

College of Education

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

The Math Partners Project: Phase 1

We are working with teachers and families to build an intervention that helps teachers and families work together to support early





Mapp, K. & Bergman, E. (2021). Embracing a new normal: Toward a more liberatory approach to family engagement. Carnegie Corporation of New York.

Methods

Phase 1: Design

Using a co-design framework, the research team worked with Phase 1 participants to develop materials and activities that will become part of the Math Partners Intervention.

Pa<u>rticipants</u>:

- Head Teacher
- \succ Three parents (grandma, dad, and mom)

Data Collection:

- \succ Video recordings of twice monthly design teams
- \succ Exit slips from design teams
- Interviews
- Virtual home visits between teachers and parents
- > Surveys

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"It was nice being able to interact with other students' parents and having that ability to kind of view how everybody else works with their kids."

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Math Partners: Building Dual-Capacity Partnerships Between Teachers and Parents

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The Design Team

Teachers and families learn together and share their experiences working with children in twice monthly design teams. The Design Team was made up of one teacher, three parents, and two members of the research team. In Spring 2025, they discussed sets and sorting as a foundational math concept and tried sorting activities at home and at school. The goal was to develop activities parents and children could enjoy together.

Grandma: Ruth

Ruth was expecting to learn about formal math teaching when she joined the project, but she soon came to appreciate how math can be integrated into everyday activities and be childled. Her goals evolved to include deeper involvement in her grandchildren's education and stronger collaboration with their teacher.

"It's nice when you get to know the teacher one-on-one....You realize that they respect you and know that...you are important, just like they are important."



Dad: John

John is interested in math and was excited to join the project (with spouse Quinn). He was eager to share activities they did at home with their autistic 3.5-year-old daughter and was very interested in ways that he could help in the classroom. His goal in joining the project was to improve math learning for all children, not just his own.

"We want to help the teachers like you know, it's if, if you need the extra set of hands and the TA you guys don't have a spare sub, let us know we can try to help."



Mom: Quinn

Quinn is a stay-at-home parent who joined with spouse John. She described herself as not very good at math. She says the design team "opened her point of view" of early math. She liked learning about how to incorporate math into everyday routines like sorting to clean up or reading books. She enjoyed learning about how other people work with children.



"I kind of wish that there were more opportunities...in future collaborations (I'd) like to really kind of get down to like, 'Why did this work for your kid?' or...'How did you adjust it for your child's needs?"

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Teacher: Hannah

Hannah, the classroom teacher, wanted to grow opportunities to involve families in her classroom and strengthen her knowledge of early math. A natural at forging meaningful relationships with parents, she is passionate about supporting all children in her room. Hannah's teaching position was unstable: she was a permanent substitute teacher and frequently down a TA, so she dove into the project while being realistic about what she could accomplish.

- > Challenges strategies Conditions

Erikson Institute Early Math Collaborative

Home Activities







Considering the Dual Capacity Model

 \succ Teachers, like Hannah, are unfamiliar with basic family engagement

Process: Families and the teacher all described warm relationships with other members of the team and described the meetings as enjoyable and rewarding.

Process: Families felt respected and heard.

> Organization: The meetings took place at the children's school, in the classroom, emphasizing the connectedness of the meetings with larger organization.

Initial Conclusions

All participants learned new strategies from the interactions. Importantly, the teacher reported having enjoyed learning about what families do at home > Connections: Families enjoyed forming new relationships with other members of the team, learning about how other families work with their children.J

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