



All Party Parliamentary Group for
Maths & Numeracy

Maths and numeracy in the early years

How children learn about numbers and develop mathematical understanding during the pre-school years is vitally important and sets them on a path towards numeracy skills and confidence in later life.

In 2013/14, 23% of children in England failed to achieve the expected level in mathematics at the end of the early years foundation stage (Department for Education, 2014), and research suggests that once children fall behind, they continue to do so throughout school.

With this in mind, the All-Party Parliamentary Group brought together a number of early years and maths education specialists to discuss how maths and numeracy is learnt in pre-school settings and how a positive attitude can be instilled during this vital stage of learning.

Curriculum

Despite maths being included in the English early years foundation stage framework and equivalent curricula for Scotland, Wales and Northern Ireland, more still needs to be done to raise the profile of maths and encourage the development of mathematical thinking in young children.

There are many innovative approaches and resources which incorporate maths into play and help to make the abstract concrete, but these are often not properly understood or used in early learning settings by practitioners.

There remains a concern that there is much emphasis on 'counting on' and rote learning, at the expense of developing early number sense and beginning to understand the abstract language of maths.

- RECOMMENDATIONS**
- The government should increase the focus of maths and numeracy in the early years curriculum, by including number sense as a prime area of development (alongside communication and language, physical development and personal, social and emotional development).
 - The government should conduct more research into the ways young children learn maths to inform teaching methods.

Workforce education

The quality of maths learning varies substantially in early years settings and this often depends on the qualifications and attitudes of the practitioners. Many working with under-5s are mathematically under-qualified and unconfident, with no qualification higher than Level 2 (roughly equivalent to a GCSE A*-C pass). Many also have a negative outlook on maths as a result of their own school experiences. As one of the experts put it, one of the best ways to produce children who have maths difficulties is "to employ adults who know little and preferably hate mathematics".

Most of the experts agreed that providing better training in early years maths development is essential to start improving children's understanding of maths at a young age. Making maths GCSE a requirement for new entrants to the profession will not improve the skills and knowledge of the existing workforce.

RECOMMENDATIONS

- All early years practitioners, both new entrants and the existing workforce, should be trained in children's mathematical development.
- The government should extend its Maths Hubs programme to include pre-schools.
- The government must provide more guidance for practitioners on the use of effective approaches and resources.

Parents

Many parents are unable to offer children mathematical experience or encouragement at home. Like many of those in the early years workforce, they may be reluctant to engage in the subject because of their own lack of confidence and pass on to their children the perception that it is OK to be "no good at maths".

Parents need more support to engage their children in maths and information on how important maths is in their children's lives. A national drive to highlight the importance of early maths learning, similar to those for healthy eating and exercise, and language and reading, would be a good place to start.

RECOMMENDATIONS

- More information directly to parents on how to develop their children's maths skills.
- Early years settings to work with parents to support children's development.
- A national 'positive about maths' drive to draw in parents as well as early years staff.

Conclusion

Too many early years settings fail to provide young children with a good start to their maths education. Although there are some concerns about the early years maths curriculum, the main problems are the attitudes, mathematical confidence and understanding of those who work with young children. Parents too often fail to give positive support.

This Group would like to see moves towards a better trained and qualified workforce with a clearer understanding of early years maths teaching. It also recognises the need for more support for parents and sees considerable merit in a national drive to raise awareness of the importance of maths in the early years.

It believes there are a number of practical steps that should be considered now that could help to effect change in the long term.

Specialists:

Adrian Brindley

Pre-School Learning Alliance and Head of Pre-prep, Bilton Grange School

Stephanie Cracknell

Founder, Mathemagical

Dr Sue Gifford

Principal Lecturer, Roehampton University, and Advisory Committee on Mathematics Education member

Barbara Isaacs

Academic Director, Montessori Centre International

Maulfry Worthington

Co-founder, Children's Mathematical Network

Stella Ziolkowski

Director of Quality and Workforce Development, National Day Nurseries Association

Department for Education. Early years foundation stage profile results; 2013 to 2014 (<https://www.gov.uk/government/statistics/early-years-foundation-stage-profile-results-2013-to-2014>)

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