advice on the curriculum is available from the Co-ordinator, subject specialists and Education Centres.

Assessment

At KS3, students can be assessed as appropriate upon completion of the scheduled topics within the AQA Big ideas curriculum.

At KS4 termly progress data is based on teacher assessed GCSE levels.

Both KS3 and KS4 termly progress data is reported to the Assessment coordinator for recording on the 4Matrix data collection program.

At KS4 a programme of practical tasks and experiments is also covered, in line with the requirements for GCSE, and these core practical tasks are set by each examination board – TMBSS is currently using AQA examination board .

Students will be taught according to the examination syllabus. Teachers should refer to the appropriate examination specification and consult the Co-ordinator for more information.

Gifted and talented students may have the opportunity to access the triple science programme, or if they have a particular strength in a particular strand of science, they may be guided toward taking one of the separate science qualifications.

Resources

KS3

AQA Activate Science 1,2, & 3

KS4

AQA student textbooks (GCSE 1-9), and electronic resources for support.
CGP revision and exam practice guides

Teacher's Resources, student books and electronic resources are continually added to, for support and are available throughout TMBSS.