UNIVERSITY OF PLYMOUTH
Plymouth Institute of Education

CENTRE FOR INNOVATION IN MATHEMATICS TEACHING

MEP KEY STAGE 3 PROJECT

This pilot comprehensive online course for Key Stage 3 Mathematics has been developed by the Centre for Innovation in Mathematics Teaching (CIMT) at Plymouth University, to enhance the mathematical progress and mastery of all learners in Years 7 to 9. It provides a strong mathematical foundation for GCSE Mathematics, based on teaching and learning strategies from mathematically high performing schools and countries and sustainable through using lesson study for CPD.

The **aims** for this new course are for learners to:

- enjoy doing mathematics, becoming fluent and accurate;
- reason mathematically, gaining confidence and belief in their ability to use and apply mathematics;
- take risks and persevere, interacting with others to develop new ideas through problem solving.

The **key strategies** for this development are based on:

- Good practice from across the world, designed to ensure that our learners are internationally competitive, including the Japanese approach of teaching through meaningful activities with the intention that our learners not only master fundamental skills and knowledge but also develop the ability to think logically and communicate their ideas mathematically.
- The course will intentionally improve our learners' motivation to progress in mathematics by helping them to enjoy mathematical activities, making use of mathematics in their daily lives.
- The course will be based on **STRANDS** in:

  Number, Algebra, Ratio and Proportion, Geometry and Measures, Statistics and Probability.
- These Strands are divided into **Units**, each being introduced through a meaningful **TASK** or problem solving activity that will drive the learning from the known to the unknown.
- Each Strand will have 5 levels and it is expected that the great majority of learners will start on Level 2 and progress to Level 4 in the three years of Key Stage 3. High attainers can start on Level 3 and progress to Level 5 over the three years and lower attaining learners can start on Level 1, progressing to Level 3.
- Mastery learning will ensure that all learners are ready for each Unit and that misconceptions are dealt with before work on the Unit is started.
- The teachers' guide will include key questions that may be necessary to initiate, advance and deepen students' thinking processes and will contain both formative assessment and summative approaches.
- CIMT will provide initial in-service but we will encourage the use of lesson study as the mechanism for both innovation and sustainability

We plan to make the resource provision flexible with feedback from users considered carefully and acted on when necessary. This is a "sector led" initiative and as such, it will be sustained by the sector, the users of the resources. CIMT works in an open and transparent way and its strength comes from working with and for teachers. Revisions, changes and extensions will be needed but with part internet-based resource provision, this is both effective and efficient.

Our pilot phase starts in September 2021. For more details or with queries, please contact either

David Burghes david.burghes@plymouth.ac.uk or Derek Robinson djrjpr@gmail.com