Oregon Mathways Initiative

2+1 Model

Background

Students are required to have three credits of high school math based on the Common Core State Standards (CCSS) for Mathematics to qualify for an Oregon High School Diploma. A student must also demonstrate the Essential Skill they can apply mathematics in a variety of settings. The Essential Skill is commonly demonstrated through the Oregon Smarter Balanced Mathematics Assessment (SBAC), but can also be demonstrated through other approved assessments or work samples.

The Oregon Department of Education (ODE) does not define which courses students must complete to meet graduation requirements. A common option for students is a sequence of Algebra 1, Geometry, and Algebra II (AGA). This sequence occurs in 90% of high schools across the United States and was first recommended in 1892. Multiple national reports bring the value and effectiveness of the AGA sequence into question.

The CCSS for Mathematics have been in place since 2010 and SBAC has been the statewide mathematics assessment since the 2014-2015 school year. No more than 34% of high school students have achieved a level 3 or 4 on the SBAC assessment during the years that it has been used. Level 3 is considered to be the lowest level for proficiency. Statewide course-taking patterns show that about 15% of student in high school are taking math classes that are not high school content.

Oregon's experience in mathematics is a reflection of what is happening across the nation. A number of national reports, highlighted in the resources section below, call for a change in high school mathematics. The Oregon 2+1 Model is one way at accomplishing change by:

- Providing opportunities for students to develop a solid understanding of core mathematics concepts and procedures necessary for college and career readiness.
- Exposing students to deeper learning of mathematics through complex applications that align to student needs and interests.
- Helping students see their mathematics education as accessible, meaningful, challenging, and interesting.

The 2+1 Model

The 2+1 Model (Figure 1) for high school mathematics breaks from the tradition of a single sequence of high school math courses to a two-credit core of high school mathematics followed by at least one credit of high school math that addresses student interests and aspirations. The core is tightly focused on algebra, geometry, and statistics necessary for all students to be college and career ready. For most students, the three credits would be taken during the first three years of high school. Some schools may choose to provide accelerated options or options to take additional high school level mathematics beyond the initial three credits.

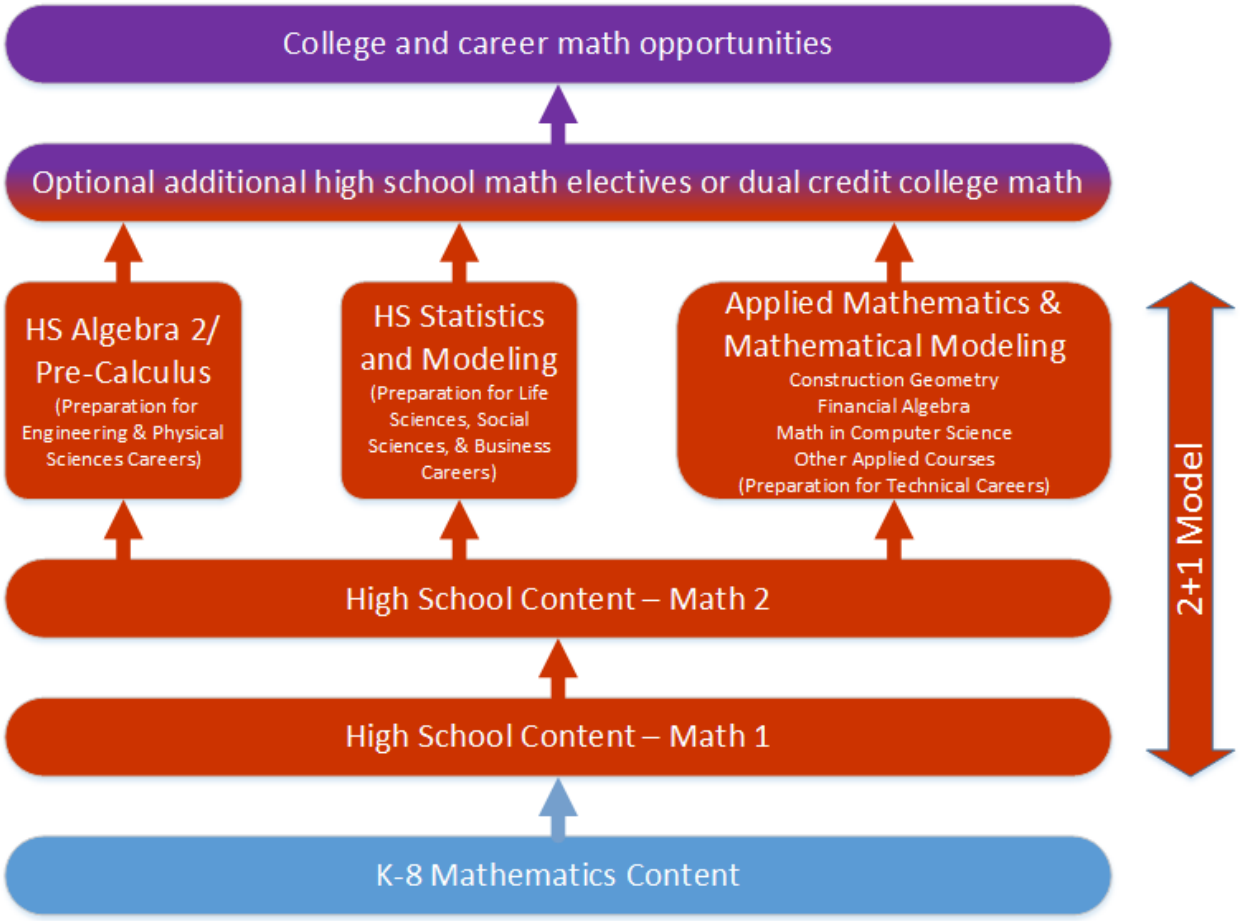

Figure 1 - Diagram of the 2 + 1 Model showing connections to K-8 math and math beyond the first three credits in high school.

Change in Pedagogy

Embodied in the 2+1 Model is a change in the way students interact with mathematics instruction. The first two credits of high school math should include exposure to applications that engage students, connect to math practices, and provide opportunities for deeper conceptual understanding. A more focused set of standards will open space in the curriculum to explore mathematics that is accessible, meaningful, and challenging.

Resources

Catalyzing Change in High School Mathematics: Initiating Critical Conversations

Degrees of Freedom: Diversifying Math Requirements for College Readiness and Graduation

Contact

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