

(1) Overview of Accelerating K-12 Mathematics

Unfinished learning resulting from school closures due to COVID-19 combined with unfinished learning from previous years created a unique challenge in math education. Yet, there is an opportunity for innovation as teachers plan for instruction this fall.

Educators need to be ready to implement strategies that focus on priority, grade-level content. This strategy differs from traditional remediation practices by accelerating student learning toward those skills and content knowledge.

The TNTP [Learning Acceleration Guide](#) and collaboration with Oregon math leaders informed the recommendations in this document. This guidance provides additional state and national resources to help educators prepare for the 2020-2021 school year.

This guidance is also consistent with the [framework from the Council of the Great City Schools](#) for all students to have equal access to high-quality instruction and educational opportunity.

We recommend math educators start by reviewing a recorded webinar and slides presented by TNTP to Oregon Math Educators.

TNTP Overview

Link to [Webinar Recording](#)

Link to [Webinar Slides](#)

(2) Providing Access to High-Quality Math Instruction

This guidance is based on the principles of equity and innovation in [Ready Schools, Safe Learners](#), while making specific recommendations to accelerate learning in mathematics. This is done by investing in relationships, honoring student voice, and designing integrated learning around grade-level content.

Typical remediation strategies rely on replication of prior grade-level work, such as replicating 5th-grade math lessons in a 6th-grade classroom. [The Opportunity Myth](#) points out that this approach of “meeting students where they are” will likely deny access to grade-level content and further put students at risk of falling behind. This disproportionately impacts students of color, students from low-income families, and students with special needs, or those learning English.

The inclination to re-teach prior grade-level content is rational, but this approach did not lead to growth following [Hurricane Katrina in New Orleans](#). In other words, doubling down on current strategies for catching students up will only widen opportunity gaps.

The result of traditional remediation is often a tracked system of mathematics education. [Detracking](#) will require educators to closely scrutinize curriculum and student outcomes in order to provide opportunities for all students to accelerate toward grade-level content.

(3) Prioritize the most critical prerequisite skills and knowledge

To begin the process of acceleration, educators will need to prioritize learning opportunities in math which include: *understanding the demands of grade-level materials and content, as well as identifying the most critical grade level and prerequisite skills and concepts students will need (TNTP, 2020, p.8).*

Educators should work in teams, whenever possible, to accomplish the following actions using the district adopted curriculum before school opens in the fall:

- **Identify priority grade or course level content.** Oregon educators should start the process of identifying priority content by using the [K-8 math prioritization guidance](#) from Student Achievement Partners (SAP), and [Oregon’s High School Core Math Guidance \(v4.1\)](#). Additional considerations may be made to align with district curriculum and local context.
- **Study and apply math learning progressions** to identify core concepts in mathematics that are prerequisites for students to access grade-level content and to move through a progression into future grades.

Recommended progressions that can support these conversations include [SAP Coherence Maps](#), [Univ. of Arizona, Learning Trajectories](#), or [Math Mapper](#).

(4) Plan your approach to identify students' unfinished learning of prerequisite content

Use multiple approaches to diagnose student [unfinished learning](#) in priority content knowledge and skills. Alternatives to extensive diagnostic testing include multiple measures, such as classroom discussions, individual conversations with students, student work from everyday instruction, just-in-time assessment tasks, and student self-reflection on identity, understanding, and metacognition.

- **Gather information from the previous grade-level**, using assignments and tasks to make predictions about where students might be on a mathematics progression at the beginning of the school year. When analyzing this information, focus on priority content from that grade level.
- **Conduct just-in-time diagnostics** of student unfinished learning prior to related instruction. One teacher's approach to identify unfinished learning using work from grade 5 is this [6th grade example](#). Adopted instructional materials from previous grade levels may be a source of tasks for diagnosis. Numerous other Creative Commons licensed tasks are available through the [Oregon Open Learning Hub of OER Commons](#).

(5) Adapt your scope and sequence guidance for each grade level

Large blocks of remediation at the beginning of the school year will not help students attain grade-level proficiency in mathematics.

Acceleration of learning toward understanding grade-level content happens through a careful use of high-quality adopted curriculum and just-in-time scaffolding to address unfinished learning.

Design experiences using research-based design principles, such as [Universal Design for Learning \(UDL\)](#), that improve access to learning for all participants. A well-adapted scope and sequence with tiered support provides more time for priority grade-level content (TNTP, 2020, p.9).

- Adjust your scope and sequence to reflect identified priority content to open space for accelerated learning. This may mean some units will be reduced or even eliminated.
- Develop just-in-time diagnostics to support accelerated, multi-tiered, learning by providing instruction through full group and/or flexible small group interventions.
- Prioritize grade-level tasks and projects that engage students in the [practice of mathematics](#). [Oregon Open Learning](#) is a source for additional quality learning materials.
- Use a [lens of social justice](#) to promote positive mathematics learning and achievement. Examples of this approach are found in [Promoting Social Change via Social Justice Contexts](#) and [Tribal History/Shared History](#) lesson plans.

(6) Implement plan with equity-based instructional practices

One goal of a very purposeful focus on accelerating students to grade-level content is to eliminate tracking in mathematics. The [TNTP Student Experience Toolkit](#) has additional guidance how to support student access to grade level content.

Consideration for just-in-time scaffolds help address the necessary content knowledge and skills students need to engage in the most immediate work of the grade. While the goal here is to address unfinished learning, these scaffolds pull heavily from what we know about the science of learning. [Interleaving](#), [spaced practice](#), and [retrieval practice](#), are all highly effective evidence-based strategies that help individuals learn more efficiently and retain information longer.

It will be necessary to re-evaluate the scope and sequence periodically to make sure students are progressing in their understanding of high priority content.

Ongoing [formative assessment practices](#) create feedback loops that are critical to taking care of the needs of all students and particularly to those students marginalized or made vulnerable by current and longstanding systems.