

# Return to Learn: Launching Instruction for Secondary Mathematics

A digital version of this document can be found at <https://sde.ok.gov/covid19-instruction-support>.

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## Introduction

This guidance is designed to support educators and school administrators as they plan for various instructional delivery models for the 2020-21 school year. It has never been so important to take time and plan to attend to the goals of supporting students’ academic growth, supporting students’ and educators’ social-emotional well-being, and creating a safe environment for all students and educators. Teachers and schools should be responsive to their local context and student needs as they develop plans for the 2020-21 school year.

Therefore, **please note that the guidance and resources provided in this document are not meant to be a directive or limitation**, but rather a tool. Additional guidance about the planning educators may undertake in preparation for this school year can be found beginning on page 38 of the [Return to Learn Oklahoma: A Framework for Reopening Schools](#).

To provide feedback or make suggestions or requests for future guidance, please consider [completing this survey](#).

## Questions to Consider While Planning for Instruction

Educators face unique circumstances as they plan for the 2020-21 school year. In mathematics, teachers should ensure previous grade-level work is connected to on-grade-level work throughout the school year, using a high-quality, standards-based curriculum.

This section aims to provide general guidelines while also recognizing that local schools and districts have unique needs. The guidance provided here also aligns with the vision and guidance presented in, [Moving Forward: Mathematics Learning in an Era of COVID-19](#), from the National Council of School Leaders of Mathematics (NCSM) and the National Council of Teachers of Mathematics (NCTM), which includes intentionally viewing students and teachers through a lens focusing on strengths that positively contribute to mathematics teaching and learning.<sup>1</sup>

This document focuses on the **opportunities for learning**, rather than focusing on learning gaps, and asks educators and administrators to consider what mathematical content students know and what mathematical dispositions they currently have.

## Standards and Pacing

### What content and disciplinary skills should instruction focus on this year?

A central goal of instruction—even in this time of disruption—is to ensure each student learns grade-level content and is ready to progress to the next grade. Given that some students may start the school year further behind than typical and that disruptions are likely, focusing students on the most important content will be essential. Achieving this goal requires each teacher to understand the essential knowledge and skills from the current and prior grades to ensure curriculum and instruction are focused and coherent.

- 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. Keep in mind, all [Oklahoma Academic Standards for Mathematics \(OAS-M\)](#) are deemed “essential standards.”
- Identify the content knowledge and disciplinary skills from previous grade levels that serve as prerequisite skills and knowledge for on-grade-level learning, and identify what students might struggle within their current grade that may have been abbreviated or unaddressed in the

2019-20 school year. In particular, focus on serving [English learners](#), [students with disabilities](#) and other special populations.

- **Example:**

1. Look at the [Oklahoma Academic Standards for Mathematics \(OAS-M\)](#) vertical alignment document (Appendix B).
  2. Identify the prerequisite objectives that are needed for current grade-level objectives.
  3. Use the units in the **Suggested Learning Progression** or your school's curriculum map to match these prior objectives to on-grade-level units/big ideas for "just-in-time" remediation efforts.
  4. [See attached table](#) for an additional example of this process.
- Eliminate extraneous aspects of curriculum that are not closely aligned to the learning goals of the standards at grade level without eliminating grade-level standards or competencies.
    - **Resource:** Use the **Objective Analysis, Mathematical Actions and Processes**, and **Suggested Learning Progression Big Ideas** in the [Oklahoma Math Curriculum Framework](#) to focus and support grade-level learning for the year.
  - Bundle standards, competencies, or learning objectives to provide students with deeper connections across standards and reinforcement of learning of standards throughout the year. If teaching advanced mathematics beyond Algebra II, work with colleges and other advanced mathematics teachers to determine a logical, consistent learning progression for students.
    - **Resource:** View the [Oklahoma Math Curriculum Framework Suggested Learning Progression](#) for example bundles and a sample scope and sequence.

## Effective Instructional Routines

How will each student learn the content and disciplinary skills associated with this discipline, whether through in-person or distance learning?

- Design and implement quality [Tier 1 Instruction](#) allowing for rich tasks with multiple entry points and solution pathways. Consider using the [Universal Design for Learning \(UDL\)](#) and [TRU frameworks](#) when designing Tier 1 Instruction. Plan to offer math tasks with multiple entry points and rich learning opportunities for students of all ability levels.
  - **Example:** A cycle of learning or routine for instruction that supports this goal is provided below.

