

# SUPPORTING STUDENT'S LEARNING OF MATHEMATICS

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## Extended abstract

I will deliver a talk about supporting student's learning of Mathematics. This will be based on my experiences as a teacher, headteacher and most recently as national education officer in Scotland, and will be based on the principles of the Scottish Curriculum – Curriculum for Excellence:

- Challenge and enjoyment;
- Breadth;
- Progression;
- Depth;
- Personalisation and choice;
- Coherence; and
- Relevance.

I will also provide a brief overview of how Mathematics is organised within the Scottish Curriculum. This will include our definition of Mathematics as a curriculum area and will also highlight the importance placed on numeracy across learning as the responsibility of all teachers. Reference will be made to the 8 numeracy and mathematical skills which are embedded across the experiences and outcomes of our curriculum.

I will go on to provide information, guidance and some examples of effective practice (from across Scotland) in relation to planning for effective learning, teaching and assessment, including the importance of a numeracy rich environment, active learning and learner engagement in the creation of learning intentions and success criteria. I will include references to international case studies on visible learning influenced by the work of John Hattie.

A theme running through my presentation will be the importance of positive attitudes towards Mathematics and to raising the (positive) profile of numeracy and Mathematics amongst educators, learners and their families. Here I will draw on the work of Jo Boaler and share some of her conclusions about the development of mathematical mindsets, including the importance of feedback. I will also highlight the Scottish Government's programme – Making Maths Count. This work has two broad aims:

1. To encourage greater enthusiasm for Mathematics amongst children and young people, their parents, carers and the wider public; and
2. To provide support for teachers and help raise attainment in Mathematics National Qualifications.

The presentation will also consider class groupings and differentiation in Mathematics, taking account of research and guidance. I will highlight the importance of rich tasks and the power of mistakes as influences on raising both enjoyment of and attainment in Mathematics.

I will include reflective questions which can be used by individuals or staff teams working together to support learning and raise attainment in Mathematics.

I will also share some recent actions Education Scotland has taken to support teachers and practitioners with their work in supporting learners of Mathematics – across the curriculum and within the Broad General Education (3-15 years). This will include guidance and support, and how we are using technology to provide and support online career-long professional learning and collaboration using Glow – the Scottish School's intranet.

**Keywords:** mindsets, active learning

### **References**

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