

Background

Oregon students are required to earn three credits of high school math based on the [2021 Oregon Mathematics Standards](#) to earn an Oregon Diploma. A common option has been completion of a sequence of Algebra 1, Geometry, and Algebra II (AGA). The traditional AGA sequence often does not take into account advances in such fields as computer science, data science, and mathematical modeling.

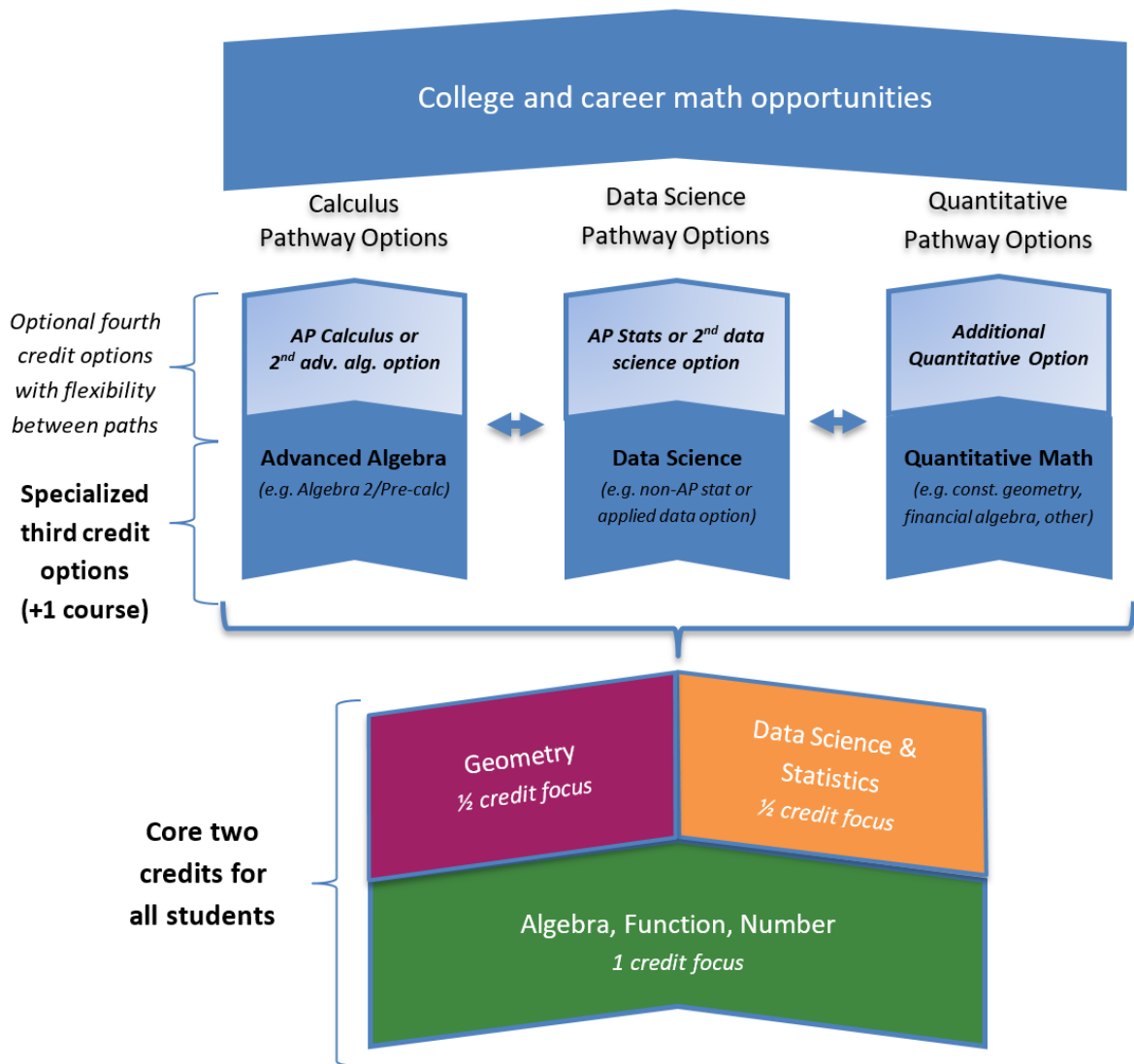
Oregon's experience in mathematics is consistent with what is happening across the nation. In many career sectors, the demands of the 21st century workplace have shifted away from a focus on knowledge of mathematical concepts and procedures toward the application of mathematical tools, the modeling process, and communicating with mathematical reasoning. A number of national reports call for a change in high school mathematics (see the resources section below). To help facilitate this change, Oregon educators and leaders have revised the 2021 Oregon Mathematics Standards to create the conditions for a two-credit core high school math experience for all students, followed by a third-credit course option designed to align with students' postsecondary plans. This 2+1 Model will support needed changes by:

- Providing opportunities for students to develop a solid understanding of core mathematics concepts and procedures necessary for future education and careers.
- Exposing students to deeper learning of mathematics through complex applications that align to student needs and interests.
- Building students' identities as capable mathematicians through learning experiences that are 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 that addresses student future education and career aspirations. The 2021 mathematics standards support a two-credit core balanced between 1 credit of algebra, $\frac{1}{2}$ credit of geometry, and $\frac{1}{2}$ credit of data/statistics content necessary for all students to be prepared for a range of education and career options beyond high school. Although the diagram describes the model in terms of the familiar AGA sequence, districts may choose to apply other sequences that address the standards. This could include a fully integrated approach. The overall purpose of the model is to open more opportunities for students to explore rigorous mathematics aligned to their desired futures.

Figure 1 - Diagram of the 2 + 1 Model showing one possible sequence for the first three credits in high school mathematics



Change in Instructional Practices

Embodied in the 2+1 Model is a change in the way students engage with mathematics. The core two credits of high school math should include exposure to relevant applications, connect to math practices, and provide opportunities for deeper conceptual understanding. The 2021 mathematics standards provide more instructional space to explore mathematics in new ways that make mathematics more accessible, meaningful, and challenging while still addressing what is necessary for future college and career options. The third credit should build on the core by creating opportunities for students to apply mathematics and mathematical practices to authentic problems within contexts relevant to their postsecondary goals.

Change in Placement Practices

Implementation of the 2+1 Model may require districts to rethink existing course placement practices. All students should have access to a rigorous set of courses and supports that help develop procedural fluency, conceptual understanding, and an ability to apply mathematics in meaningful context. Existing placement practices should be examined to assure all students have access to math identified in the high school standards as well as opportunities to explore mathematics beyond those standards.

Where to Begin

1. Create a Professional Learning Community (PLC) that uses the resources listed below to build common understanding of the 2+1 Model.
2. Examine the impacts of current math placement practices using assessment data, student work, student empathy interviews, student records, etc.
3. Use the 2021 Oregon Mathematics Standards to analyze existing curriculum and how well it aligns with those standards.

Resources

[Catalyzing Change in High School Mathematics: Initiating Critical Conversations](#)

[Launch Years: Reimagining Mathematics Education](#)

[Invigorating High School Math](#)

[Branching Out: Designing High School Math Pathways for Equity](#)

Contact

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