## Cycle of Learning Example for Mathematics

<p><b>Introduce</b> a rich task/challenge to students and ask them to reflect on their initial explanations or ideas for solving.</p>	<p><b>Resource:</b> <a href="#">Notice/Wonder</a></p>
<p>Provide students <b>opportunities to think</b> about the task, select a strategy, and attempt to solve.</p>	<p><b>Resource:</b> <a href="#">STEM Teaching Tool- Prewrite Section</a></p>
<p>Provide students <b>opportunities to share their thinking</b> with others to reinforce their thinking and gain additional ideas and evidence to support their process and/or solution.</p>	<p><b>Resources:</b></p> <ul style="list-style-type: none"> <li>● Use engagement and instructional strategies <ul style="list-style-type: none"> <li>○ <a href="#">Oklahoma Math Curriculum Framework</a></li> <li>○ <a href="#">K20 Center</a></li> <li>○ <a href="#">Oklahoma Excel Briefs</a> <ul style="list-style-type: none"> <li>■ <a href="#">Which One Doesn't Belong? #14</a></li> <li>■ <a href="#">Would you Rather? #15</a></li> </ul> </li> </ul> </li> <li>● Add to <a href="#">STEM Teaching Tool- Notes Section</a></li> <li>● <a href="#">Talk Moves</a> to encourage discussion</li> <li>● <a href="#">Cooperative Learning Mat</a> to promote discussion and encourage collaboration</li> </ul>
<p><b>Discuss as a class</b> strategies for solving the task, potential solutions and “non-solutions”, and connections to other mathematical and/or real-world examples.</p>	<p><b>Resources:</b></p> <ul style="list-style-type: none"> <li>○ <a href="#">Talk Moves</a> to encourage discussion</li> <li>○ <a href="#">5 Practices for Orchestrating Productive Discussion</a></li> <li>○ <a href="#">My Favorite No</a> strategy</li> </ul>
<p>Provide students with an <b>opportunity to reflect</b> on their learning and demonstrate their current understanding.</p>	<p><b>Resources:</b></p> <ul style="list-style-type: none"> <li>○ Exit Ticket using a strategy such as <a href="#">3-2-1</a></li> <li>○ Add to <a href="#">STEM Teaching Tool- Post Write Section</a></li> <li>○ Math Journal Reflection</li> </ul>

This cycle of learning typically happens in 1-2 class periods during school-based learning. In blended or distance learning, this cycle may need to be completed over multiple asynchronous (on students’ own time)/synchronous (common class time) experiences.

**NOTE:** For specific guidance related to Special Education and English Language Learner instruction, visit the [OSDE Office of Special Education](#) and [Office of English Language Learner websites](#).

- Provide “just-in-time” [Tier 2 Instruction](#) for those students who need it. By differentiating instruction during the school day based on results from formative assessments, students do not miss out on daily, grade-level instruction and move in and out of flexible interventions, as needed. During this time extensions can be provided for those students who have already mastered the material being presented. Teaching prerequisite skills as connected to grade-level or course-level content deepens students’ mathematical understanding.

**Resources:**

- [Differentiated Warm-Up](#)
- [Math stations](#)
- [Choice boards](#)
- Include opportunities during class time for goal-setting, reflection, and community-building.
- Use the eight equitable and effective mathematics teaching practices advocated by NCTM in [Principles to Actions](#) (2018) regardless of whether instruction is in-person, remote, or blended. To see examples of how to use these in connection to the Oklahoma Academic Standards for Mathematics, visit the **Objective Analysis** section of the [Oklahoma Math Curriculum Framework](#).
  - Establish mathematical goals to focus learning.
  - Implement tasks that promote reasoning and problem solving.
  - Use and connect mathematical representations.
  - Facilitate meaningful mathematical discourse.
  - Pose purposeful questions.
  - Build procedural fluency from conceptual understanding.
  - Support productive struggle in learning mathematics.
  - Elicit and use evidence of student thinking.

## Blended or Distance Learning

### How can I adapt my instruction for blended or distance learning approaches?

Some schools are already planning to offer students opportunities to engage in blended or distance learning for a semester or the full school year. When planning for long-term blended or distance learning models, instructional planning considerations above should be leveraged.

