Midsomer Norton Schools Partnership

Buckler's Mead Academy

Maths Curriculum: Intent, Implementation and Impact 2022-2023

INTENT – What we teach and why

At Buckler's Mead we have:

- a higher proportion of disadvantaged students than elsewhere in the MNSP (and SW)
- some students who join with negative experiences of Maths from KS2
- some students with low aspirations for achievement in Mathematics at secondary school and in future college courses and careers
- some students with aspirations that are limited by cultural stereotypes for both girls and boys

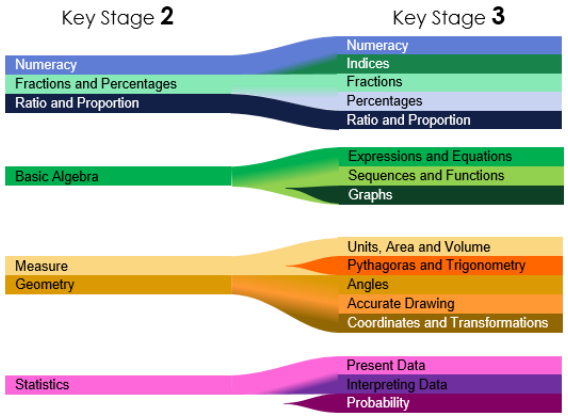
To address the challenges of this context we intend to:

- provide targeted support for our most vulnerable
- teach interesting and engaging lessons
- demonstrate a passion for mathematics and lead by example
- extend opportunity to all and encourage full participation regardless of barriers
- encourage students to see mathematics as a subject that provides extensive and valuable life opportunities and is the subject that provides the problem solving and thinking skills needed in life
- share the mathematical achievements of both men and women in history as well as those from other cultures
- share the mathematical achievements of our students on a monthly basis. This will be evident for all to see

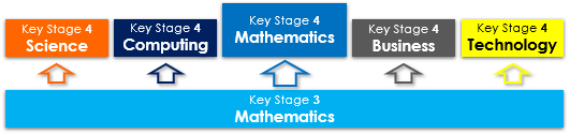
Key Stage 3

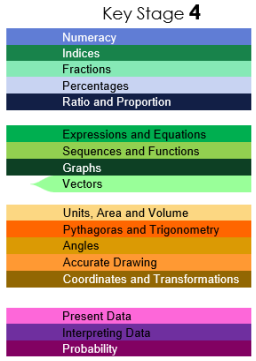
Our ***Key Stage 3*** curriculum intends to develop in students a deep appreciation of the **patterns and relationships between numbers** and to provide a firm foundation with the **tools of algebra, geometry and statistics** to enable students to **solve problems** in both abstract and real-world contexts.

The curriculum builds on prior knowledge by consolidating concepts and standardising techniques learnt at ***Key Stage 2***, developing and enhancing understanding of all six areas of the secondary Mathematics curriculum and introducing new concepts such as Pythagoras and Trigonometry that provide essential foundations for ***Key Stage 4*** Mathematics.



The curriculum also recognises the role that strong Mathematical **understanding, problem solving and reasoning skills** play in supporting success in all **technical subjects at Key Stage 4.**



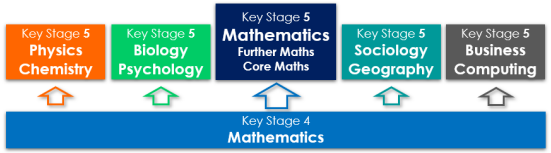


Key Stage 4

Our ***Key Stage 4*** curriculum intends to continue the development of all the areas of the Mathematics curriculum encountered in Key Stage 3 with an additional strand covering vectors.

In Key Stage 4 ***problem-solving*** and ***reasoning*** skills are further developed and refined up to, and in many cases, beyond the standard required in GCSE Mathe-matics examinations.

The curriculum recognises the pivotal role that Mathematics plays in facilitating success in many Key Stage 5 subjects.



The curriculum also recognises that in many cases GCSE Mathematics will be the final Mathematics qualification most students pursue and that the ***core numeracy***, ***problem-solving,*** ***systematic deduction, critical reasoning*** and ability to ***interpret statistics*** acquired in Key Stage 4 are crucial to future employability and quality of life.

IMPLEMENTATION – How we teach and deliver our curriculum so that students know more, remember more and can do more over time.

