

Reviewing the Family Math Literature

RECOMMENDATIONS FOR POLICY, PRACTICE AND RESEARCH

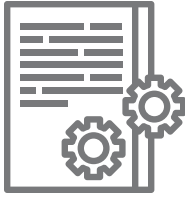
Efforts to promote family math have been gaining momentum. To lay a firm foundation for the growth of this movement, we took a critical look at both what the research says and what practitioners observe about family math engagement. Based on our review of empirical literature and our interviews with educators and professionals working in community settings, we present recommendations for policy, practice and research.

SUMMARY OF FINDINGS

- Family math needs to go beyond counting and number to include spatial reasoning and patterning.
- Family math efforts need to address families' attitudes and beliefs about math.
- Families who can most benefit from support—those with limited resources, math anxiety, or other barriers to engagement—are often underserved.
- Family engagement efforts must recognize sociocultural differences in how families engage in math.
- Research primarily linked achievement to structured math activities, while practitioners recommend embedding math into everyday life. However, it may be possible for practitioners to help parents include elements of structured math in informal activities.
- Research on family math interventions shows promising avenues to promote family math engagement, but this line of research is in its infancy and has yet to address some challenges practitioners describe.

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**EXPAND
NON-SCHOOL-BASED
EFFORTS**

**INCORPORATE
FAMILY MATH INTO
EARLY MATH CURRICULA**

**IMPLEMENT
LOCAL EFFORTS
TAILORED TO
COMMUNITIES**

**PROMOTE
PATHWAYS TO
SHARE IDEAS**

**ENSURE
RESOURCES ARE
ACCESSIBLE**

**INCORPORATE
FAMILY ENGAGEMENT
INTO PROFESSIONAL
DEVELOPMENT**

Expand non-school-based efforts. Provide funding to integrate math into community spaces (like museums, libraries, and grocery stores) and connect families with community resources. Partner with individuals in the community already connected to families.

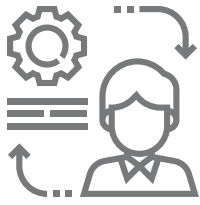
Incorporate family math into curricula to support early educators in promoting family engagement by 1) emphasizing early math skills that predict later achievement; and 2) ensuring alignment between the math concepts learned in school and at home.

Ensure that work is implemented at the local level to reflect family and community context. What are the shared cultural practices or community settings that can be utilized to promote family math? What are the unique needs to consider, such as languages spoken or limited resources? How can supports or resources be adapted to fit the cultural contexts and values of families?

Develop avenues such as online platforms, workshops, or conferences for those involved in family math to share ideas.

Create initiatives focused on under-resourced communities. Situate no- or low-cost family math events or installations in underserved communities. Consider opportunities to enlist the support of local organizations or businesses.

Include family engagement in professional development to help practitioners view parents as partners in education, in order to empower families in supporting children’s learning.



**EMPHASIZE
MATH IS MORE THAN
COUNTING**

Help families recognize that math is more than counting. Provide guided activities on other aspects of math and help parents see why they are important. Help parents understand how to engage young children in developmentally appropriate ways.

**BUILD ON
HIGH
EXPECTATIONS**

Make connections between early math experiences and children's later school success in order to strengthen parents' expectations and beliefs about the importance of math.

**ENCOURAGE
MATH IN FAMILIES'
EVERYDAY ROUTINES**

When emphasizing math engagement in everyday, routine activities, provide examples for children of all ages. Encourage families to find the math in what they are already doing.

**POINT OUT
MATH IN PLAY AND
BOOK READING**

Point out math opportunities in play and book reading that parents engage in with children. Identify apps and web-based resources with ideas for how to talk about math.

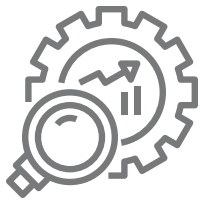
**MAKE
ADULT-ONLY EVENTS
ENGAGING AND LOW-
PRESSURE**

Develop adult-only events that provide engaging opportunities to try out math activities in a low-pressure, distraction-free setting. Ensure that parents are able to attend by providing separate, simultaneous activities for children.

**SUPPORT
PARENT-TO-PARENT
FAMILY MATH
OUTREACH**

Connect with other community-based partners to maximize the reach of family math events, drawing on the distinct resources of schools and community settings, such as community centers hosting and promoting events organized by schools.

Implement strategies for parent peer-to-peer outreach, such as parent ambassadors, to broaden school-to-home communication strategies and reach more families. Collaborate with parents and family members to develop culturally-responsive and relevant events and resources.



**ENSURE
RESEARCH SAMPLES
ARE REPRESENTATIVE
AND INCLUSIVE**

Include more heterogeneous families in both exploratory studies and intervention studies to expand knowledge beyond highly-educated, middle class White families. This will provide critical information about how to support family math engagement across a wide range of life circumstances and cultural differences.

Utilize open-ended methodologies to examine children's opportunities to participate in family- or community-centered math activities in addition to child-centered activities. Consider work focusing on particular cultural contexts to develop asset-based models of family engagement and ensure that comparative studies do not frame differences as deficits.

**DEVELOP
ASSET-BASED FAMILY
ENGAGEMENT MODELS**

Build on research indicating that culture and SES have qualitative impacts on parents' school involvement. Consider how context may impact the best ways to reach and connect with families, including examining potential pathways for reaching families outside of school.

**EVALUATE
APPROACHES TO
REACH FAMILIES
BEYOND SCHOOL**

Since expectations and attitudes are some of the most robust predictors of math achievement, research should examine the impact of interventions on these aspects of family math. Approaches should attempt to address math attitudes and beliefs directly, or indirectly through interventions aimed at increasing the quantity or quality of family math engagement.

**ADDRESS
ATTITUDES AS PART OF
INTERVENTION WORK**

Conduct studies that evaluate the long-term outcomes and sustainability of family math interventions, as well as the feasibility of implementing programs on a large scale. Examine how to design interventions that are flexible in building on the strengths of diverse families.

**EXAMINE
SUSTAINABILITY AND
GENERALIZABILITY OF
INTERVENTIONS**

Continue to examine the characteristics of family math engagement that are most predictive of children's math learning, and whether these vary across sociocultural contexts. Research has often linked formal math activities—where children's math learning is the focal point of the activity—to math achievement. In order to identify general principles across diverse family contexts, it is critical to examine what features of these activities or family practices during these activities most effectively support children's learning.

**EXPLORE
ASPECTS OF MATH THAT
ARE MOST CRITICAL AND
FEASIBLE TO TARGET**