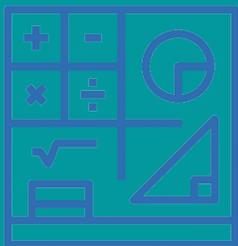


AUGUST 2021

Mathematics



Section 2B.

The purpose of this document is to guide educators in prioritizing essential knowledge and skills for students. ODE's recommendation is that all students be given the opportunity to learn grade-level essential content.



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2B. Mathematics

As students move through K-12 education, they continue to grow in their understanding of mathematics but not necessarily at the same rate. Students may exit a grade or course with a combination of new learning and unfinished learning. In [Student Learning: Unfinished, Not Lost](#), ODE recommends an asset-based frame that focuses on accelerating student learning. In line with the general ODE recommendations, [Mathematics: Preparing for Unfinished Learning](#) helps educators address how to prioritize essential knowledge and skills in mathematics. Using this essential content, districts can—where possible and in partnership with instructional materials providers—plan the scope and sequence of learning and adjust units of instruction for each content area at each grade level. One critical theme of ODE’s recommendations is that all students have the opportunity to learn grade-level essential content. Visit the [ODE Mathematics Standards](#) web page for future updates.

- Students can progress and succeed in essential grade-level learning as only some grade-level content is dependent on student mastery of previous content. The resources in the Content section of the table below are tools that will help make appropriate decisions about grade-level content.
- Remediation of prior grade’s essential knowledge should be embedded with the grade-level content, no more extensive than necessary, and taught in conjunction with aligned grade-level content rather than front-loaded.
- Given the above, back-to-school instructional assessments should focus just on the pre-learning necessary for the essential content of unit one, not the entire previous grade level.

Focus	Considerations and Resources
Care & Connection	<p>Building a collaborative learning environment built on care and connection is one of the highest priorities for educators in 2021-22.</p> <p>ODE’s Care and Connection Resources</p>
Content What is the essential learning?	<p>Prioritize the most critical skills and knowledge</p> <p>Educators should work in teams, whenever possible, to accomplish the following actions using a combination of the district’s adopted curriculum and other available tools before school opens in the fall:</p> <ul style="list-style-type: none"> • Identify priority grade- or course- level content. • Study and apply math learning progressions to maintain focus on learning essential content.
Resources	<ul style="list-style-type: none"> • Continuing the Journey: Mathematics Learning 2021 and Beyond (NCTM) • Priorities for Equitable Instruction in 2021 and Beyond (Student Achievement Partners) • Oregon Department of Education Draft High School Standards [July 2021] • Student Achievement Partners Coherence Map
Instructional Materials	<p>Start with what you already have in place</p> <p>Build from the curricular content and lesson planning already in use. Supplement district-adopted</p>

Focus	Considerations and Resources
<p>What tools and resources do I use?</p>	<p>curriculum or adapt the scope and sequence as needed for supporting students with unfinished learning.</p> <ul style="list-style-type: none"> ● Adjust your scope and sequence or course maps to reflect identified essential content. Keep long-term learning pathways in mind, especially for high school course progressions. ● Prioritize grade-level tasks and projects that engage students in the practice of mathematics. ● Promote positive mathematics learning and achievement.
<p>Resources</p>	<ul style="list-style-type: none"> ● Mathematical Practice Standards ● San Diego Enhanced Mathematics is a sample modified scope and sequence for prioritizing math in grades 6 to 12 using Illustrative Mathematics as an example curriculum. <ul style="list-style-type: none"> ○ Original San Diego Unified School District Resource ○ Modified version aligned to Oregon’s 2+1 high school math model (Lane ESD) ● Mathematics Education Through the Lens of Social Justice: Acknowledgment, Actions, and Accountability. ● Incorporate Tribal History/Shared History lessons that include mathematics. ● Resources focused on positive mathematical mindsets at Youcubed. ● The Oregon Open Learning Hub has content area resources that are openly licensed and free to use, remix, and share. ● Digital Access of State Adopted Math Instructional Materials ● Adoption Criteria for Math Instructional Materials <p>Leverage the expertise and resources of STEM community partners including your local Regional STE(A)M Hub. Local informal institutions, businesses, and universities can offer resources to support with the design, facilitation, and evaluation of professional learning and increase opportunities for out-of-school STEM engagement. Your local Regional STE(A)M Hub already has established partnerships with many of these community partners and can help you.</p> <ul style="list-style-type: none"> ● STEMOregon.org
<p>Instructional Practices and Student Engagement</p> <p>How do I adapt instruction to engage students in learning?</p>	<p>Student discourse, rich tasks, and choice are key to building identity and agency in equity-based teaching and learning in mathematics. Given the social nature of learning, designing tasks that support student discourse is a critical aspect of planning. Synchronous and asynchronous digital tools are available for students to interact with each other and mathematical content.</p> <ul style="list-style-type: none"> ● Plan for intentional and purposeful student engagement in the Standards for Mathematical Practice. Quality tasks are more important than the quantity of tasks with which a student engages. ● Engage students in rich mathematical tasks that elicit more evidence of their thinking than simply an answer. Students can continue to use and produce mathematical language in a distance learning context using a variety of online tools and platforms. ● Consider using data sets that address current issues for analysis and discussion so students can see mathematics as relevant. Educators should be sensitive to students’ lived experiences when choosing to use these data sets.

