



# Plan of Action for Mathematics PreK-12

---

**Baltimore County Public Schools**

**Office of Mathematics PreK-12**

**Pat Baltzley, Director**

**John Staley, Secondary Coordinator**

**Cindy Dennis, Elementary Coordinator**

# What will our graduates look like mathematically?

---

- Mathematically numerate
- Algebraic thinkers
- Problem solvers
- Ready for college or work after high school
- Masters of the HSA Algebra – all students will need to take and PASS the HSA Algebra in order to graduate

We need to have our students prepared!



# PreK-12 Preparation

---

Systemwide curriculum for every grade that affords all students the opportunity to progress through a continuum of mathematics to prepare them for a competence in mathematics

- Knowledge of Algebra, Patterns, and Functions
- Knowledge of Geometry
- Knowledge of Measurement
- Knowledge of Statistics
- Knowledge of Probability
- Knowledge of Number Relationships and Computation/Arithmetic



# PreK-12 Preparation

---

## Goal for PreK-12

The development of algebraic thinking for student success in mastering algebra

# MSA/HSA Results 2004-2005

---

Percent Scoring Proficient or Advanced		
Grade	2004	2005
3	73.1	78.2
4	72.0	77.3
5	61.6	69.9
6	50.8	58.6
7	52.2	57.9
8	47.8	52.6
MSA/HSA Algebra	51.0	50.0



# MSA/HSA Action

---

## MSA/HSA Algebra/Data Analysis in 2004-2005

- 50% of Baltimore County students passed.
- 82% of middle school students passed.
- 25% of high school students passed.
- 11% of special education students passed.

In 2006, the AYP for mathematics will be based on the students' performance on the HSA Algebra/Data Analysis.

The Classes of 2009 and beyond are required to pass the HSA Algebra/Data Analysis in order to graduate.



# Prior Actions

---

- 2000-2004
  - Aligned Algebra I curriculum to the Core Learning Goals
  - Eliminated all low-level mathematics courses
  - Created countywide unit summative assessments
  - Provided professional development to teachers on the specifics of the HSA and rangefinding
  - Backward mapped Algebra I curriculum into grades K-8



# Prior Actions

---

- 2004-2005
  - Revised Algebra I curriculum with support from a new textbook
  - Revised unit assessments and created benchmarks to monitor students' progress toward mastering the Core Learning Goals
  - Provided a week-long professional development for all Algebra I teachers
  - Continued to support algebra concepts introduced in the elementary grades

# The Action for 2005-2006

---

- Implement a revised Algebra I county program
- Monitor the implementation of new courses, *Algebra and Data Analysis Adapted* and *Algebraic Functions Adapted*
- Implement countywide benchmarks and school-based short-cycle assessments
- Provide sustained, high quality professional development
- Provide support to priority schools
- Pilot the Algebra I course of the Grade 9 Concepts of Physical Science as Applied to Biology program



# The Action for 2006-2007

---

- Continue to monitor the effective implementation of the BCPS Algebra I curriculum
- Continue to offer sustained, high-quality professional development for all Algebra I teachers
- Continue to analyze data and support students through the administration of the countywide benchmarks
- Continue to provide support to priority schools

# MSA/HSA Results 2004-2005

---

Percent Scoring Proficient or Advanced		
Grade	2004	2005
3	73.1	78.2
4	72.0	77.3
5	61.6	69.9
6	50.8	58.6
7	52.2	57.9
8	47.8	52.6
MSA/HSA Algebra	51.0	50.0



# MSA/HSA Action

---

- As our scores at each grade level continue to increase each year, consideration needs to be made for the increasing difficulty of content from grade to grade
- The BCPS middle school mathematics program must provide all of our students with the learning necessary to be prepared for success with Algebra I in grade 9



# Prior Actions

---

- 2002-2005
  - Aligned countywide middle school curricula to the Voluntary State Curriculum
  - Created MSA resources for use in classrooms
  - Created benchmarks to monitor the progress of students towards mastery of the VSC
  - Established cohorts for teacher to become highly qualified
  - Developed a rigorous Pre-algebra course for grades 7 and 8
  - Provide support for priority schools



# The Action for 2005-2006

---

- Strengthen the alignment of the current middle school curriculum to the Voluntary State Curriculum
- Monitor the implementation of the countywide Pre-algebra program
- Provide resources for MSA review for all schools
- Provide sustained, high-quality professional development for all middle school teachers
- Continue to support priority schools

# The Action for 2006-2007

---

- Review of Middle School Program
  - With a focus on results for special education and English Language Learners
- Proposal in FY07 Budget for *Algebraic Thinking* for Grades 6 and 7
- Continuation of programs to improve highly qualified status of middle school teachers
- Sustained, high quality professional development

# MSA/HSA Results 2004-2005

---

Percent Scoring Proficient or Advanced		
Grade	2004	2005
3	73.1	78.2
4	72.0	77.3
5	61.6	69.9
6	50.8	58.6
7	52.2	57.9
8	47.8	52.6
MSA/HSA Algebra	51.0	50.0



# MSA/HSA Action

---

- Strong elementary MSA Scores that continue to increase
- Development of content knowledge of elementary teachers that promotes understanding of mathematics by all students
- Development of algebraic thinking that provides foundation for Algebra I success



# Prior Actions

---

- 2000-2005
  - Aligned curricula to the Voluntary State Curriculum
  - Created planning grids to support instruction in the elementary classrooms
  - Developed unit summative assessments to help teachers monitor students' progress towards mastery on the MSA
  - Provided professional development for all teachers in content and MSA specifics
  - Hired STEM resource teachers for 38 schools
  - Established cohorts for teachers to increase their mathematics content knowledge



# The Action for 2006-2007

---

New Elementary Mathematics  
Textbook Program

## **Grades 1-5**

Scott Foresman-Addison Wesley  
Core Basal Textbook

Blended with  
**Blended with**  
*Investigations*

**Kindergarten** – *Investigations* exclusively



# The Action for 2006-2007

---

- Provide for key staff development to emphasize components of the program
- Revise the Planning Grids, Summative Assessments, and Assessment Calendars
  - Align with Voluntary State Curriculum
  - Backwards map from Algebra I
  - Develop number sense and algebraic thinking
- Continue with extensive, regular professional development
- Pilot Project SEED in identified schools to promote mathematical discourse



## *Blueprint for Progress*

---

- Mathematics achievement for ALL students
- Necessary support provided for ALL students
- Content knowledge and pedagogy for ALL teachers
- Sustained professional development
- Rigorous coursework for ALL students