Playing with Numbers:
K-1 Hands-On Math from the Chicago Children’s Museum

Ramona Richards
Education Programs Manager

Birth-to-Third Grade (B-3) Continuity Conference
10:00 AM Thursday, June 14th
Introductions
Session Objectives

→ Understand the mission and motivations behind our museum-based professional development *Playing with Numbers.*

→ Connect math to the real world through children’s literature.

→ Engage in age-appropriate, FUN, hands-on math activities.
Why *Playing with Numbers*?

- Early math is a predictor of achievement
- Marginalized populations
- Math anxiety for early educators
Our CCM Mission:
To improve children’s lives by creating a community where play and learning connect.

Inform, Inspire, Enable:
Empower adults to understand and extend play and learning experiences for children beyond the museum’s walls.
Play is often talked about as if it were a relief from serious learning. But for children play is serious learning. Play is really the work of childhood.

-Fred Rogers
What is *Playing with Numbers*?

**CONTENT**
- Hands-on materials
- Conceptual knowledge
- Learning trajectories

**COLLABORATION**
- School teams
- PWN cohorts

**REFLECTION**
- PLCs
- Reflective Practice

math work stations
Procedural Knowledge

- Rules
- Procedures
- Algorithms
- Step-by-step

...often learned separate from concepts, and memorized.
Conceptual Knowledge

- Focus on relationships
- Interconnected
- Synthesizes old and new knowledge
- Multiple paths to solutions
- Uses reasoning
Trajectory of Learning

CONCRETE  PICTORIAL  SYMBOLIC
Utilizing Literature in Mathematics

- Explicit mathematical concept
- Includes a mathematical problem
- Supports big ideas in math
Math Work Stations

- Exploratory, open-ended
- Increase learner independence
- Increase academic talk
- Focus on a specific math concept
- Opportunities to differentiate
- Fun!
Let’s Try It Out!

- Counting & Cardinality
  - Mouse Count
- Operations & Algebraic Thinking
  - Bears in a Cave
- Geometry
  - MagnaTiles
Debrief & Conclusion

→ What did you notice while you were at play?

→ How do you think you could apply this in your teaching?

→ Did you have any “aha moments” today?

→ Questions and comments?
Thank you!