For districts using the in-person model, schools and teachers should consider developing week-long distance learning units that can be easily deployed if the need arises. Effective instructional routines can be used with in-person and distance learning environments. Think about these key shifts between in-person and distance learning as you plan:

<b>Key Shifts from In-Person to Distance Learning</b>	
<b>In-Person Learning</b>	<b>Distance Learning</b>
Learning happens in school with consistent access to resources and materials	Learning happens in a variety of physical environments with varied access to resources and materials
Explicit instruction, independent and/or group work, and one-on-one support during daily class periods	Explicit instruction, independent and/or group work, and one-on-one support through flexible scheduling of asynchronous and synchronous learning  Synchronous learning sessions may occur with full groups 2-3 times a week for 20-30 minutes, rather than daily, or through some other version of flexible scheduling.
Evidence of ongoing student learning is readily visible or understood through discussions, student work, and other representations	Evidence of ongoing student learning is collected in intentional ways through digital tools such as email, Learning Management Systems, video recordings, etc.
Teacher and peer feedback through written feedback on student work, classroom discussions, and conferring	Teacher and peer feedback through comments in collaborative platforms, audio- or video-recorded feedback, using synchronous meeting opportunities to provide complex feedback in real-time
Daily interactions with students to understand student progress, struggles, and well-being	Intentionally designed check-ins to understand student progress, struggles and well-being

For general guidance on distance learning, reference the [OSDE document Math Distance Learning Grades 6-12](#). The following table highlights modifications that can be made in order to engage students in the cycle of learning for Mathematics.

Modifications for Analog or Digital Learning Experiences		
Math Cycle of Learning	Analog (No-Tech) Learning	Digital (Tech-Based) Learning
<p><b>Introduce</b> a rich task/challenge to students and ask them to reflect on their initial explanations or ideas for solving.</p>	<p>Present a <a href="#">Which one Doesn't Belong</a>, <a href="#">Would You Rather</a>, <a href="#">Open Middle</a>, or similar problem to the class (or mail home for blended/distance learning). Ask students to write down what they <a href="#">notice about the problem and what they wonder about the problem</a>.</p>	<p>Post a <a href="#">Which one Doesn't Belong</a>, <a href="#">Would You Rather</a>, <a href="#">Open Middle</a>, or similar problem on your class Learning Management System (LMS), email to students, or use a <a href="#">Desmos Activity</a> to present the problem. Ask students to type what they <a href="#">notice and wonder</a> about the problem.</p>
<p>Provide students <b>opportunities to think</b> about the task, select a strategy, and attempt to solve.</p>	<p>Model, explain, or discuss with students the learning goals for the day. Allow students time to think about and record in their notebooks or <a href="#">graphic organizer</a> how they would approach, answer, and justify the task.</p>	<p>Provide a short video that includes the learning goals for the day using <a href="#">Desmos</a>, <a href="#">Edpuzzle</a> or by uploading the video to your school's LMS. Ask students to submit their initial approach, answer, and justification for the task through a <a href="#">Flipgrid</a> video, <a href="#">typed response</a>, or visual model.</p>
<p>Provide students <b>opportunities to share their thinking</b> with others to reinforce their thinking and gain additional ideas and evidence to support their process and/or solution.</p>	<p>Ask students to engage in a <a href="#">"Showdown"</a> (or another collaborative learning strategy) to share their thinking on the initial and similar tasks. Encourage discussion using a <a href="#">cooperative learning mat for discussion stems</a>. After engaging in partner or small-group discussion, allow for the opportunity for students to reflect on their own understandings by adding to their <a href="#">STEM Teaching Tool (Notes Section)</a> or adding additional thoughts to their notebooks.</p>	<p>Host a synchronous (whole class virtual) session on <a href="#">Zoom</a>, <a href="#">Google Meet</a>, or another appropriate platform, and utilize breakout rooms for small group discussion/ <a href="#">engagement activities</a>. Ask students to share their group's thinking on a <a href="#">Jamboard</a>, interactive <a href="#">Google Slide</a>, or <a href="#">Desmos Activity</a>. Ask students to reflect (through <a href="#">Desmos</a>, <a href="#">Menti</a>, LMS post, or during discussion) on how their own thinking has changed after participating in the small group activity.</p>

Please note that the guidance and resources provided in this document are not meant to be a directive or limitation, but rather a tool to support teachers and schools as they develop plans for the 2020-21 school year that are responsive to their local context and student needs.

