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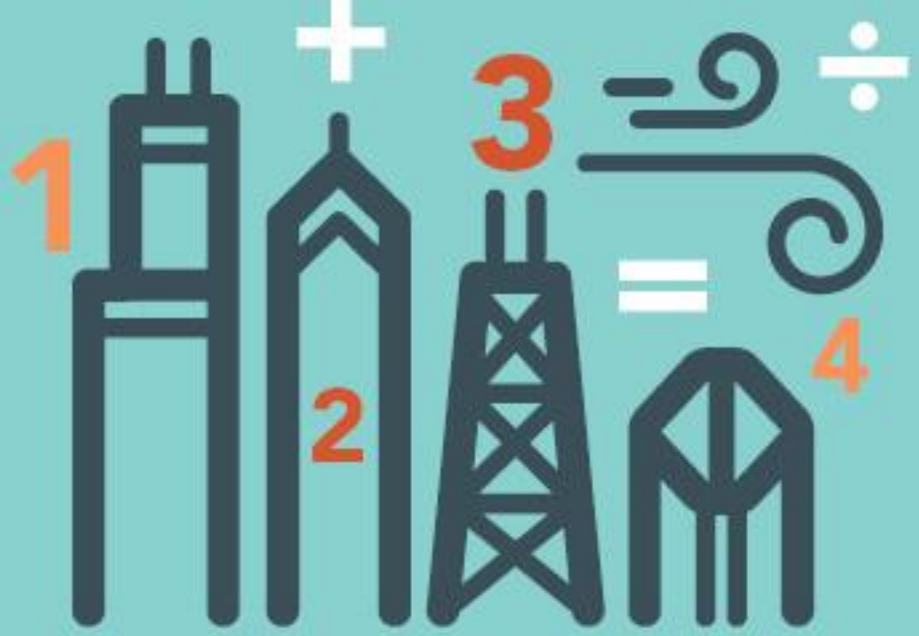
Chicago's Elementary Math Specialist Program

A District/University Partnership



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CME GROUP FOUNDATION

Chicago's Elementary Math Specialist Program: A District/University/Foundation Partnership

November 2018

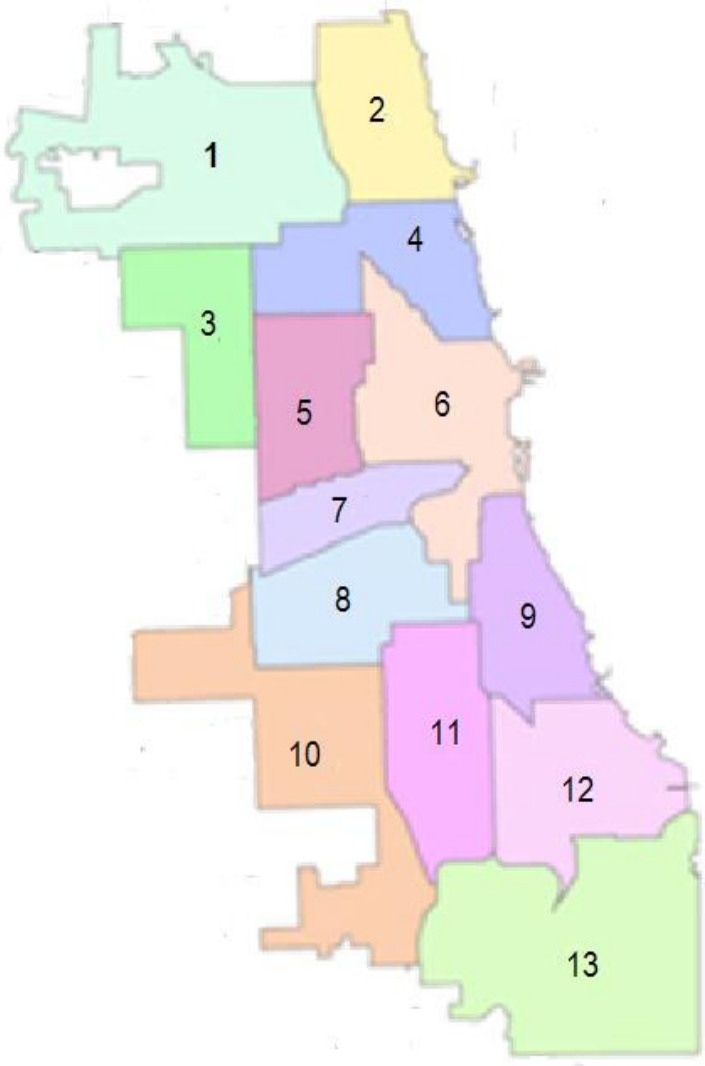
Agenda

- Introduction - Kassie Davis, Executive Director, CME Group Foundation
- Video
- Program Overview and Goals - Jessica Mahon, STEM Executive Director, Chicago Public Schools
- Program Components and Coursework Design - Lynn Narasimhan, STEM Center Director, DePaul University
- Teacher Perspective - Shanteau Allen, Teacher, Chicago Public Schools
- Closing – Kassie Davis

