

Contextualising post-16 GCSE Mathematics: a toolkit

About the toolkit

Introduction

This toolkit has been developed for teaching practitioners involved in planning and delivering the maths elements of 16 to 19 Study Programmes - both specialist maths teaching practitioners and vocational teaching practitioners who wish to embed maths in their delivery.

One of the key features of 16-19 Study Programmes is an expectation that learners who have not achieved grade 4 (or C) or better in GCSE Mathematics will continue to work towards achieving it. The journey to this goal can help learners to develop skills that will be directly applicable to their future work and life experiences. Achieving this goal can also open doors to employment opportunities that would otherwise not be attainable, as GCSE Mathematics is a qualification that is well recognised by employers and transferable across all sectors.

Most learners who have not achieved grade 4 (or C) or better in GCSE Mathematics, however, feel very negative at the prospect of continuing to study maths post-16. They often suffer from low levels of confidence in maths and may feel a sense of failure, so that learning maths becomes more challenging. These learners need a fresh approach distinct from the way they were taught in school, ideally one that helps them to see a clear line of sight from the maths they need to learn to the workplace.

Teaching and learning maths in contexts that relate directly to a learner's vocational studies, work experience or home life, can help learners to feel maths is less threatening, as well as making it more meaningful to them. This can help learners to develop a more positive attitude to maths and a deeper and more sustained understanding of mathematical concepts.

This toolkit has been developed to encourage you to make greater use of context your delivery of post-16 GCSE Mathematics. It aims to support you in developing and using your own contextualised resources. It also encourages you to share these resources with others, and to adapt and use those that others have developed.

Why contextualise?

Using vocational contexts in teaching GCSE Mathematics to post-16 learners can help them re-engage with maths. In addition to increasing their chances of GCSE success, this can also improve their ability to use appropriate maths in their work and home life.

Contextualised resources not only support the teaching of maths in maths-focused lessons, but can also help vocational teaching staff to embed maths teaching in vocational lessons. This approach reinforces maths learning and helps to give learners the best possible chance of success. It is widely recognised as effective practice and is encouraged by Ofsted.

Using context can be particularly effective in engaging learners early on in their programmes of study; however, at some point it is necessary to move towards more theoretical maths to prepare learners for their examinations. Indeed there are some topics in GCSE Mathematics that are not easily contextualised. For this reason, in addition to guides and exemplar resources to help you to make greater use of contextualisation, the toolkit also contains a guide on preparing learners for examinations.

Why GCSE Mathematics?

Whilst many contextualised resources have been developed for Functional Skills there are fewer contextualised materials designed for GCSE Mathematics. Where contextualised resources for GCSE Mathematics do exist, they have generally been designed with pre- rather than post-16 learners in mind.

How the toolkit was developed

The toolkit focuses on some specific context areas to exemplify how the approach could be applied to a broader range of contexts. These areas are:

- Construction and the built environment
- Health, social care and childcare
- Business, administration and entrepreneurship
- Leisure and tourism
- Hair and beauty
- Hospitality and catering
- General life and personal interests

It is based on an earlier version of the toolkit that MEI developed with funding from the Department of Education. In developing the original version MEI worked closely with four training providers, each focusing on one of four context areas:

The Skills Company: Construction and the built environment
Crackerjack Training: Health, social care and childcare
Barking and Dagenham College: Business, administration and entrepreneurship
Skills Plus: General life and personal interests

Teaching practitioners from these four providers reviewed the grid and guides that MEI had developed. They then used these tools to help them develop a set of exemplar resources for their assigned context area. The exemplar resources were then trialled by the providers; this involved several practitioners using them with different groups of learners. Feedback from the trial was then used to improve the toolkit. The exemplars were also added to the toolkit to demonstrate the wide range of different types of resources that can be developed.

With funding from the Education Endowment Foundation and JP Morgan the toolkit has been enhanced and extended to include three new vocational areas:

- Leisure and tourism
- Hair and beauty
- Hospitality and catering

MEI will continue to develop the toolkit and your suggestions for improvement would be most welcome.

Further sources of information

Resources for practitioners

- [Learning Mathematics in Context](#)
- [Maths at Work guides](#)

Reports and research

Dalby, D (2013). [The connections and contradictions in student responses to contextualised tasks](#)

Dudzic, S. (2013). [GCSE Mathematics retake for vocational students GCSE teaching from 2015](#)

National Research Centre for Adult Literacy and Numeracy. (2006) [“You wouldn't expect a maths teacher to teach plastering...” Embedding literacy, language and numeracy in post-16 vocational programmes – the impact on learning and achievement.](#)

Ofsted (2014) [Teaching, learning and assessment in further education and skills - what works and why](#)

Pearson, D., Richardson, G.B., and Sawyer, J.M. (2013). [The Oregon Applied Academics Project: Final Report.](#)

Perrin, D. (2011) [Facilitating Student Learning Through Contextualization](#)

Robey, C., Jones, E. (2015) [Engaging learners in GCSE Maths and English](#)

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