<p><b>Discuss as a class</b> strategies for solving the task, potential solutions and “non-solutions”, and connections to other mathematical and/or real-world examples.</p>	<p>Use the “<a href="#">My Favorite No</a>” strategy to encourage and engage in class discussion. Use <a href="#">Talk Moves</a> and the <a href="#">5 Practices for Orchestrating Productive Discussion</a> to help facilitate a quality, productive discussion.</p>	<p>Ask students to submit their answers to a math task through <a href="#">Desmos</a> or an LMS. Use the “<a href="#">My Favorite No</a>” strategy in a synchronous virtual class discussion or as a discussion board prompt/<a href="#">Desmos Activity</a> asynchronously. Provide opportunities for students to see and respond to others’ thoughts and comments.</p>
<p>Provide students with an <b>opportunity to reflect</b> on their learning and demonstrate their current understanding.</p>	<p>Ask students to submit an <a href="#">exit ticket</a>, add to their <a href="#">STEM Teaching Tool</a> (post-write section), or reflect in their math journal on their current understanding of the learning goal. Use this exit ticket to determine current understandings and drive future planning decisions.</p>	<p>Ask students to submit a virtual exit ticket through a <a href="#">Desmos Activity</a>, <a href="#">Google Form</a>, or <a href="#">Interactive Slide</a>. Use this exit ticket to determine current understandings and drive future planning decisions.</p>

## Additional Instructional Tasks for Distance or Blended Learning

- [Sample Learning Menu](#)
- [Sample Choice Board](#)
- [No-Tech, Low-Tech, and High-Tech Distance Learning Instructional Resource Database](#) (also found below the last unit of each grade level’s Suggested Learning Progression).
- [Oklahoma Math Curriculum Framework](#)

### Launching Instruction with Digital Tools

For more guidance for effectively implementing virtual instruction, blended learning, or creating digital variations of instruction to enact social distancing, visit [Return to Learn: Launching Instruction with Digital Tools](#). The guidance is organized around the following principles to support all learners:

- select appropriate digital tools and implement with care,
- create clear and effective communication strategies,

- build and maintain community, and
- empower student choice.

## Classroom Assessment

How will students be provided opportunities to showcase their learning and for teachers to provide feedback to students on their learning?

Math assessments can be incorporated throughout a cycle of learning for students. Providing students multiple opportunities to showcase their thinking throughout the cycle of learning will allow teachers to better understand what students are currently capable of and support equitable, on-grade level approaches to assessment.

- Formative Assessment can be used to determine any “just-in-time” remediation needed and to determine where students are and are heading in their learning journeys.
  - **Resources:**
    - [Formative Assessment Probes](#)
    - Formative assessments are available in the grade-level **Suggested Learning Progression** on the [Oklahoma Math Curriculum Framework](#)
- Interim and Summative Assessment can be used to determine the learning that has occurred during a unit or multiple units of grade-level instruction.
  - **Resources:**
    - Common Assessments made by your school and/or district
    - Unit Assessments in the **Suggested Learning Progression** of the [Oklahoma Math Curriculum Framework](#)
- Determine as a Professional Learning Community how you will create assessments for learning and of learning. If you are the sole math teacher in your school and/or district, it is recommended that you partner with a neighboring school and/or district’s math educators to collaborate in this work.

## Professional Learning on Math Assessment

- OSDE is pleased to offer two free online learning modules on math assessment practices. After completing each module, you will receive an e-certificate for your participation. To access these online modules:
  - Visit <http://osdeconnect.ok.gov>
  - Create a free account, then log in
  - Click “+Module” and search mathematics
  - Choose one of the two modules currently available for mathematics:

- Formative Assessment Probes
- PLC Common Assessment Discussion, Implementation, and Analysis

## Connections and Integration with Other Disciplines

### How can instruction support the integration and reinforcement of other content and disciplinary practices?

Effective math instruction provides numerous opportunities for the authentic development of literacy skills connected with the Oklahoma Academic Standards for English Language Arts.

- Students can leverage informational text to support their justification and reasoning.
- Students can use discussions, videos of explanations, or simulations to gain additional understandings or justify their process.
- Students can communicate their thinking through a variety of methods (e.g., writing explanations, modeling, and/or verbal).

Additional integration opportunities are available through collaboration with science, computer science, and technology courses. Use the [STEM Framework Evaluation Tool](#) to evaluate a lesson for potential opportunities to integrate additional content areas.

**Intentional collaboration** with other teachers to plan integrated lessons or units could **reduce the overall assignment load placed on students** in a given week or over the course of the year.

## Student Social-Emotional Learning and Educator Well-Being

### How can instruction in this discipline support social-emotional learning for students?

Students will return to school this fall amid two profound crises: an unprecedented global pandemic and social upheaval as the nation reckons with its legacy of systemic racial oppression. For this reason, as educators plan for a strong start to the 2020-21 school year, it will be critical to prioritize well-being and connection, which research shows are prerequisites to effective teaching and learning.

