

MONTGOMERY COUNTY PUBLIC SCHOOLS

K-12 Mathematics Work Group

Reconnecting with Our Work
February 2, 2010

Building a shared vision for high-quality mathematics teaching and learning

Work Group Plan: A Research-Based Approach

- ❖ Issue Identification and Problem Statement Development
- ❖ Generate Research Questions
- ❖ Build Capacity and Knowledge Base of the Work Group
- ❖ Create Vision for High-Quality Mathematics Teaching and Learning in MCPS
- ❖ Gap Analysis: Compare MCPS as-is State to the Vision
- ❖ Findings
- ❖ Recommendations
- ❖ Action Plan Development

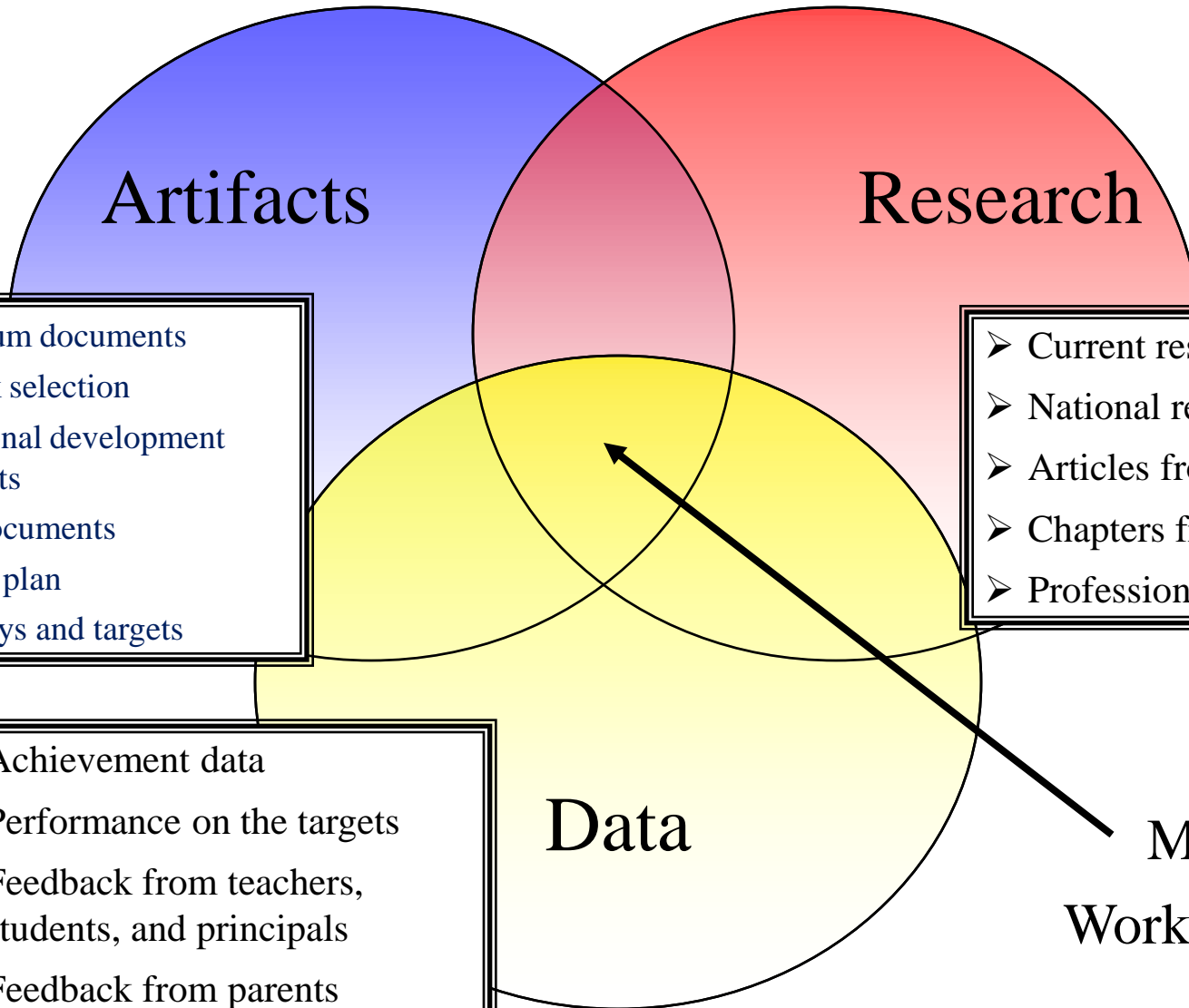
Issues and Interests

- Acceleration Practices
- Curriculum/Assessment Sequencing and Pacing
- Teacher Preparation and Development
- Classroom/Instructional Practices
- Attitudes and Beliefs
- School Structures

