

CPS Math Department Strategic Plan

STRATEGIC OBJECTIVES

1

EQUITY

2

PROFESSIONAL LEARNING, CURRICULUM, INSTRUCTION & ASSESSMENT

3

MATH MINDSETS

4

FAMILY & COMMUNITY

5

CONTINUOUS IMPROVEMENT

Provide equity and access to increase opportunity and achievement in mathematics

Provide rigorous, joyful, and culturally responsive learning for students & staff to strengthen instruction for all learners

Provide experiences to show teachers, families, and children that they can “enjoy and succeed in math” (Boaler).

Engage family and community members in school & district math initiatives.

Monitor & advocate for implementation of the strategic plan

Strategic Initiatives

Provide all students with access to challenging math curricula in heterogeneously grouped classrooms.

Prepare educators to lead equitable, discourse-rich classrooms where students engage in the mathematical practices and build procedural fluency through conceptual understanding.

Embed the examination of access, equity, power, & bias in every professional learning opportunity that the math department offers.

Build capacity of all stakeholders to examine racism and injustice in the math classroom and at a systemic level.

Support all schools to continue to teach in heterogeneously grouped classrooms to ensure that all students have access to Algebra standards before entering high school.

Use Five Equity Based Practices in Math as a lens guide instruction and observe math classroom

Facilitate the sharing of teacher and coach practices across classrooms and schools.

Establish robust and coherent coaching that is structured similarly across schools.

Align elementary and middle school curricula based on common primary resources.

Build common understanding among teachers, coaches, and administrators of what high-quality, culturally responsive math instruction looks like to ensure coordinated support and feedback to educators.

Strengthen pedagogical content of knowledge¹ of educators to build deep understanding of the math content & practice standards and how students learn math.

Utilize principles from Universal Design for Learning² to provide differentiated Tier 1 instruction that is accessible to all learners.

Collaboratively develop systematic approaches to intervention that support all students’ meaningful participation in equitable math communities.

Support Effective Use of Data to Improve Instructional Practices.

Expand the vision of math as a creative, discussion-oriented subject in which sensemaking, discussion, and questioning are prioritized and procedures are examined.

Incorporate the use of clinical interviews and protocols for Looking at Student Work into professional learning to broaden definitions of what constitutes math knowledge and to focus educators’ attention on assets rather than deficits.

Expand the use of ambitious instructional routines³ that focus on student sensemaking and equitable interactions in the classroom until all students engage in these routines at least three times per week. Support teachers to adopt equitable practices based on these reasoning routines during all math lessons.

Support community & family members to deeply understand and joyfully engage in mathematics, and to understand why heterogeneous math classes are equitable and offer benefits to all.

Partner with community groups to engage the public in mathematics including ambitious instructional routines.

Regularly engage all members of the community in common mathematical experiences, then reflect on those experiences by thinking about what it means to do math, how to create equitable math classrooms, and what helps us learn math deeply.

Ensure that all stakeholders understand and can speak clearly about the district math plan/initiatives, and welcome opportunities to do math.

Engage stakeholders in creation of and progress monitoring of strategic plan.

Monitor implementation of and progress toward the math department strategic plan three times a year

Partner with OSS and other departments to work toward common goals.

Advocate for (district and school) structures and systems that support math department goals.

Proactively & systematically seek out authentic feedback from students and teachers, especially people of color and others from non-dominant groups, so that those most impacted by this plan are directly describing the effectiveness of implementations and progress/challenges toward our common goals.

Footnotes

¹ Pedagogical Content Knowledge:

Pedagogical content knowledge includes teachers' interpretations and transformations of subject-matter knowledge in the context of facilitating student learning. There are several key elements of pedagogical content knowledge: (1) knowledge of representations of subject matter (content knowledge); (2) understanding of students' conceptions of the subject and the learning and teaching implications that were associated with the specific subject matter; and (3) general pedagogical knowledge (or teaching strategies). The knowledge base for teaching, also includes other elements: (4) curriculum knowledge; (5) knowledge of educational contexts; and (6) knowledge of the purposes of education (Shulman, 1987).

MATHEMATICS OBSERVATION TOOL

5 Equity-Based Practices In Mathematics Classrooms

- 1 Going Deep with Mathematics
- 2 Leveraging multiple mathematical competencies.
- 3 Affirming mathematics learners identities.
- 4 Challenging spaces of marginality.
- 5 Drawing on multiple resources of knowledge (math, culture, language, family, community)

Developed by the Cambridge Public Schools' Math Department
Julie Ward, Katisha John & Heidi Fessenden, 2021

² Universal Design for Learning:

- Universal Design for Learning (UDL) is a way of thinking about teaching and learning that helps give all students an equal opportunity to succeed.
- This approach offers flexibility in the ways students access material, engage with it and show what they know.
- Developing lesson plans this way helps all kids, but it may be especially helpful for kids with learning and thinking differences. (Morin)

³ Ambitious Instructional Routines:

“Ambitious teaching requires that teachers teach in response to what students do as they engage in problem solving performances, all while holding students accountable to learning goals that include procedural fluency, strategic competence, adaptive reasoning, and productive dispositions.” (Kazemi, Franke, Lambert)