**NOTE:** Consider incorporating [sample teaching activities](#) provided by the Collaborative for Academic, Social, and Emotional Learning (CASEL) to support core competencies of social-emotional learning for students this year.

Evidence-based approaches to math instruction and assessment also support social-emotional learning for students. Here are a few specific suggestions for supporting student well-being and social-emotional learning in mathematics for both in-person and distance learning:

- Establish Collaborative Norms and a Supportive Learning Environment at the beginning of the year.
  - **Resources:**
    - [Ideas for fostering a strong classroom community in a virtual setting](#)
    - [Discussion/Collaboration Norms \(see slides 20-22\)](#)
    - [Class-building/Team-building Strategies](#)
    - [Goal-Setting](#)
- Implement Unit Zero from the grade-level Suggested Learning Progressions in the [Oklahoma Math Curriculum Framework](#) at the beginning of the year to reinforce the idea that math is about learning, not about performing, math is about making sense of your surroundings, math is filled with conjectures, creativity, and uncertainty, and mistakes are beautiful things.
- Provide students opportunities to engage in mathematics tasks that connect to their interests and surroundings.
  - **Resources:**
    - Analyzing and Creating Data Stories using [Graphing Stories](#) or this [Real-World Graphing Story Example from Dan Meyer](#)
    - [Math Student Circle Activities](#)
- Provide students with the opportunity to revise their thinking based on newly acquired information to help them gain confidence and feel a sense of autonomy in their learning.
- Structure opportunities for students to engage in partner, small-group, and whole-group discussions through in-person and distance learning experiences.
- Provide authentic feedback and ask open-ended questions that invite students to engage in deeper reflection about their strengths and interests as it relates to mathematical tasks.
- Provide consistent check-in opportunities for students throughout the year.

**NOTE:** Consider sharing these documents from the OSDE Office of Counseling with families of students: [Self-Care for Parents and Caregivers](#) | [Guidance for Distance Learning Environment: Helpful Tips for Families](#) | [Family Guide to Positive Behavior in Distance Learning Environments](#).

## What are ways to ensure regular self-care as an educator?

Before teachers can be expected to provide healthy and safe environments for students, it is important that they also take time to attend to their personal care and well-being. Doing a personal check-in using the questions below can be a good place to start.

- How am I taking care of my physical needs, including getting enough sleep, exercise, and nutrition?
- Do I have a routine? If so, which parts of the routine are working well, and which could be improved on? If not, how can I use a routine to reduce stress and encourage healthy behaviors?
- Do I have a sense of balance between work and other life demands? How can I take steps to “turn off” work and spend time doing other things that bring joy?
- Am I staying connected with friends and family? How do I need to make adjustments given current limitations?

Here are a few additional resources to support teacher well-being at this time:

- [Self-Care for Teachers and Educational Professionals](#)
- Free interactive sessions from [Pure Edge](#), to support self-care.
- [Social-Emotional Toolkit for Educators](#)

## How can students experiencing chronic stress be supported?

Students are going to have a variety of reactions to the realities of 2020. Here are a few examples of how to create a safe space for students who may be experiencing chronic stress due to past and recent events:

- Leverage the [SEL Hacks](#) and [read this blog](#) showing how to create a safe, nurturing, relationship-based environment for students both in-person or through distance learning.
- Provide age-appropriate and factual information to students about COVID-19, but try to focus on how [adults are trying to keep them safe](#).
- Consider reactions students may have to the pandemic and ways to support them ([English](#) | [Spanish](#)).
- Consider the effect discussions about the pandemic may have on students who may have experienced the effects of COVID-19 and other diseases in family and acquaintances. Caution should be generously applied in any case where such context may create discomfort or harm for any students.
- Encourage students to verbalize their feelings. Helping them put their emotions into words can give them a sense of control in the situation.

- Help students build connections, with you and with each other. This may be more challenging given the need for social distancing or distance learning, but caring connections with others are more important than ever (see building classroom community resources above).
- Routine and predictability are important. If possible, try to communicate with students about any changes before they happen. Given potentially quick changes that may happen this year, explaining the changes as or after they happen can help students adjust as well.
- Explore [The National Child Traumatic Stress Network Resource Guide for Trauma-Informed School Strategies During Covid-19](#). This document gives deeper insight into Covid-19 related chronic stress and tangible strategies for teachers and administrators.

