

Proposed Accelerated Mathematics Pathways in MPCSD



Agenda

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- Process for Recommendations
- MPCSD Assessment Data
- Traditional and Integrated Pathways /SUHSD Decisions
- History of Acceleration/Considerations
- Proposed Acceleration Options
- Long Term Solutions/Challenges
- Next Steps

Process for Recommendations

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- Discussed Math interests with the District Leadership Team
- Reviewed SUHSD possible CCSS Mathematics aligned high school course pathways
- Investigated CCSS high school pathways affect on middle school course offerings and acceleration
- Reviewed current MPCSD pathways for acceleration and assessment data
- Reviewed Menlo Atherton High School's current Mathematics offerings
- Reviewed similar neighboring districts' proposed CCSS mathematics course pathways

CST History Grades 7-8

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- 70.7% of 7th grade took the General Math Assessment (n=203)
- 24.7% of 7th grade took the Algebra assessment (n=71)
- 33.2 % of 8th grade took a General Math Assessment (n=77)
- 49.1% of 8th grade took 8th grade Algebra (n=114)
- 17.7 % of 8th grade took Geometry (n=41)
- 66.8 % of 8th grade took either Algebra or Geometry (n=155)

MPCSD MARS Assessment Data 2013

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Grade	% At or Above Proficient
Grade 2	85%
Grade 4	84%
Grade 6	49%

2012 to 2013 Advanced Levels on MARS Assessment

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	2012 MARS Advanced	2013 MARS Advanced	Difference
Grade 2	51%	62%	+ 11%
Grade 4	45%	57%	+ 12%
Grade 6	40%	14%	- 26%

2012 CST/MARS Comparison

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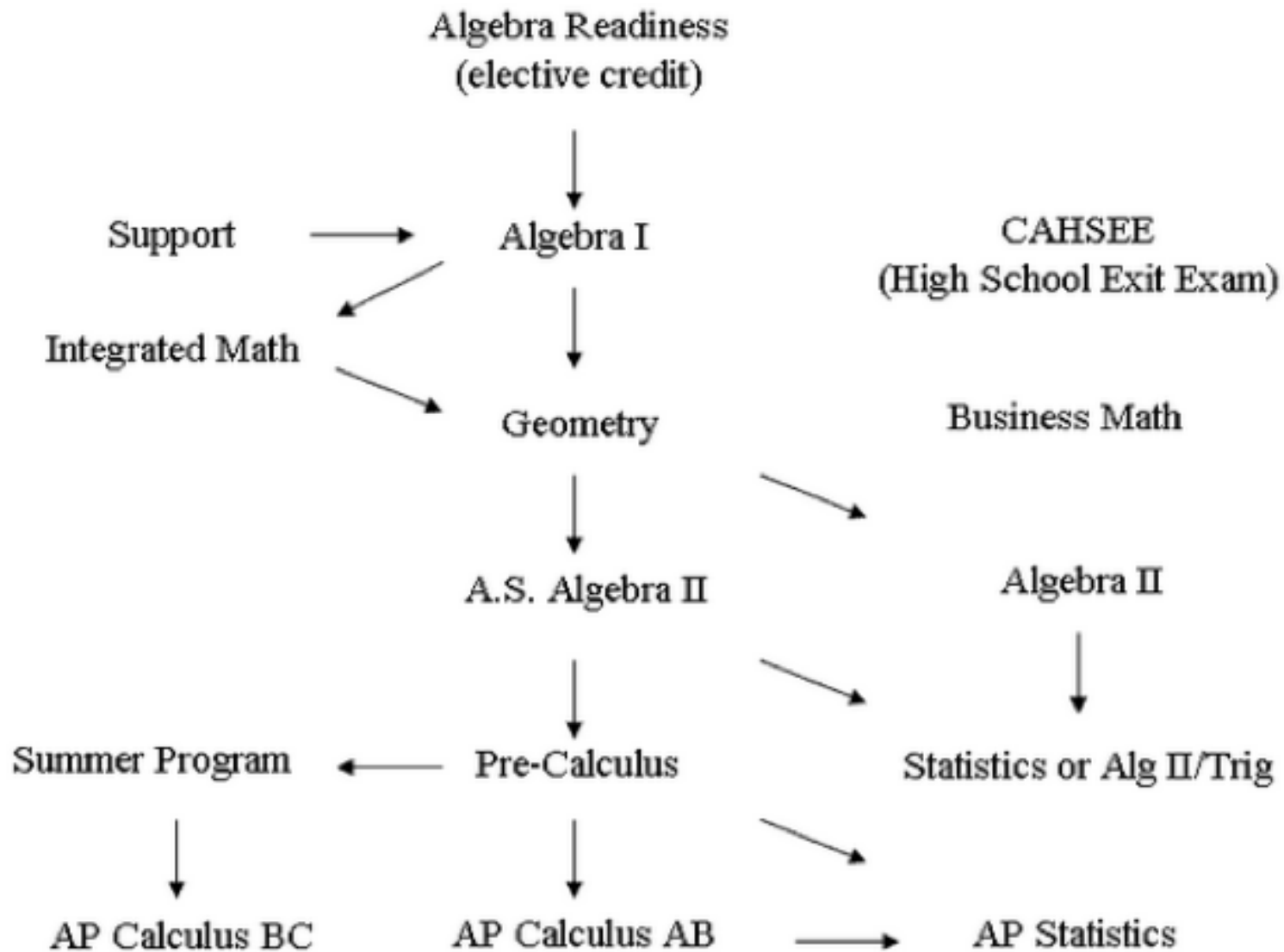
	CST Advanced	MARS Advanced	Advanced on Both	Difference CST & Both
Grade 2	73%	51%	47%	26%
Grade 4	75%	45%	43%	32%
Grade 6	59%	40%	21%	38%

