Sacramento City Unified School District

SACRAMENTO CITY UNIFIED SCHOOL DISTRICT
BOARD OF EDUCATION

Agenda Item# 9.1

Meeting Date: April 24, 2014

Subject: Common Core State Standards (CCSS) Secondary Mathematics Course Sequence

- X Information Item Only
- ☐ Approval on Consent Agenda
- ☐ Conference (for discussion only)
- ☐ Conference/First Reading (Action Anticipated: _____)
- ☐ Conference/Action
- ☐ Action
- ☐ Public Hearing

Division/Department: Academic Office /Curriculum and Instruction

Recommendation: None

Background/Rationale:
At the high school level, to ensure a strong foundation and preparation for post-secondary success, districts may organize the Common Core State Standards (CCSS) for Mathematics via one of two pathways as defined by a panel of national experts. The pathways include a traditional approach, which is typically seen in the United States that consists of Algebra I, Geometry, and Algebra II, with some data, probability and statistics included in each course. In addition, it includes an integrated approach, which is typically seen outside the US that consists of a sequence of three courses (Math 1, Math 2, and Math 3), each of which includes number, algebra, geometry, probability and statistics.

This district has engaged in a rigorous process to determine the pathway that would better serve its students. This process included engaging teachers, principals, and parents in the examination of the pathways and their feasibility as well as a review of research-based practices in mathematics instruction at both the national and international levels. Each stakeholder group strongly believed that the implementation of an integrated mathematics pathway option would be more advantageous for students reaching the college- and career-ready goal line. Hence, starting in 2014-15 school year, the district will begin its transition to an integrated pathway with Math 1.

Financial Considerations:
An allocation ($1,182,000) of Title-I dollars and funds provided by the state to support Common Core State implementation is earmarked for instructional materials and instructional coaching/support to ensure a quality implementation of the CCSS mathematics pathway.

Documents Attached:
- Executive Summary
- Pathway Options
- Secondary Mathematics Course Sequence

Estimated Time of Presentation: 20 minutes
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Approved by: Sara Noguchi, Ed.D., Interim Superintendent

Board of Education Executive Summary
Common Core State Standards (CCSS)
Secondary Mathematics Course Sequence
April 24, 2014

Sacramento City Unified School District

I. Overview of the CCSS Secondary Mathematics Pathways

In 2010, the California State Board of Education adopted the Common Core State Standards (CCSS), joining 45 other states and the District of Columbia. The standards outline common, rigorous learning expectations in English Language Arts (ELA) and mathematics. They are college- and career-ready standards that are internationally benchmarked and anchored in research. The standards clearly define what students should know and be able to do each year and upon graduation.

At the high school level, the CCSS for mathematics call on students to practice applying mathematical ways of thinking to real world issues and challenges; require students to develop a depth of understanding and ability to apply mathematics to novel situations, as college students and employees regularly are called to do; and emphasize mathematical modeling, the use of mathematics and statistics to analyze empirical situations, understand them better, and improve decisions. To this end, a national panel of experts has defined two pathways as to how districts may organize the standards into courses to ensure a strong foundation and preparation for post-secondary success. The pathways include a traditional approach, which is typically seen in the United States that consists of Algebra I, Geometry, and Algebra II, with some data, probability and statistics included in each course. In addition, it includes an integrated approach, which is typically seen outside the US that consists of a sequence of three courses (Math 1, Math 2, and Math 3), each of which includes number, algebra, geometry, probability and statistics.

Sacramento City Unified School District (SCUSD) has engaged in a rigorous process to determine which pathway would better serve its students. This process included engaging teachers, principals, and parents in the examination of the pathways and their feasibility as well as a review of research-based practices in mathematics instruction nationally and internationally. Each stakeholder group strongly believed that the implementation of an integrated mathematics pathway option would be more advantageous for students reaching the college- and career-ready goal line. Hence, starting in 2014-15 school year, the district will begin its transition to an integrated pathway with Math 1.

II. Driving Governance

At the heartbeat of Pillar One of the district's Strategic Plan 2010-14 is the charge to prepare all students for college and career. Undergirding this charge is the imperative to ensure that students are able to compete on a national as well as international playing field in a world that

is rapidly changing, technology-driven, and increasingly globally interconnected. Thus, a revision of the district's mathematics sequence is needed to afford students access to the knowledge, skills, and understandings needed for future academic and career success.