## Equity and Inclusion

### What are productive structures to organize students for instruction?

Decisions about how students will be organized for instruction will vary within schools and across school districts. These decisions will reflect beliefs about how and which students can and should learn mathematics. To promote equitable access to high-quality mathematics education, we must have productive structures for organizing students<sup>1</sup>.

- Assign students to teachers using structures that ensure heterogeneous ability groups, being mindful of potential inequities, such as access to technology, as schools shift between in-person and distance learning.
- Create strategically mixed groups of students with a variety of strengths within classes and have them collaborate to complete rich tasks in a variety of media, including digital and print.
- Ensure that highly qualified mathematics teachers are in place for initial instruction and any intervention plans.

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<sup>1</sup> NCTM/NCSM. (2020, June). *Moving Forward: Mathematics Learning in the Era of COVID-19*. NCSM. [https://www.mathedleadership.org/docs/resources/NCTM\\_NCSM\\_Moving\\_Forward.pdf](https://www.mathedleadership.org/docs/resources/NCTM_NCSM_Moving_Forward.pdf)

## What curriculum choices and instructional practices support equity and access to quality instruction?

While the guidance provided throughout this document promotes equitable teaching and learning practices through research-based effective mathematics, it is important for educators to spend time reflecting on planning for and implementing strategies that support more equitable and inclusive learning environments for students in the 2020-21 school year. In addition to the equitable instructional practices referenced throughout the document, the chart below lists practices to keep in mind given the current realities of returning to school:

More Equitable Practices	Less Equitable Practices
Making sure that students and families have what they need to access instruction or communication, and shifting practices where necessary to ensure access for all.	Deciding on one form of instructional delivery or parent communication and sticking to only that.
Providing all students grade-level learning, regardless of their starting points. All students are capable of progressing to the next grade level this fall and mastering that content.	Never giving students access to on grade-level content because of the perceived deficits they entered this school year with or providing “over-remediation” instead of focusing on below-grade-level work only when it is necessary for a student to complete grade-level work. <sup>2</sup>
Noticing/paying attention to students’ mathematical thinking to see how students position and identify themselves and each other. Learn about the different worlds your students live in, and bring mathematics that comes from those worlds. <sup>3</sup>	Using examples and other materials that are limited in their diversity and/or representation of cultures and experiences or “leave out” students’ identities.
Creating and engaging as a community by working with other educators and with your students throughout the year to work on building equity-oriented communities. <sup>3</sup>	Staying in a “silo” without consulting or working with other educators to build equity-oriented school communities.

<sup>2</sup> TNTP. (2020, April). *Learning Acceleration Guide*. TNTP.  
[https://tntp.org/assets/covid-19-toolkit-resources/TNTP\\_Learning\\_Acceleration\\_Guide.pdf](https://tntp.org/assets/covid-19-toolkit-resources/TNTP_Learning_Acceleration_Guide.pdf)

Offering multiple opportunities and methods for students to demonstrate their proficiencies.	Using only one form of assessment to measure student progress.
Providing opportunities for self-reflection and student-reflection.	Continuing with a pacing guide or curriculum map without pausing for reflection or making adjustments based on student need and reflection.

## Teacher Self-Reflection

Equity-based teaching requires reflection, which involves not just reflecting on your pedagogy and your classroom norms, but also considering how you identify yourself and how others identify you. Before and during the school year, reflect on your own identity, positions, and beliefs in regards to biased and sorting-based routines.<sup>3</sup> Consider examining your mathematics curriculum and instructional practices for inherent or implicit bias by exploring the following questions:

- Do I withhold certain instructional practices or content from certain groups of students based on assumptions or beliefs about their capacity, home-life, culture or some other factor assumed to make them less ready?
- Do my instructional practices invite in multiple voices and perspectives?
- Do I find time to provide individual attention to my students during instruction or assessment feedback loops?
- Do my assignments and tasks limit the curiosity, creativity and potential of students?
- Am I providing my mathematical knowledge rather than helping students develop their own?
- How might my curriculum and instruction perpetuate an education system that marginalizes certain students?

**NOTE:** Test your own implicit bias and learn about strategies for overcoming these biases using information provided through [Harvard University's Project Implicit](#).