2013 CST/MARS Comparison

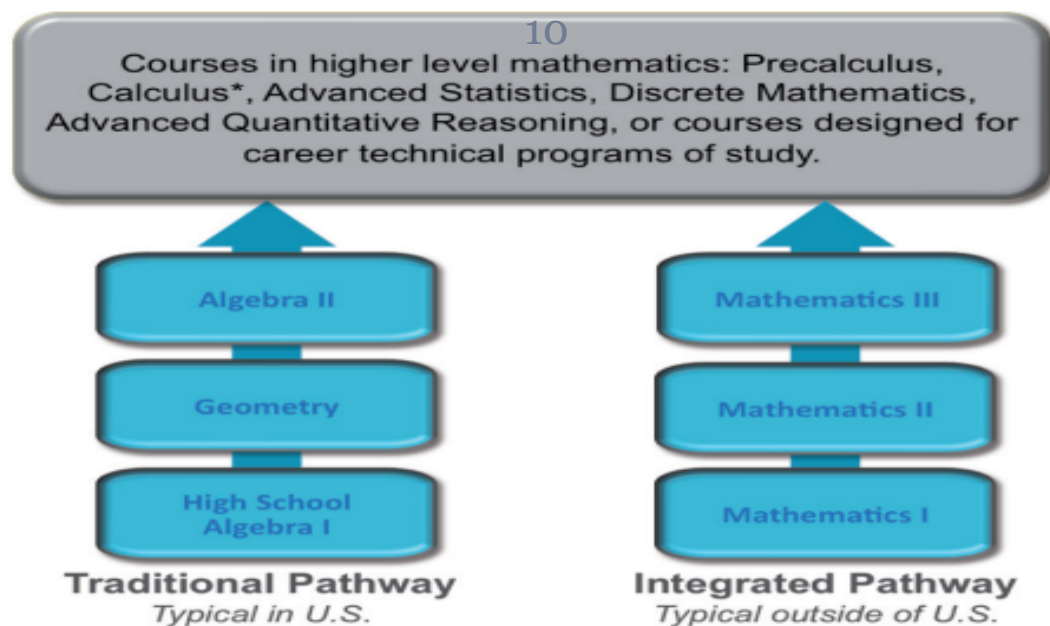
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	CST Advanced	MARS Advanced	Advanced on Both	Difference CST & Both
Grade 2	66%	62%	53.8%	12.2%
Grade 4	74%	57%	55%	19%
Grade 6	65%	14%	13.7%	51.3%