III. Budget

The budget that supports the implementation of the CCSS mathematics pathway includes instructional materials plus instructional coaching and support. Funds provided by the state to support Common Core State implementation and Title I are used to finance the work.

• Integrated Math I Instructional Materials (Common Core State Funds) • Mathematics Training Specialists (Title I)	$682,000 $500,000
Total	$1,182,000

IV. Goals, Objectives and Measures

The district is fully committed to implementing a college- and career-ready curriculum designed to ensure students graduate with a solid post-secondary mathematics foundation. Its goal is to empower and engage both school-based and district staffs in strengthening their understanding of the CCSS as a means of yielding high levels of student learning. The district endeavors to implement the standards with fidelity and provide an infrastructure of support based on research, reform initiatives, and exemplary practices. This includes quality professional learning that is continuous and fosters a deepening of subject matter knowledge and a greater understanding of learning for improving classroom practice and student learning, as well as customized, targeted supports for students who may not be making sufficient and timely progress. Standards-aligned instructional materials, comprised of a blended model of print and digital media, are embedded within the infrastructure of support.

Using multiple measures, the district will assess the quality and effectiveness of the implementation of the CCSS and more specifically, the secondary integrated mathematics pathway. Student achievement will be assessed using standardized measures such as the California Assessment of Student Performance and Progress (CAASPP) as well as locally developed benchmark assessments. The quality of the professional learning and the fidelity of implementation of the instructional materials will be determined via perception data through

surveys, evaluations of professional learning, observations of instruction in the classroom, and examination of student work. All results will be used to inform programmatic and systematic changes.

V. Major Initiatives

SCUSD instituted a multi-pronged approach to determine an appropriate pathway for secondary mathematics courses which included convening a committee of mathematics teachers, conducting focus group sessions with mathematics teachers who did not serve on the committee, meeting with school leaders, and engaging with various parent/community stakeholder groups.

Math Pathway Committee

The district convened a committee of secondary mathematics teachers who met from October, 2012 to February, 2013 to engage in a thorough analysis of the pathway options. Each secondary school was invited to send representatives to serve on the committee and the team was comprised of representatives from nine high schools and five middle schools. District math training specialists facilitated the committee meetings which included engaging committee members in deeper learning of the CCSS for mathematics, analyzing the similarities and differences between the traditional and integrated pathways, and assessing the strengths and challenges of implementing each approach in the unique context of SCUSD. Moreover, committee members created a potential sequence of units for Integrated Math 1 in order to create a vision as to what Integrated Math 1 would look like, and generated ideas for placement criteria into advanced courses.

Teacher Focus Groups

In addition to the committee meetings, district math training specialists met with focus groups of teachers by attending site-based Common Planning Time sessions and/or department meetings. Teacher leaders serving on the Math Pathways Committee also facilitated meetings with math teachers at their respective sites. These meetings were designed to provide a wider range of teachers with information about the math pathway options and to gather additional data to inform the committee's recommendation.

Leadership Engagement

District leadership and math training specialists also met with site-based leaders to dialogue about the secondary math pathway options. A component of the sessions focused on building principals' knowledge and included making comparisons between the pathways. The principals were informed of the Math Pathway Committee's recommendation and engaged in a question and answer session to clarify the information provided, voice concerns, and analyze the

strengths and challenges of the recommended approach. They discussed a potential timeline for phasing in an integrated approach and suggested a three year-process. Principals reached consensus and concluded that an integrated approach was most advantageous for students' mathematics achievement and success.

Stakeholder Engagement

The district engaged various stakeholder groups in discussions about the Math Pathway Committee's recommendation of an integrated approach to mathematics. Presentations were made to parent advisory groups including the District English Language Advisory Group (DELAC), the Community Advisory Group (CAC), and the GATE Advisory Committee. In addition, district leadership met with groups of parents participating in the Parents as Partners program and gathered feedback about the recommendation from parent and community members serving on the Achievement Gap Coalition. These meetings were structured to provide information about the similarities and differences between a traditional approach and an integrated approach to mathematics as well as to answer questions, gather ideas, and hear different perspectives on the infrastructure needed to support implementation.