At Buckler's Mead, staff:

- use the MET curriculum provided by the MNSP, but have adapted the curriculum to our context where appropriate
- ensure, where possible, that students are correctly aligned with one of the five tiers but given our setting structure, this isn't as successful at present as we'd like. We are aiming to use a linear model moving forward, which will allow us to target the curriculum more appropriately and accurately. In 2021-22 the process was not well managed and, in my opinion, has adversely affected the co-hort
- carefully consider the issue surrounding star/star* - we believe that there is a mismatch with our student profile and both the star and star* curriculums. We would like the star* route to be tailored to support those students with an emerging flightpath (or grades 1-3 at GCSE). Therefore, we have tried to adapt our curriculum at the lower end to reflect the reality that some of our co-hort sit at the 1/2 borderline with a small minority for whom the GCSE route is not appropriate. Developmentally, MNSP are going to look at SEND provision and we will align as required
- reflect and review regularly on the outcomes achieved – are the processes working, what can be tweaked, what needs to be changed, does the order work for us, etc…?
- assess regularly to ensure that knowledge is secure and skills mastered and reflect and re-teach accordingly
- will predict future performance that is based solely on prior performance and follows the MNSP flight path predictors

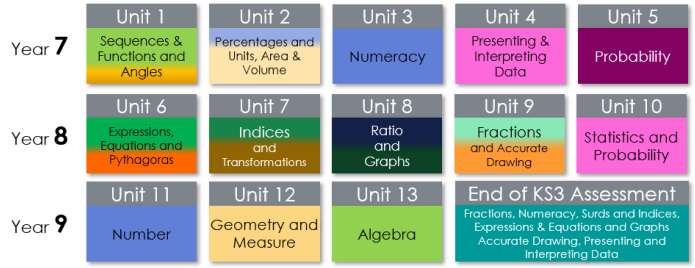
At Buckler's Mead, students:

- recall knowledge through a process of LL, LT, LY connect tasks
- follow a rigorous learning cycle that structures learning and makes outcomes explicit
- experience opportunities to apply mathematics in context
- are assessed regularly to check understanding
- are given opportunities to reflect upon their learning and adjust accordingly through dedicated reflection time (DIRT). THIS IS PUPRLE PENNED
- are supported, when necessary, with carefully designed intervention opportunities which include Focus Five, 1-2-1 in class interventions with an LSA/ Intervention teacher, JST Int Crew, The Task Force, Securing the "grade" lesson 6 and the maths support tutor group
- are given opportunities to engage in problem solving activities provided by UKMT, Millfield Maths, Numeracy Ninjas and MNSP Trust

Key Stage 3

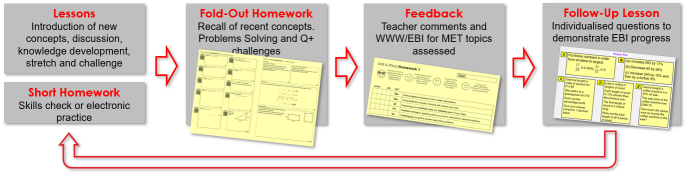
The Long Term Plan for each year presents and groups concepts in a logical sequence that enables students to develop the knowledge needed to access concepts later in the year and in subsequent years. This process begins with a 4 week induction phase at the start of Year 7 where we ensure knowledge acquired at ***Key Stage 2*** is refreshed and securely in place.

In Years 7 and 8 all areas of the curriculum are covered over 9 units with each topic enriched through mastery lessons which consolidate recall and retention and enable a deeper exploration of problem solving with each concept.



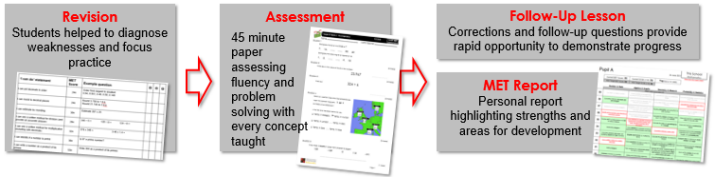
The final term of Year 8 and the first three terms of Year 9 are used to consolidate and enrich understanding of the 4 branches of Key Stage 3 mathematics. The last 3 terms of year 9 focus on preparing for an extended End of Key Stage 3 Assessment. Students study for two terms and then revise for one term before sitting three papers. This process builds students ability to retain and organise their key stage 3 knowledge over a longer time frame.