## Creating an Anti-Bias Classroom

Current events addressing systemic racism in our nation remind us to examine our own biases as educators and any bias in our curriculum and instruction. When we focus on creating a classroom focused on anti-bias education, we provide opportunities for students to use their lived experiences

<sup>3</sup> Chao, Gutierrez, Murray. *What Are Classroom Practices That Support Equity-Based Mathematics Teaching?* NCTM. <https://www.nctm.org/Research-and-Advocacy/Research-Brief-and-Clips/Classroom-Practices-That-Support-Equity-Based-Mathematics-Teaching/>

and interests to deepen their understanding of mathematics.<sup>4</sup> Mathematics curriculum and instruction can support efforts toward anti-bias education by:<sup>5</sup>

- Bringing equitable, culturally-responsive teaching practices and professional learning opportunities to your classroom, school, and district.
- Focusing on the idea that all students can learn mathematics and implement multiple types of assessments to measure students' mathematical understandings.
- Allowing students choice in their mathematics pathways and providing access to high-quality instruction and rich tasks for all students, regardless of their mathematics course.
- Focusing on mathematical strengths and areas of growth with targeted meaningful feedback that promotes learning, not labeling.
- Helping students develop and maintain positive mathematical identities and encourage multiple perspectives and processes to be brought to the classroom.
- Understanding the history of mathematics education and bringing diverse instructional voices, knowledge, and skills to mathematics curriculum and instruction.
- Analyzing curriculum for access to high cognitive demand tasks that are meaningful and connected to students' lived experiences.
- Including tasks that analyze data related to the idea of "fairness" and civic engagement issues.
- Incorporating engagement strategies that maximize mathematical discourse and student contributions while minimizing status issues in the classroom.

## Safety Considerations: Physical Environment and Supplies

Educators planning for in-person, blended and distance learning instructional delivery models should always defer to the safety guidelines provided by your school or district. As the Covid-19 situation continuously develops, also consult the current [Oklahoma Department of Health \(OSDH\)](#) and [Centers for Disease Control \(CDC\)](#) health and safety guidelines.

Collaboration, writing in notebooks, and class discussions are key components of math learning. Teachers may need to modify many normal instructional practices to prevent the spread of viruses and other disease-causing organisms. The following math classroom safety considerations are not intended to replace a district's emergency or crisis safety plan and are not an exhaustive list of the health and safety needs to be considered.

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<sup>4</sup> Berry, Robert. *Connecting Mathematics Education to Social Justice Issues*. University of Virginia. <https://curry.virginia.edu/news/connecting-mathematics-education-social-justice-issues>

<sup>5</sup> NCSM/TODOS. *Mathematics for All*. NCSM. [https://www.todos-math.org/assets/docs2016/2016Enews/3.pospaper16\\_wtodos\\_8pp.pdf](https://www.todos-math.org/assets/docs2016/2016Enews/3.pospaper16_wtodos_8pp.pdf)

## Physical Learning Environment

- Desks and students should remain spaced at least 6 feet apart, to the extent possible, and face the same direction rather than students facing each other or working in physical groups. Utilize digital tools and class discussions to maintain collaborative learning opportunities.
- Keep doors open or consider holding some classes outdoors or in larger spaces such as gymnasiums, auditoriums, vacant hallways, and cafeterias, if possible.
- Frequently wipe down high-touch surfaces such as desks, tables, chairs, door handles, and light switches.
- Where students typically wait in line, place tape markings to indicate social distancing.
- Educators are strongly encouraged to use assigned seating.

## Classroom Materials

Currently, the CDC recommendation is for students to **not** share supplies. This can present challenges to math teachers and students who rely on classroom supplies for learning opportunities.

- Classrooms should reduce the use of shared items that may be difficult to clean. Items that must be shared, such as computers and tablets, should be cleaned between use. Provide methods for safe and sanitary disposal of used materials.
- Keep each student's belongings separated from those of others and in individually labeled containers, cubbies or areas. Consider allowing students to bring a small drawstring bag to store all school supplies, including writing utensils, paper, etc.
- Instead of turning in paper copies of assignments, consider taking a picture to view or having students submit work digitally, allowing for closer examination and/or digital collaboration.
- **Calculators:** Encourage students to bring their own calculators. If students cannot afford a calculator, "check out" individual calculators to students; do not allow multiple students per calculator. Students could also use a free calculator phone/computer app ([Wabbitemu](#) or [Desmos](#)) in place of a physical calculator.
- **Individual Whiteboards:** Instead of individual whiteboards for students, use plastic page protectors (one per student) with a piece of graph paper inserted. Students can keep these with their other school supplies. Each student should have their own dry erase marker and method of erasing, which they can keep in the page protector when not being used. These page protectors can be clipped into a binder or stored in student backpacks when not in use. If students have access to technology, consider using [Desmos Digital Whiteboards](#).
- **Textbooks/Curriculum:** If textbooks are used, consider allowing students to keep textbooks at home and providing photocopies (one per student), whole-class examples (displayed on projector or board), and/or digital opportunities, such as [manipulatives](#) and [instructional tasks](#),

for learning. This will minimize the number of supplies/books students will be required to locate and carry each day.

