

# Math Circles through an Equity Lens

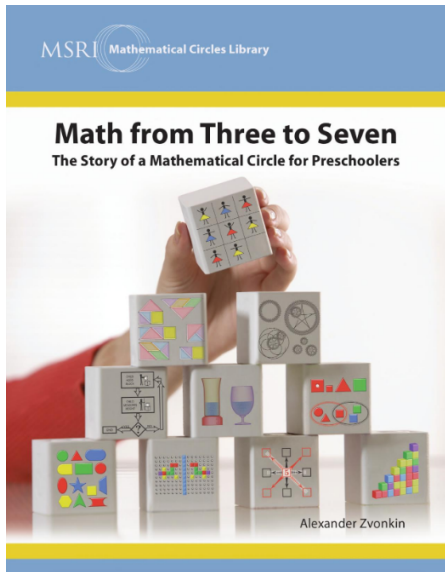
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# Introduction

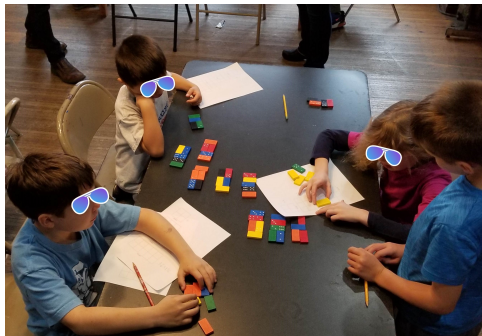
- From 2016 - 2020, I explored Math Circles and enrichment programs in Philadelphia
- **Goal:** To create Math Circles that included my kids and their peers.
- **Realization:** To create equitable Math Circles, programs should be offered during the school day.
- This talk explores what obstacles and opportunities in each setting, lessons learned, and suggests open questions to explore

# Math Circle at Timothy Academy Preschool, 2016



- Context:  
Timothy Academy  
(68% African American students; 26% Hispanic students)
- Opportunities:  
Equitable!
- Obstacles:  
Limited facilitators  
Financially unsustainable  
(school now closed)

# Philly Junior Math Circle, 2017 - 2020



- Context:  
Center City Philadelphia
- Opportunities:  
Collaborators = facilitators  
Financially sustainable
- Obstacles:  
Parental time/engagement

# Math Circle at Hackett School, 2018-2019



- Context:  
Hackett School (60.8% low-income)
- Opportunities:  
Equitable!
- Obstacles:  
Not scalable  
Covid restrictions

# Take-home Logic Puzzles, 2018



- Context:  
Hackett School (60.8% low-income)  
McCall School (37.2% low-income)
- Opportunities:  
Scalable
- Obstacle:  
Parental time/engagement  
Not a Math Circle

# Math Circle at Open Door Community Center, 2018



- Context:  
Low-income neighborhood
- Opportunities:  
Partner with Webster School  
(87.4 % low-income)
- Obstacles:  
Parental time/engagement

# Lessons Learned

- Parental time/engagement seems to be the biggest obstacle to equitable access to Math Circles
- Strongest participation from disadvantaged students was when Math Circles were offered during the school day
- Teachers and students loved having Math Circles in the classroom.



# Teachers' Feedback

- “My whole class was always **excited** about math circles! Students who typically showed little interest in math, and students who struggled in math, always enjoyed math circles because they viewed it more as a game and not math practice.”
- “ Making time for math circles was definitely worth it. The time was educational, challenging, and **fun** for the children. As a teacher I feel that giving the children time to explore, experience, and articulate their reasoning through collaboration and discussion when presented a “math problem” or situation builds their confidence and critical thinking skills.”
- “All student groups **loved** going to Math Circles. It was an opportunity to leave the classroom and explore math concepts in a different setting than their regular classroom. It provided students with an opportunity to use critical thinking and reasoning to solve problems.”

# Future Work

- Math enrichment programs should be available when and where students are already present
- Can Math Circles be aligned with district goals? Can we do this in more schools? Does this improve the school's outcomes?
- Can it be demonstrated that this Math Circle program helps to the equity gap?

# Questions?

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