Menlo-Atherton Current Pathways



Two Pathways



◆ *Traditional Pathway*

2 Algebra courses, 1 Geometry course, with Probability and Statistics interwoven

◆ *Integrated Pathway*

3 courses that attend to Algebra, Geometry, and Probability and Statistics each year

Single Subject Course

Algebra 1

Modeling with
Functions
Linear Functions
Linear Equations
and Inequalities in
One Variable
Linear Equations
and Inequalities in
Two Variables
Quadratic
Functions
Quadratic
Equations
Statistics

Geometry

Constructions
Rigid Motions
Geometric
Relationships
Similarity
Coordinate
Geometry
Circles and Conics
Measurement and
Dimensions
Trigonometric
Ratios
Geometric
Modeling

Algebra 2

Exponential
Functions
Trigonometric
Functions
Rational and
Polynomial
Expressions
Probability
Statistics

Integrated Course

Math 1

Modeling with Functions
Linear Functions
Linear Equations and Inequalities in One Variable
Linear Equations and Inequalities in Two Variables
Constructions
Rigid Motions
Geometric Relationships
Statistics

Math 2

Coordinate Geometry
Quadratic Functions
Quadratic Equations
Similarity
Circles and Conics
Geometric Modeling
Probability

Math 3

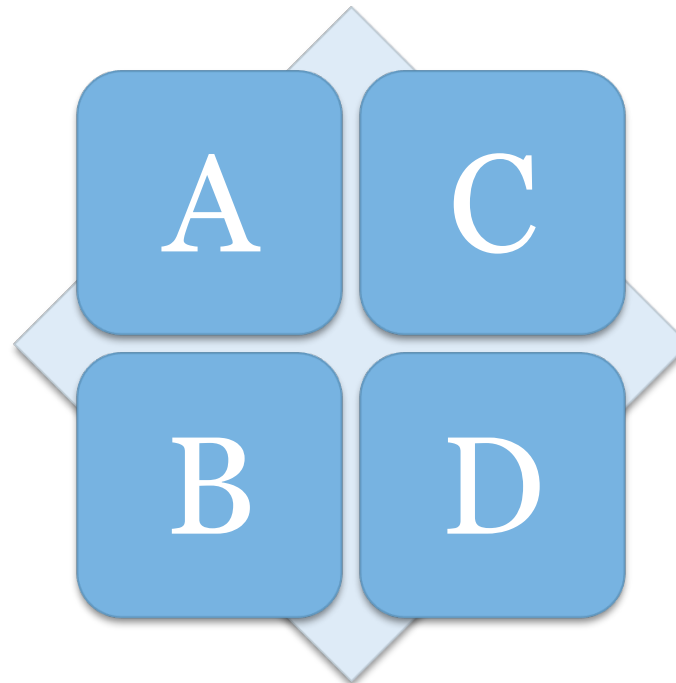
Measurement and Dimensions
Exponential Functions
Trigonometric Ratios
Trigonometric Functions
Rational and Polynomial Expressions
Statistics

Pathway Decision Matrix

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Traditional Course
Name

Integrated Name



Traditional
Pathway

Integrated
Pathway

A= Alg 1, Geo, Alg 2
+same pathway

B= N/A

C= Alg 1/ Geo/Alg 2
with Integrated
pathway

D= Math 1, Math 2,
Math 3

Sequoia Union High School District Decisions

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- SUHSD set to decide on Traditional or Integrated Pathway and naming of courses January 2014
- Our high school level courses will mirror the high school level courses
- We will be follow CCSS up to high school courses
- At the time our students take a high school course, we will follow SUHSD.

