
THIRD SPACE LEARNING

# Advancing Equity in Math: Professional Development Toolkit

11 of the most needed areas of professional development according to our panel of district, school and math leaders

**School and District Leader Guides**

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# What Professional Development do educators need?

*most needed*

1. Scaffolding instruction for struggling students
2. Best practices for one-on-one and small group instruction and intervention
3. Supporting students with special educational needs
4. Differentiated instruction techniques
5. Using data to identify and address gaps
6. Creating an equitable classroom
7. Using technology and digital tools
8. Strategies for English language learners
9. Creating a culturally responsive curriculum
10. Bias awareness and inclusive teaching
11. Social Emotional Learning and Growth Mindset

*least needed*

Our key contributors highlighted a clear need for **specific and regular equity-focused Professional Development (PD)**, so we asked our panel what they thought:

- 79% of our panel have had equity-specific PD in the past
- 82% of those feel it has had a positive impact
- 1 in 5 feel the impact is high

It's important to note that equity-focused PD is not a one-size-fits-all approach; your school and district will have its own unique needs.

"Our district has 115 schools. We service 47,000 students and we have 9000 staff members. It's the largest district in the state. So when the district is planning PD, it is very global oriented and not necessarily looking at specific target audiences, rather ways to make sure everyone has access to the math tools. A lot of that is provided by folks who are not in the classroom."

Principal, Ohio

Your PD strategy will be dictated by the demographics you serve and, crucially, insights from the teachers that serve them.

This section will help you understand the **areas in which additional training and development will have the biggest impact on advancing equity in math** according to our panel.

# 1 Scaffolding instruction for struggling students

The first step for any PD in this area is making sure teachers are confident breaking down each skill into components and seeing what temporary supports ('scaffolds') can be added or removed as students need.

Make sure you're focusing on when scaffolding should be taken away as well as what can be added and when:

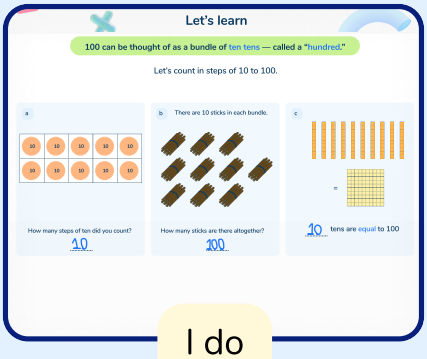
"We were seeing that teachers were doing a great job of scaffolding for students, but then they would leave the scaffold in place. Then, when students take the assessment, they don't have that scaffold.

Now we're focusing on them doing manipulatives until they no longer need the manipulatives. When they prove they don't need the manipulatives, then we take them away and they go to pictorial. When they can do it without pictorial, then they're on to abstract.

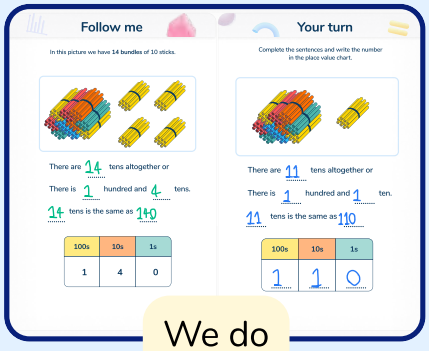
We're trying to push that independence so that they're not as dependent on scaffolds or the teacher support."

Math Achievement Advisor, Arizona

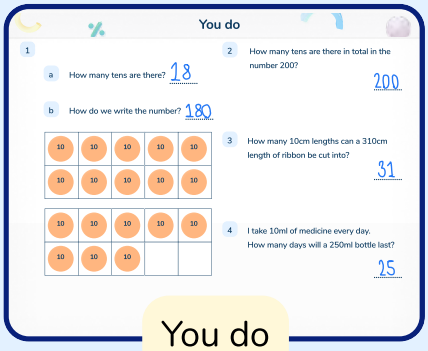
We're big believers in the power of scaffolding at Third Space Learning, and all our one-on-one math lessons follow an "I do, we do, you do" structure to ensure every student receives exactly the right kind of support.