VI. Results

Meetings with an array of stakeholder groups indicated strong support for the implementation of an integrated approach to mathematics instruction in SCUSD. A major impetus for the decision to select an integrated mathematics pathway at the secondary was the potential impact doing so would have on ensuring that students are college and career ready. Specific components of an integrated approach that influenced the decision include the following:

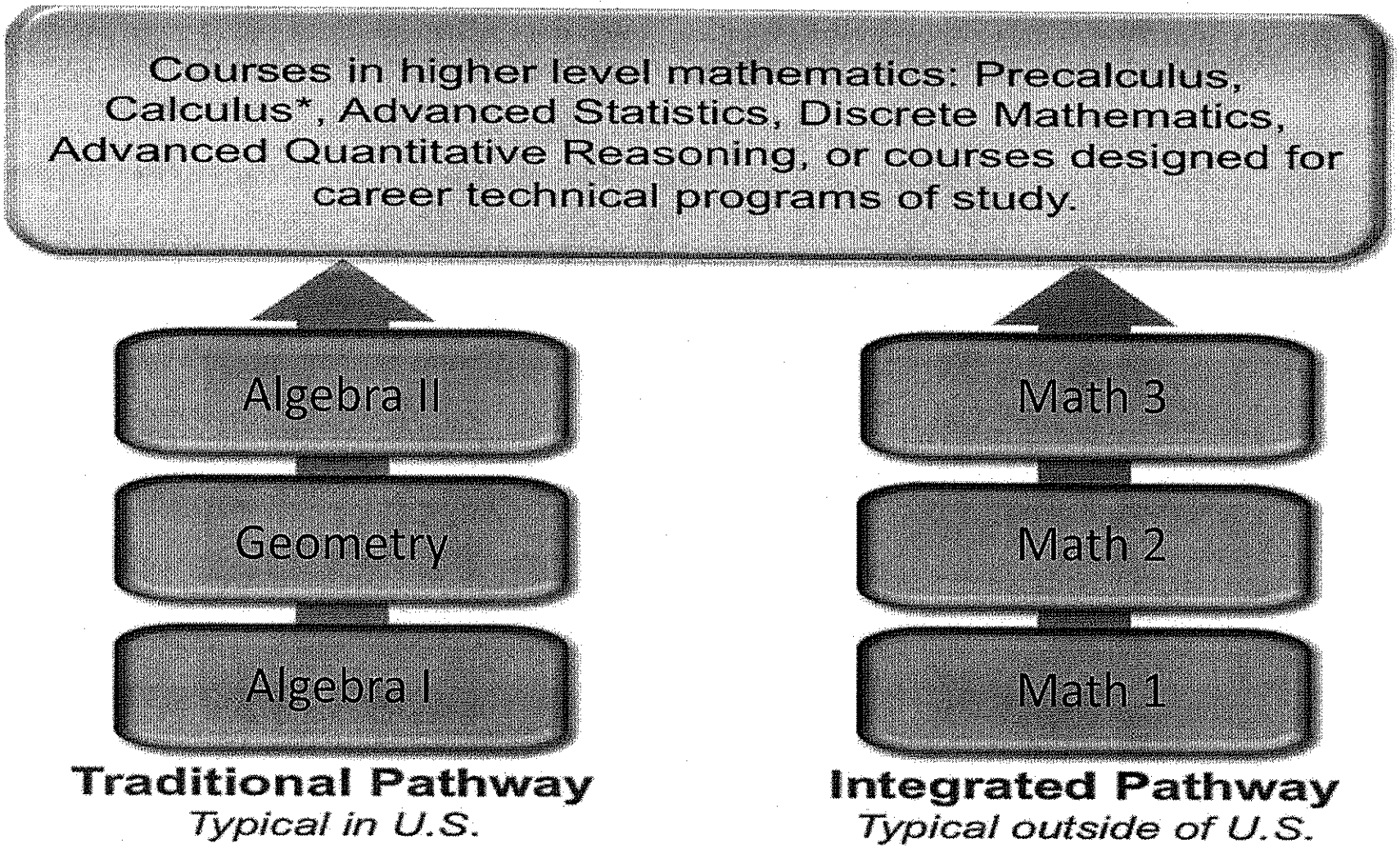
- The structure of the integrated pathway allows students to revisit number, algebra, geometry, probability and statistics content each year. This will support students in seeing the connections between the content and the courses taken in subsequent years. Teachers believed this would alleviate the issue of students forgetting concepts which is often the case in a traditional pathway of math courses (i.e., Algebra I, Geometry, and Algebra II).
- The sequence of the integrated pathway provides a deeper immersion into the foundational skills and concepts of algebra and geometry which build a stronger foundation for the subsequent courses.
- An integrated approach at the secondary level is congruent with the organization of the K-8 mathematics standards allowing seamless transition from elementary to secondary.

