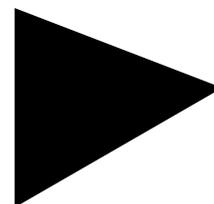


The Australian Association of Mathematics Teachers and Early Childhood Australia

Position paper on

Early childhood mathematics



2006

Rationale

The early childhood years, from birth to eight years of age, are important in the development of people's learning and lives. This importance has been recognised particularly in terms of the development of language and literacy. Through this position paper, the Australian Association of Mathematics Teachers and Early Childhood Australia recognise that the early childhood years are also important in the development of mathematics and numeracy. This position paper recommends appropriate actions to ensure that all young children have access to powerful mathematical ideas and learning in their early years, and to learning that nurtures success and positive dispositions.

Position

The Australian Association of Mathematics Teachers and Early Childhood Australia believe that all children in their early childhood years are capable of accessing powerful mathematical ideas that are both relevant to their current lives and form a critical foundation for their future

mathematical and other learning. Children should be given the opportunity to access these ideas through high quality child-centred activities in their homes, communities, prior-to-school settings and schools.

Recommendations

The Australian Association of Mathematics Teachers and Early Childhood Australia make the following recommendations to

- early childhood educators, including parents and carers, educators in prior-to-school settings, and teachers in schools;
- teacher education institutions; and
- systems or organisations providing early childhood education.

NOTE: Several of the terms used in this paper and some other matters are discussed on the AAMT and ECA websites.



www.aamt.edu.au • www.earlychildhoodaustralia.org.au

© The Australian Association of Mathematics Teachers Inc. & Early Childhood Australia, 2006
This document may be freely copied and distributed for educational purposes.

Recommendations for early childhood educators

Early childhood educators should adopt pedagogical practices that:

Engage the natural curiosity of young children to assist in the development of the children's mathematical ideas and understandings.

Use accepted approaches to early childhood education such as play, emergent, child-centred and child-initiated curriculum to assist young children's development of mathematical ideas.

Ensure that the mathematical ideas with which young children interact are relevant to their present lives as well as forming the foundation for future mathematical learning.

Recognise, celebrate and build upon the mathematical learning that young children have developed and use the children's methods for solving mathematical problems as the basis for future development.

Encourage young children to see themselves as mathematicians by stimulating their interest and ability in problem solving and investigation through relevant, challenging, sustained and supported activities.

Recognise that mathematical learning is a social activity supported and extended through interaction with both other children and adults.

Provide appropriate materials, space, time and other resources to encourage children to engage in their mathematical learning.

Focus on the use of language to describe and explain mathematical ideas, recognising the important role language plays in the development of all learning.

Address the learning needs of children with intellectual disabilities through explicit teaching of applicable vocabulary and other strategies that are appropriate for each child.

Attend to the language learning needs in mathematics of children for whom English is a second or subsequent language.

Respond to the diverse cultural backgrounds of young children in this country and ensure that all children, particularly those from more traditional Indigenous communities have access to cultural and language learning that underpins learning of western mathematics.

Encourage young children to justify their mathematical ideas through the communication of these ideas in ways devised by the children that display appropriate levels of mathematical rigour.

Acknowledge that while materials may be important in young children's development of mathematical ideas, these ideas are actually developed through thinking about action — children need to be encouraged to engage in mental manipulation of mathematical ideas.

Recognise that children's mathematical development occurs within, is affected by, and needs to be relevant to a number of different contexts including family, cultural groups, community, prior-to-school setting and school.

Assess young children's mathematical development through means such as observations, learning stories, discussions etc. that are sensitive to the general development of the children, their mathematical development, their cultural and linguistic backgrounds, and the nature of mathematics as an investigative, problem solving and sustained endeavour.

Recognise that the primary use for gathering information about children's mathematical development through assessment is to track that development and to help plan further interactions, tasks, activities and interventions.

Recommendations for institutions

Teacher education institutions and others preparing early childhood educators should:

Ensure that early childhood teacher education programs allocate adequate time for the study of sufficient and appropriate mathematics and mathematics pedagogy to enable graduates to provide quality programs that ensure mathematical learning for young children in both prior-to-school and school settings.

Recognise that many students in early childhood teacher education programs need to be supported to build positive views of mathematics and themselves as users and doers of mathematics through the focus and nature of their learning program.

Continue relevant and coherent research on young children's mathematical development and ways in which adults can assist these children to gain access to powerful mathematical ideas.

Recommendations for education providers

Early childhood education providers should:

Provide adequate resources, including appropriately prepared early childhood educators, to encourage and promote the development of children's powerful mathematical ideas.

Develop coherent and continuous mathematics curricula across the prior-to-school and early school years that recognise, celebrate and build upon the mathematical learning of young children.

Develop assessment approaches for young children's mathematical development that are sensitive to the general development and learning of the children, their mathematical development, their cultural and linguistic backgrounds, and the nature of mathematics as an investigative, problem solving and sustained endeavour.

Expect that their staff use the assessment information they gather to guide their planning for each child's mathematical development and provide appropriate support to ensure that they are able to do this effectively.

Work with and support parents, carers and others to provide opportunities and access to mathematical learning by young children in their homes and communities.

Ensure that intervention and support programs are consistent with the philosophy and practice advocated in this position paper.

Expect and support staff to undertake ongoing professional learning that develops their knowledge, skills and confidence in early childhood mathematics.

© The Australian Association of Mathematics Teachers Inc. & Early Childhood Australia, 2006

FOR MORE INFORMATION, CONTACT

The Australian Association of Mathematics Teachers Inc. — www.aamt.edu.au

GPO Box 1729 Adelaide SA 5001 • *phone* (08) 8363 0288 • *email* office@aamt.edu.au

Early Childhood Australia — www.earlychildhoodaustralia.org.au

PO Box 7105, Watson ACT 2602 • *phone* 1800 356 900 • *email* eca@earlychildhood.org.au