

# **Math Club: University School Partnership to Promote Learning for All**



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# Agenda



- Rationale for Math Club
- Overview of Different Iterations
- Sample Tasks/Resources
- Preservice Teachers' Perceptions
- Future Plans and Considerations
- Suggestions/Questions

# Rationale



- **Sites-Based Experiences for PSTs**
  - PSTs enrolled in Dual Certification ECE/SED Program
- **Title I K-4<sup>th</sup> Grade Elementary School with no academic after school programs**
  - Lower PSSA scores in mathematics as compared to LA

# Iterations



- **Fall 2015**
  - 12 PSTs in ECE Math Methods
  - 15 PSTs SED Inclusive Methods
  - 14 2<sup>nd</sup> grade students
  - 5 weeks
- **Spring 2016**
  - 20 PSTs in ECE Math Methods
  - 30 2<sup>nd</sup> grade students
  - 8 weeks



# Fall 2015 Iteration



- 27 PSTs and 14 2<sup>nd</sup> grade students
- 2<sup>nd</sup> grade students put in groups of 3-4 and matched with 5-6 preservice teachers
- Diagnostic interviews followed by blue print plan
- Weekly reporting of progress and game planning
- Pen Pals during 2 sessions

# Spring 2016 Iteration



- 24 PSTs and 30 2<sup>nd</sup> grade students
- 2<sup>nd</sup> grade students assigned to one PST
- PST student workers who managed some aspects of Math Club
- 2<sup>nd</sup> grade teacher suggestions on mathematical content
- Diagnostic interviews followed by weekly games focused on diagnostic interview data
- Coding and basic skill practice in computer lab every-other week
- Planning based on 2<sup>nd</sup> grade student thinking and time-outs
- Culminating trip to local science center

# Sample Games/ Tasks



- **Playing card games**
  - Top-It & Salute
- **Jump Plate**
  - Number and Operations
- **Geometry Hunts**
- **Exercise Challenge and Heart Measurement**
  - Measure of central tendency

# Card Game: Top-It



- One deck of playing cards
- 2-3 players per group
- Game can address:
  - Magnitude
  - Addition
  - Subtraction
  - Multiplication
- Data can be collected via observation sheet



# Card Game: Salute

- 3 players
- Addition or Multiplication
- One student “moderates” while the other 2 solve



# Jump Plate



- Paper plates with expressions using multiple operations are arranged at random.
- Students are prompted to jump only on plates that represent the same number until they reach the end.



# Angle Hunt

- Small groups
- Students searched around the school property for different types of angles
- During the following math club meeting the pictures were used as part of classification game



# Online Resources



## Kodable



## Arcademics



# Resources



- NCTM Illuminations Website
- Kodable
  - <https://www.kodable.com>
- Arcademics and NCTM Calculation Nation
  - <http://www.arcademics.com>
  - <https://calculationnation.nctm.org>
- Games modified from:
  - Everyday Mathematics Curriculum
  - Elementary and Middle School Mathematics: Teaching Developmentally (Van De Walle, Karp & Bay-Williams, 2016)

# Future Plans and Considerations



- Groups with a small PST to student ratio are preferable
- Have a plan and provide appropriate supports if you have students and/or families who are ELLs
- More purposefully incorporate in-service with pre-service teachers in the planning
- Use technology based games that allows for content differentiation via games and provides data on students progress over time
- Continue using time-outs and lesson studies with PSTs
- Secure grant funding

# Preservice Teachers' Perceptions



- Personal experience
- “...working with him allowed me to see the benefits of teaching students that there can be more than one way to solve a problem, that taking your time does not mean you are bad at math, and that an emphasis on speed often hinders a student’s ability to complete a mathematical task.”
- “..learned that my student had used a student invented strategy to explain how he received his answer. He used compensation, which was something he was not taught in school.... [in my future teaching] I’ve learned I need to prepare myself for many situations not to go as planned and that this is ok.”

# Discussion & Questions



- Examples of other formats/structures
- Thoughts about our ideas/experiences



# Contact Information



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