




MAKE CONNECTIONS
You and Me and Math

Efforts to Scale-Up Make Connections

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AGENDA

- Experience a Make Connections Activity
- Program Goals and Components – what we are trying to scale
- How we scaled
- Implementation Science – Readiness Conditions for Effective Scale




Turn to the person next to you and discuss...
 You've just traced hands with a 3 year old. What would you talk about as you compare hands?



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Exploring math through open-ended questions

Trace an adult hand on construction paper. Trace a child hand inside.

Your hand is small. My hand is large.



How are our hands different?

How are our hands alike?

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Trace an adult hand on construction paper. Trace a child hand inside.

Your hand is small. My hand is large.



How are our hands different?

How are our hands alike?

Lucas, age 5, "We both have five fingers. Yours are longer and wider than mine."

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Key Components of Make Connections You and Me and Math:

- Early Learning Math, Family/Caregiver Program
- Building positive early learning math experiences
- 11 curriculum units, story time connections, take-home resources, training resources
- Emphasis on "math talk" and open-ended "math-talk" questions

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Initial Development Sites

- 2014-present, San Jose, CA (12+ sites)
- 2015-present, Merrimack, MA (2 sites) and Elizabeth/Rahway NJ (2 sites)
- 2016-present, SE ME (4 sites) and LA (5 sites)

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Open-ended questions

- Help adults uncover children's mathematical thinking
- Promote children's mathematical thinking
- Help children learn to verify their ideas for themselves
- Show children that their mathematical thinking matters

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Open-ended questions in another Make Connections activity

Take a handful

How can you tell if you have the same amount of red and blue?

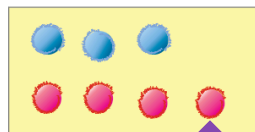


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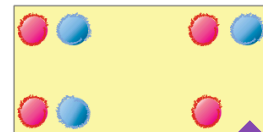
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And a 3 year old's responses

Compare amounts



Show me a different way.



Sofia, age 3.

(about image on left) "This red doesn't have a partner."

(about image on right) "This corner doesn't have a blue pom-pom."

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Example outcomes

After participating for three to six months in a program using Make Connections...


- 85% of caregivers reported including math conversation at least weekly when doing household chores with children (vs. 35% pre-program)
- 71% of caregivers reported asking their children to explain their math thinking at least weekly (vs. 12% pre-program)
- 100% of caregivers reported that they and their children developed newfound enthusiasm for math

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Make Connections Website

- <https://external-wiki.terc.edu/display/makeconnections/>



The Scale Process

- Co-Creators
- Early adopters self-identified
- Spoke at national Y conferences
- Website
- Offered training and on-going technical assistance
- Ready to make available to the early learning/family engagement community



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- **2017-present.... 36 unique YMCA regions and counting**

Challenges and Successes during scale

Challenges:

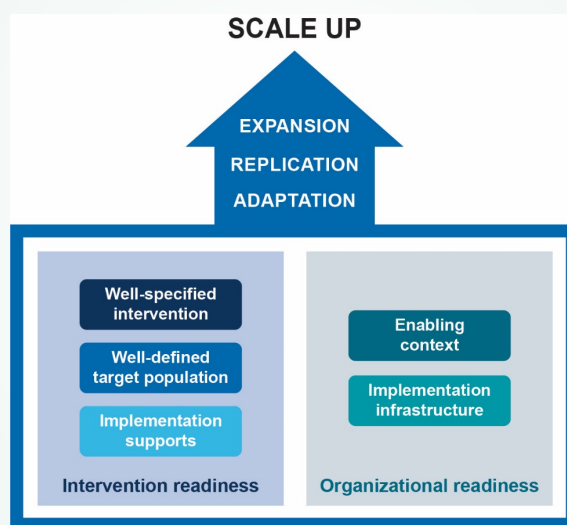
- Staff turnover
- YMCA Delivery system restructure

Successes:

- Strong collaboration with TERC
- On-going interest and participation
- Commitment to training & evaluation

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Implementation Science – A Framework



Source: Adapted from Maxwell and Richman (2018, 2019) by Mathematica.



What we learned

We did a lot of things intuitively well:

- The program was designed to fit into existing program
- Careful attention to meeting staff and programs where they were
- Fairly well-specified project with well-defined target population
- High level of interest and buy-in

Things to consider as we continue to scale:

- Implementation guide
- Process for monitoring fidelity
- On-going training and support



What's Next to Think About

- Fidelity vs Adaptability
- Family Engagement Strategy
- Strengthen implementation supports