Focus	Considerations and Resources
	<ul style="list-style-type: none"> ● Ensure students are placed in heterogeneous math classes or groups where expectations for learning are high.
Resources	<ul style="list-style-type: none"> ● Continuing the Journey: Mathematics Learning 2021 and Beyond (NCTM) ● Priorities for Equitable Instruction in 2021 and Beyond (Student Achievement Partners) ● Mathematics Instruction for English Language Learners ● Teaching with Accessible Math ● Creating Accessible Math with MathML ● Signing Math & Science ● Instruction Partners’ Math Guidelines for Distance Learning Models ● 11 Teacher Recommended Math Apps and Online Tools ● Strategic Use of Technology in Teaching and Learning Mathematics ● Use Oregon Open Learning resources for engaging supplemental materials. <ul style="list-style-type: none"> ○ Regional STEM Hub Group ○ Oregon Mathematics Group ● Council of the Great City Schools released Addressing Unfinished Learning After COVID-19 School Closures, an instructional framework for addressing unfinished learning and learning losses, as well as a review of essential skills and content in ELA and mathematics to support access to grade-level content in key grade transitions for all students. ● English Learners Success Forum shares Analyzing Content and Language Demands for Math to support analysis of the language and content area demands of an upcoming lesson before teaching. ● Council of the Great City Schools shared A Framework for Re-envisioning Mathematics Instruction for English Language Learners to explicitly address the role that language and communication play in service of understanding and applying mathematical concepts.
Assessment How will I measure learning?	<p>Assessment of mathematics should be used to provide insights into students’ learning that help teachers support every student to move to grade-level content as quickly as possible. Plan an approach to identify students’ understanding of prerequisite content. Evidence of student thinking in mathematics includes qualitative data. Comprehensive assessments should be used with extreme caution to maximize already reduced instructional time. Instructional emphasis should be on students’ current grade level, scaffolding knowledge and skills from previous grade levels as needed. Educators should use multiple approaches to identify students’ prerequisite knowledge for essential priority content.</p> <p>ODE is providing all districts with access to a robust and aligned Interim Assessment System and Tools for Teachers that equip educators with assessment and curricular options at multiple levels in order to efficiently support teacher and student agency. These resources can be used for assessment of grade-level learning at the end of instructional units.</p>

Focus	Considerations and Resources
	<p>Please see formative assessment information in ODE’s Formative Assessment Supplement for focused considerations and resources.</p>
Resources	<ul style="list-style-type: none"> ● Example of 6th grade analysis for prerequisite learning ● Student Achievement Partners Mathematics Tasks ● Assessment tasks through Oregon Open Learning <ul style="list-style-type: none"> ○ Illustrative Mathematics Curricular Resources ○ Oregon Mathematics Group ● Use tasks provided by adopted instructional materials. ● Math and ELA Interim Assessments ● Formative Assessment Process ● ODE Official State Scoring Guides and Student Language Scoring Guides