

How can students be supported through accelerated learning in mathematics?

During the school year, many students miss learning opportunities or struggle to understand math concepts and skills. Because math content and skills build on previous learning, student proficiency in mathematics has likely been adversely impacted due to pandemic disruptions. [One study](#) estimates that students entered the 2020-21 academic year with less than 50% of learning gains compared to a typical year.

Accelerated learning provides students extra time and just-in-time support to address unfinished learning simultaneously with grade-level learning through one-on-one or small-group tutoring, summer learning experiences, acceleration academies offered during the school year or within the classroom setting.

The information in this document was developed to provide flexible, evidence-based guidance for districts to consider as they develop and implement strategies to address unfinished learning in mathematics.

THINGS TO CONSIDER

During the school day, learning acceleration can occur in [“double-dose” math classes](#) in which students participate in a full-year, grade-level mathematics course while also enrolled in a student-centered mathematics support class focused on [mathematical actions and processes](#). Accelerated learning can also occur during any math lesson by [connecting critical prerequisite skills to the lesson’s grade-level mathematics standards](#).

Afterschool [accelerated learning tutoring programs](#) have been found to be [effective at all grade levels, kindergarten-12th grade](#), if delivered in high doses several times a week and for an extended period of time. At home, an adaptive [supplemental program](#) aligned to grade-level standards can also support learning acceleration.

[Mathematical literacy](#) skills including problem-solving, sense-making and modeling are necessary components of all accelerated programs. For [elementary students](#), this could include encouraging mathematical actions and processes [through play](#). For secondary students, activities might encourage [mathematical justification and reasoning](#).

Whether during or after school, all students need high-quality instructional materials that help develop a [positive mindset toward mathematics](#) and introduce mathematics relevant to their lives.

Teachers need planning and collaboration time to identify prerequisite skills and content students need to be successful in grade-level work. Educators should also understand the intent of [grade-level mathematics standards](#) and how skills and content progresses across grade levels.

KEY INSIGHTS

- Continue teaching grade-level work while providing “just-in-time” supports for students who need them.
- Use ongoing formative assessment to drive instruction for individual students or small groups with common needs.
- Adopt evidence-based methods of teaching mathematics across the curriculum.
- Use high-quality curriculum materials that align to the Oklahoma Academic Standards for Mathematics and to Oklahoma Mathematical Actions and Processes.

SEE ALSO

- [How can summer enrichment experiences support student learning, well-being and success?](#)
- [How can accelerated learning models support students with unfinished learning?](#)
- [How can students be supported through accelerated learning in English language arts?](#)

ATTENDING TO EQUITY

Each student has individual needs, struggles and strengths. Ongoing [formative assessment](#) and observations help educators understand each student’s needs as the year progresses.

Students from underserved groups are [less likely to receive math work appropriate to their grade level](#). Teachers should ensure mathematics curriculum and instruction are [equitable](#), [effective](#) and appropriate for the grade level. Additionally, in classrooms where teachers had high expectations, students made the equivalent of [7.9 more months of progress](#) on average than in classrooms with low expectations.

Word walls and graphic organizers can help [English learners](#) develop academic vocabulary and connections across mathematics content. To support [students with disabilities](#) in building mathematical knowledge and understanding, educators can include “think-alouds” and opportunities for students to work with manipulatives and visual representations of mathematics.

Tools and resources necessary for completing tasks at home should be accessible for families.

RECOMMENDED ACTION STEPS

- Work collaboratively to determine mathematics program needs using this [assessment tool](#).
- Review the “Standards and Pacing” sections of the [Oklahoma State Department of Education’s Return to Learn Instructional Guidance](#) (including [Return to Learn: Launching Instruction for Secondary Mathematics](#)) for resources, suggestions and strategies to identify essential skills and content in various grade levels.
- Use the resources provided in the [Oklahoma Math Curriculum Framework](#) to fully understand the intent of grade-level standards and how content knowledge connects and progresses across grade levels.
- To assess the understanding of prerequisite math skills, consider using [Oklahoma Formative Assessment Probes](#) to quickly diagnose and determine the differentiation needed for students.
- [Identify strengths, potential gaps or lower-quality materials in the math curriculum](#) and consider using replacement units to provide high-quality, problem solving-based instructional materials.
- Use [this toolkit](#) to develop [high-impact tutoring programs](#), which have been proven to accelerate learning when implemented using [researched strategies](#).
- Register for [Imagine Math](#) to support students’ mathematical knowledge. Oklahoma 5th and 8th grade students can enroll in the program at no cost to school districts.