History of Acceleration at 5th Grade

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- Mathematics instruction grouping in MPCSD shifted in 2009 from ability grouping to heterogeneous grouping in all grades K-4 with an accelerated option for advanced 5th grade students
- Acceleration options include skipping courses

Before Moving to Accelerated Pathway

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Moving forward with CCSS, acceleration by compaction (3 years into 2 years) not skipping courses

Must require solid evidence of :

- Conceptual understanding
 - Procedural skills
 - Fluency
- Ability to apply mathematics

Compacted Courses

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- Compacted courses include the same CCSS standards as non-compacted courses
- Compacted courses do not sacrifice focus on mathematical practice
- Students should spend enough time to learn concepts thoroughly

Where to accelerate?

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- Decisions about acceleration and ability grouping are still the decision of local districts
- As we implement the Common Core we will maintain our past practice of single and double acceleration

MPCSD Acceleration Options

PATH	PATH NAME / GRADE LEVEL	K-4	5	6	7	8	9	10	11	12
MPCSD Current Pathways (courses considered advanced are in GREEN)										
A	MPCSD Grade-Level Sequence	K-4	5	6	PRE ALG	MS ALG	ALG 1	GEO	ALG 2	PC/AP STATS/IB MS
B	MPCSD 1X ADV Sequence	K-4	5	6 (ADV)	PRE ALG (ADV)	ALG 1	GEO	ALG 2	PC	CALC Y1
C1	MPCSD 2X ADV Sequence #1	K-4	5	PRE ALG (ADV)	ALG 1	GEO	ALG 2	PC	CALC Y1	CALC Y2
C2	MPCSD 2X ADV Sequence #2	K-4	6 (Skip 5)	PRE ALG (ADV)	ALG 1	GEO	ALG 2	PC	CALC Y1	CALC Y2
Proposed Pathways (courses compressed are in RED)										
D	CCSSM Grade-Level Sequence	K-4	5	6	7	8	A1/M1	Geo/M2	A2/M3	PC/AP STATS/IB MS
E1	CCSSM 1X ADV Sequence #1	K-4	5, 6, 7		8	A1/M1	Geo/M2	A2/M3	PC	CALC Y1
E2	CCSSM 1X ADV Sequence #2	K-4	5	6	7, 8, A1/M1		Geo/M2	A2/M3	PC	CALC Y1
F	CCSSM 2X ADV Sequence	K-4	5, 6, 7		8, A1/M1, Geo/M2		A2/M3	PC	CALC Y1	CALC Y2
Rare 3x Accelerated Pathway										
G	ES MS HS Acceleration #3	K-4	5, 6, 7		8, A1/M1, Geo/M2		M3, PC	CALC Y1	CALC Y2	MVC/ ODE/LA

New MPCSD Acceleration Model

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- Reconfigure math in grades 5, 6, 7, 8
- Align with Common Core Standards
- Create accelerated pathways for qualified students in Grade 5 or 7
 - CCSSM 1X ADV Sequence #1 in grade 5
 - CCSSM 1X ADV Sequence #2 in grade 7
 - CCSSM 2X ADV Sequence in grades 5 & 7

Challenges/Concerns

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- Because of the rigor of CCSS Grade 8, recalibration of course sequencing needed to ensure students can master additional content
- Must ensure sequence of courses guides students to mastery of CCSS in Math by end of 8th grade.
- There will be no skipping of courses, just compacting
- Careful planning necessary to ensure all content and practice standards are fully addressed
- Strong articulation needed middle school & elementary schools
- Lack of transitional instructional materials
- Parent communication

Big Questions

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- How will we create an implementation plan that will allow for teacher and student readiness?
- What would the plan look like for 2014-15?

Next Steps

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- Gaining deep knowledge of Common Core Standards and Mathematical practices for teachers/students
- Developing Math Pathways Implementation and Professional Development Plan
- Determining new multiple measures for Mathematics
- Identify criteria for acceleration
- Exploring accelerated options to ensure access for all students (Summer School, online courses)
- Acquiring transitional instructional materials
- Building technology readiness for Smarter Balanced Assessment

Next Steps

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- Work with Leadership Team as a PLC
- Build upon existing work from the 2012-13 Math Goal Team
- Leverage Math teacher leaders and our work with Spotlight on Success (SVCF) participants to continue to build teacher capacity