VII. Lessons Learned/Next Steps

Next steps in the district's implementation of an integrated mathematics course sequence at the secondary level include, but are not limited to the following:

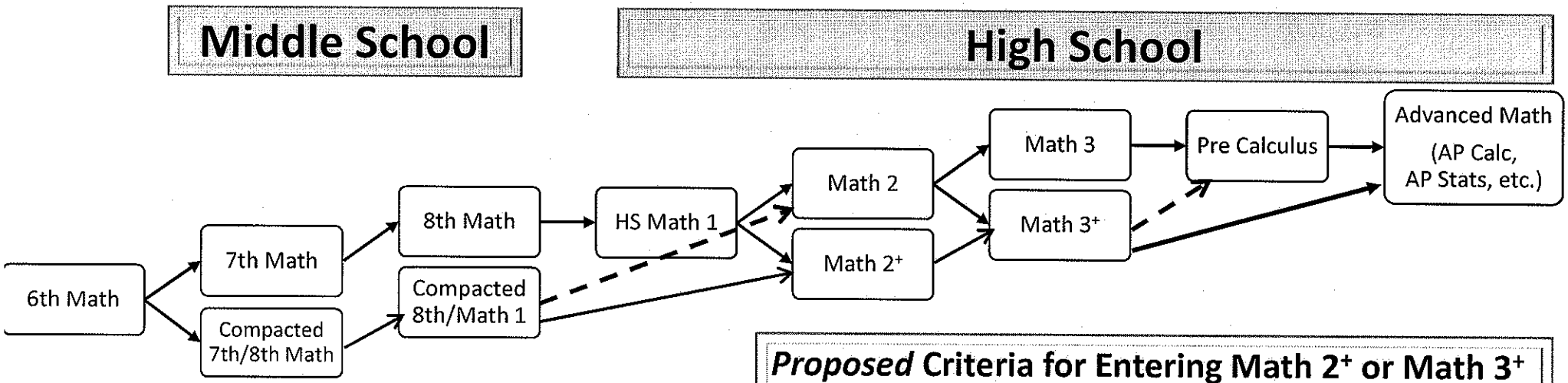
- Continue to provide professional learning for leaders, teachers, instructional aides, and support staff that will deepen their ability to provide integrated instruction of the CCSS for mathematics.
- Develop CCSS-aligned curriculum maps/courses of study for all math courses at the secondary level.
- Refine the district's CCSS-aligned assessment practices including the development of benchmark assessment items and scoring processes.
- Implement instructional supports and interventions during the school day, before/after school, and summer for students who are not making sufficient progress in mathematics.
- Convene grade-level teams (grades K- 9) to engage in the process to review and adopt instructional materials for mathematics and seek Board approval of recommended instructional materials.
- Expand stakeholders' communication and engagement.

High School CCSS-Math Pathway Options



Sacramento City Unified School District
Putting Children First

Secondary CCSS-Mathematics Course Sequence



***Proposed* Criteria for Entering Math 2+ or Math 3+**

- Student Choice
- An "A" or "B" in Previous Course
- SBAC Performance
- District Interim Assessments
- Parent Recommendation/Support
- Teacher Recommendation

- Students can accelerate in middle school by compacting 3 years of math within 2 years: Compacted 7th/8th Math and Compacted 8th/Math 1.
- Students can advance in high school by taking Math 2+ and Math 3+, which include additional standards that prepare students for advanced courses in mathematics, like AP Calculus and AP Statistics.