Progress is monitoring through 2/3 weekly cycle of homework, feedback and follow-up work.



In addition, knowledge development is tracked through each unit with a ***weekly knowledge check*** covering key concepts.

Attainment is measured through termly cycle of revision, assessment and holistic feedback on progress through MET reports emailed to students and parents.



The curriculum is fully differentiated into five overlapping syllabi enabling students to spend more time on the concepts they need to secure to make the most progress. Frequent opportunities to transition between classes ensure rapid progress is recognised and sustained so that there is appropriate and continuous challenge for all.

Plus and Plus+ syllabi support ***HAP*** students with all topics studied at greater depth. UKMT team and individual challenges help foster an enthusiasm for rich problem solving and further Mathematical study.

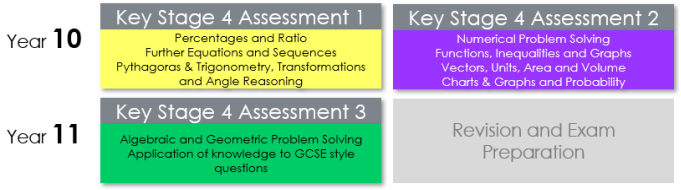
Q^{+} challenge questions are built into all syllabi and homework providing an ever-present opportunity to test understanding beyond the main objective.

Star* syllabus supports students with weaker numerical skills including some ***SEND*** with a higher emphasis on core numeracy and life skills.

Key Stage 3 Numeracy intervention programme identifies ***PP*** and ***SEND*** students with lower than expected progress and helps them with personalised programmes of support designed around weaknesses highlighted in MET reports.

Key Stage 4

The Key Stage 4 curriculum is divided into 3 carefully assembled modules of mutually reinforcing concepts. The year 10 modules last for 3 terms and concludes with a fortnight of revision before a comprehensive assessment split over 3 papers (1 non-calculator, 2 calculator). Year 11 commences with a module of work explicitly focussed on developing problem solving and application of knowledge to GCSE exam questions.

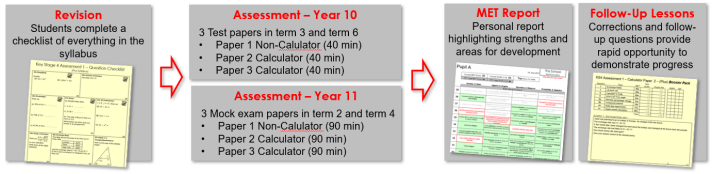


Lesson resources are interspersed with content explaining the relevance of Mathematics topic to a broad range of further study and careers.

Progress is monitoring through fortnightly cycle of homework, feedback and follow-up work as at Key Stage 3.

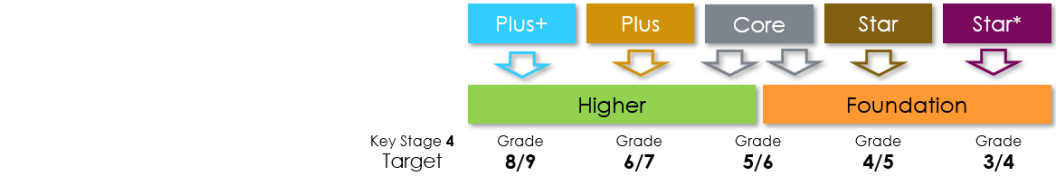
In addition, in Year 11, students build confidence and familiarity with exam style questions through ***Weekly Ten*** worksheets covering 10 key exam concepts.

Attainment is measured through tri-termly cycle of revision, assessment and holistic feedback on progress through MET reports emailed to students and parents.



Differentiation of the curriculum into 5 overlapping syllabi continues with opportunities for students to transition between syllabi after each assessment.

In Year 11 the syllabi build toward Foundation or Higher tier GCSE entry.



All support for HAP, PP and SEND continues as detailed above.

IMPACT- expected outcomes and what our students will know at specific stages.

At Buckler's Mead we expect the impact to show that students demonstrate that they know more and can apply mathematics better, and ensure students can "think" better and solve non-standard problems confidently. LW, book looks and SV reflect that students are slowly starting to demonstrate their understanding better and that confidence and enjoyment of mathematics is growing

Participation in the UKMT has developed and we hope that those students are able to think differently with confidence and we intend to develop this further. Our students will become self-reliant and resilient learners.