Chicago Public Schools At a Glance

2018-19 Facts and Stats

- 644 schools
- ~371,000 students
- ~21,000 teachers
- ~36,000 employees
- 78% of students are economically disadvantaged
- African American – 37%
- Hispanic – 47%
- White – 10%
- Asian – 4%



Chicago Context

What We've Learned

- Teacher Leadership models are largely dependent on schoolwide culture

- Content knowledge remains a barrier for many PreK-5 teachers (grades 3-5 in particular)

- Some teachers have really bought in to the "new" approaches, strategies, and resources being shared through district-wide professional learning

Elementary Math Specialist Program

Addressing District Needs

- Affordable and Sustainable
- Issues of Scale
- Aligned with Existing District Priorities

A Unique Partnership

- Chicago Public Schools + DePaul University, University of Chicago, University of Illinois at Chicago + CME Group Foundation
- Truly responding to district needs
- Year of co-planning funded by The Chicago Community Trust

Elementary Math Specialist Program

Program Goals

- Prepare participants to specialize in teaching math allowing them to impact more students directly

- Provide participants with experiences leading to increased content knowledge, pedagogical content knowledge, and confidence in teaching math

- Support participants in taking on math leadership opportunities in their schools

Multi-Faceted Components of the Elementary Math Specialist Program

Teacher Preparation

- Coursework for Teachers
- Practicum

School & Network Engagement

- Teacher Recruitment
- Principal Commitment
- Network Cohorts

State Engagement

- ISBE Endorsement
- Collaboration with Other Districts & Universities

What Does the Partnership Look Like?

Teacher Preparation

Coursework for Teachers

Practicum

University Faculty Role:

- Designing and teaching coursework
- Making graduate credit available

District Staff Role:

- Developing & managing teacher application process
- Identifying and communicating areas of need related to K-5 mathematics

Foundation Role:

- Provide grant funding

What Does the Partnership Look Like?

School & Network Engagement

Teacher Recruitment

Principal Commitment

Network Cohorts

University Faculty Role:

- Providing ongoing guidance
- Teaching at schools within participating Networks

District Staff Role:

- Ensuring alignment to district priorities
- Developing resources to support quality implementation

Foundation Role:

- Provide grant funding

What Does the Partnership Look Like?

State Engagement

ISBE Endorsement

Collaboration with Other Districts & Universities

University Faculty Role:

- Facilitating cross-district events and processes to expand awareness of initiative
- Collaborating with Illinois State Board of Education to draft endorsement language

District Staff Role:

- Developing and sharing models for Elementary Math Specialists
- Supporting university efforts

Foundation Role:

- Support university efforts and share model

Coursework Development

- Collaboration of mathematicians and math educators from the 3 universities
- Informed by collecting data on existing programs
- Grounded in the TRU Math framework
- Scope & sequence aligned to CCSS-M
- Courses
  - 2 year long sequences (Number & Operation, Geometry & Measurement)
  - Leadership Practicum integrated with the final courses

Coursework Design

- Courses model powerful math instruction
  - Teachers work on challenging problems that deepen their own understanding of core elementary math concepts.
  - Teachers experience strategies designed to reach all learners.
  - Teachers reflect on their experiences in papers and/or journals.
- Teachers are encouraged to incorporate new learning into their own practice.

Teaching for Robust Understanding (TRU)

As a result of experiencing this way of learning math, teachers are becoming equipped to create powerful math classrooms for their own students that are aligned to the TRU Math Framework.

The Five Dimensions of Powerful Classrooms				
The Content	**Cognitive Demand**	**Equitable Access to Content**	**Agency, Authority and Identity**	**Uses of Assessment**
The extent to which classroom activity structures provide opportunities for students to become knowledgeable, flexible, and resourceful disciplinary thinkers. Discussions are focused and coherent, providing opportunities to learn disciplinary ideas, techniques, and perspectives, make connections, and develop productive disciplinary habits of mind.	*The extent to which students have opportunities to grapple with and make sense of important disciplinary ideas and their use. Students learn best when they are challenged in ways that provide room and support for growth, with task difficulty ranging from moderate to demanding. The level of challenge should be conducive to what has been called "productive struggle."*	*The extent to which classroom activity structures invite and support the active engagement of all of the students in the classroom with the core disciplinary content being addressed by the class. Classrooms in which a small number of students get most of the "air time" are not equitable, no matter how rich the content: all students need to be involved in meaningful ways.*	*The extent to which students are provided opportunities to "walk the walk and talk the talk" – to contribute to conversations about disciplinary ideas, to build on others' ideas and have others build on theirs – in ways that contribute to their development of agency (the willingness to engage), their ownership over the content, and the development of positive identities as thinkers and learners.*	*The extent to which classroom activities elicit student thinking and subsequent interactions respond to those ideas, building on productive beginnings and addressing emerging misunderstanding. Powerful instruction "meets students where they are" and gives them opportunities to deepen their understandings.*

One Teacher's Perspective

- My involvement in the Elementary Math Specialist Program
- Ways my learning has changed how I think about math.
- Ways in which the program has impacted my teaching practice
- Changes I am seeing in my classroom

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Thank you