### Additional Considerations

Learning relies on the interaction between students and teachers and among students to construct knowledge and skills. Teachers may need to modify collaborative learning practices to maintain collaboration while minimizing risk.

- Limit guests and visitors to the classroom while remaining mindful that parents and families play a vital role in their child's education; involve guest speakers through virtual means.
- Evaluate planned student activities for safety and student interactions but also their value for engaging students in meaningful thinking and learning. Consider alternatives that teach the same concepts and skills. Build in extra time for sanitizing activities.
- Include instruction that teaches the routines and procedures that students should use in the class and out-of-school. Consider the traffic flow when distributing materials and other movements. Minimize the number of students that need to move. Establish personal student practices such as wearing masks, washing hands, and sharing materials. Use signage that encourages the practices.
- Modify grouping practices. Consider having students partner together and share as they remain at a proper distance or groups of students could share learning experiences through digital means. The use of cameras and large-scale projection can also enhance group learning experiences.

### Ongoing Support for Instruction

OSDE will continue to provide ongoing support for instruction during the 2020-2021 academic year. Continue to check the [OSDE Mathematics Website](#) and [sign up for the OKMath Newsletter](#) to see upcoming professional learning opportunities, office hours, and additional instructional resources.

#### Professional Learning Opportunities

- [OKMath Toolkit](#)- Use this toolkit to guide ongoing discussions and planning for the successful implementation of the Oklahoma Academic Standards for Mathematics.
- [Tech Tuesday Recordings](#)- Learn about different education technology tools for instruction.
- [Ongoing Professional Learning Database](#)- See all of the webinars, online learning modules, and math professional learning resources available on demand.
- [Synchronous Professional Learning Opportunities](#)- See all upcoming opportunities to learn simultaneously with other math educators.

- [OKMathTeachers.com](http://OKMathTeachers.com)- Oklahoma educators' ideas and thoughts related to math and STEM education.

## OSDE Hosted Virtual Meetings

Join OSDE staff and mathematics teachers around the state for monthly professional learning opportunities during the 2020-21 school year.

### Secondary Mathematics Virtual Meetings

- Every 2nd Wednesday of each month, 3:30-4:30 p.m.
- First meeting will occur on August 12th; [Register here](#).
- Zoom information will be communicated through the OKMath Newsletter. Subscribe [here](#)!

## Social Media Connections

### Facebook Communities

- All Grade Levels: [#OKMath](#)
- Grade 6: [#OKMath6](#)
- Grade 7: [#OKMath7](#)
- Grade 8: [#OKMath8](#)
- Algebra I: [#OKMathA1](#)
- Geometry: [#OKMathG](#)
- Algebra II: [#OKMathA2](#)
- Math Teacher Circles: [#OKMTC](#)
- Statistics: [#OKMathStats](#)
- College Career Math Ready and Ready for High School Math: [#OKMathReady](#)
- Bootstrap CS/Algebra Integration: [#OKBootstrap](#)

To create an additional Facebook Group for a math course not currently represented, create a group [#OK\[mathsubject\]](#) and post in the [#OKMath Facebook Group](#) that it's been created!

### Twitter

- Use and search **#OKMath** to highlight and find math resources for Oklahoma Educators.
- Use and search **#MTBoS** to highlight and find math resources for the global math community.
  - **@oksde**- OSDE Account

## State-Level Math Organizations

- [Oklahoma Council of Teachers of Mathematics](#)

- [Regional Oklahoma Math Teacher Circles' Organizations](#)
- Math Curriculum Coordinator Consortium
- STEM Curriculum Coordinator Consortium

## Contact Information

We are here to help in any way we can. Feel free to email any of the following people at OSDE if you have questions or need support.

- **Christine Koerner**, Director of Secondary Mathematics, [Christine.Koerner@sde.ok.gov](mailto:Christine.Koerner@sde.ok.gov)
- **Susan Kirk**, Director of Elementary Mathematics, [Susan.Kirk@sde.ok.gov](mailto:Susan.Kirk@sde.ok.gov)
- **Gena Barnhill**, Oklahoma Excel Math Specialist, [Gena.Barnhill@sde.ok.gov](mailto:Gena.Barnhill@sde.ok.gov)