Research Teams

1. Curriculum: The Written Curriculum
2. Classroom/Instructional Practices: The Implemented Curriculum
3. Curriculum: The Assessed Curriculum
4. Teacher Preparation and Development: Teaching for Mathematical Proficiency
5. Acceleration Practices: Mathematics Targets and Acceleration

Math Work Group: Conceptual Framework



Artifacts

- Curriculum documents
- Textbook selection
- Professional development documents
- Policy documents
- Strategic plan
- Seven keys and targets

Research

- Current research findings
- National reports
- Articles from journals
- Chapters from books
- Professionals in the field

Data

- Achievement data
- Performance on the targets
- Feedback from teachers, students, and principals
- Feedback from parents

**Math
Work Group**

Curriculum: The Written Curriculum

- ❖ National, state and local documents
 - National standards (NCTM standards and Focal Points), Voluntary State Curriculum, MCPS Curriculum and Indicators
- ❖ Other state standards
- ❖ Sequencing
- ❖ Pacing
- ❖ Textbooks, technology, workbooks, and other resource materials
- ❖ School structures
- ❖ How children and adolescents learn and learn mathematics
- ❖ Mathematics materials and instructional experiences are responsive to the district's racial and ethnic diversity
- ❖ Mathematics materials and instructional experiences reflect attitudes and beliefs that all students can achieve mathematical proficiency

Classroom/Instructional Practices: The Implemented Curriculum

- ❖ Differentiation and grouping practices
- ❖ Teaching basic facts
- ❖ Sequencing
- ❖ Pacing
- ❖ Textbooks, technology, workbooks, and other resource materials
- ❖ School structures
- ❖ Best practices for supporting (all) student learning—student engagement
- ❖ How children and adolescents learn and learn mathematics
- ❖ Mathematics materials and instructional experiences are responsive to the district's racial and ethnic diversity
- ❖ Mathematics materials and instructional experiences reflect attitudes and beliefs that all students can achieve mathematical proficiency

Curriculum: The Assessed Curriculum

- ❖ National, state and local documents
- ❖ National Assessments (NAEP), TN/2, Maryland School Assessment (MSA), High School Assessments (HSA), MCPS Unit and Course Exams
- ❖ Other state assessments
- ❖ Scholastic Aptitude Test and ACT
- ❖ Advanced Placement and International Baccalaureate
- ❖ Assessments that effectively evaluate students' mathematical proficiency across the five strands
- ❖ Mathematics materials and instructional experiences are responsive to the district's racial and ethnic diversity
- ❖ Mathematics materials and instructional experiences reflect attitudes and beliefs that all students can achieve mathematical proficiency

Teacher Preparation and Development: Teaching for Mathematical Proficiency

- ❖ How teachers learn and learn mathematics
- ❖ How children and adolescents learn and learn mathematics
- ❖ Professional development models
- ❖ Developing proficiency in teaching mathematics
- ❖ Teacher preparation
- ❖ Teacher content, pedagogy, and pedagogical content knowledge
- ❖ Mathematics materials and instructional experiences are responsive to the district's racial and ethnic diversity
- ❖ Mathematics materials and instructional experiences reflect attitudes and beliefs that all students can achieve mathematical proficiency

Acceleration Practices: Mathematics Targets and Acceleration

- ❖ Pacing
- ❖ Sequencing
- ❖ Algebra for all?
- ❖ Algebra by when?
- ❖ System targets
- ❖ Algebra 2
- ❖ How children and adolescents learn and learn mathematics
- ❖ Mathematics materials and instructional experiences are responsive to the district's racial and ethnic diversity
- ❖ Mathematics materials and instructional experiences reflect attitudes and beliefs that all students can achieve mathematical proficiency

Sharing – “Speed Dating”

Transition	Date
Go to Assigned Tables (By Number)	Discuss Written Curriculum
Implemented Curriculum - Move 1 clockwise Assessment - Move 1 counter cw	Discuss Teacher Prep and Development
Acceleration – Move 2 clockwise Written Curriculum – Move 2 counter cw	Discuss Implemented Curriculum
Assessment – Move 1 clockwise Teacher Prep and D – Move 1 counter cw	Discuss Acceleration
Written Curriculum – Move 2 clockwise Implemented Curriculum – Move 2 counter cw	Discuss Assessment