I do




We do




You do

## 2 Best practices for one-on-one and small group instruction and intervention

Educators know that the smaller the group, the higher the impact, but they need support to make these sessions as effective as possible.

They also need scheduling and staffing systems in place to allow them to offer it.

> "When we've been able to offer it, one-on-one instruction has been the most impactful thing we've done for those particular students who are struggling and who haven't had the same opportunities as others. **I just wish I could do that with all of them.**"
>
> Math Interventionist, Wisconsin

The best place to start with your PD is making sure staff a pedagogical understanding of the instructional techniques that will enable them to provide instruction that is personalized to each student's needs in a supportive and encouraging environment.

At Third Space Learning, each of our math specialist tutors receives training on:

- Effective one-on-one instruction
  - Teaching math conceptually
  - Teaching at an appropriate pace
  - Visual and mental strategies to deepen understanding
  - Modelling concepts to a high standard
- Personalizing instruction
  - Identifying and addressing math misconceptions
  - Using formative assessments
  - Adapting to student needs
- Mindset and engagement
  - Building engagement and dealing with disengagement
  - Promoting student voice autonomy and reflection
  - Motivating students

## 3 Supporting students with special educational needs

The PD you provide in this area will depend on the students your school serves and their specific needs. For example:

- Schools who serve students with **autism** would benefit from PD that helps staff
  - Understand how they can adapt their classroom environment to avoid sensory overload
  - Support students with work schedules and work stations
- Schools who serve students with **ADHD** would benefit from PD that helps staff
  - Break up lessons
  - Gradually increase in difficulty
  - Provide variation in tasks
  - Give praise and positive feedback
  - Use visual aids
  - Incorporate movement breaks
- Schools who serve students with **dyscalculia** would benefit from PD that helps staff
  - Provide one-on-one or small group instruction
  - Effectively use concrete materials
  - Make math as practical and multisensory as possible

Every Third Space Learning math tutor receives specific training on specific learning needs as part of their initial and ongoing tutor training. This helps us make sure we're providing exactly the right kind of support for these students.

"Our special educational needs children love it. It's one-on-one so the pupil is the only person that can respond and answer. They love being online and using the computer, and they really look forward to their Third Space Learning lessons. The engagement and response is really positive."

Lindsay Lynd, School Leader

## 4 | Differentiated instruction techniques

Researcher and professor at the University of Virginia, Carol Ann Tomlinson, describes differentiated instruction as how teachers take students' levels of readiness, interests and learning profiles into account while they plan and deliver instruction.

This means that teachers:

- Design lessons based on student preferences
- Group students by shared abilities or interests
- Use formative assessment to continually adjust instruction

PD should focus on making sure teachers are confident with assessing each student's zone of proximal development (ZPD) and preparing information, modeling, and tasks for each student accordingly, individually or in groups.

PD should not just focus on differentiating content, but also:

- **Process:** how are you teaching it?
- **Product:** what are you asking students to provide?
- **Learning environment:** what does this look like in the classroom?

"We've always had a big push on differentiation based on interests and gifts, including the gifted and talented. We've had differentiation conversations based on language diversity. Our district also has a higher percentage of African American students compared to our neighbors, so that's always been a conversation and a need."

Math Instructional Coach, California

At Third Space Learning, our math tutors use formative assessments and carefully sequenced questions to adapt their instruction, meaning even two students working through the same lesson won't experience this in the same way at the same pace.

"Third Space Learning has allowed us to provide a personalized agenda for each child that supports our differentiation strategies, plugging their individual learning gaps."

Liz Nightingale, School Leader

## 5 Using data to identify and address gaps

According to our panel, accessing the data isn't an issue, but they need to know what to do with it.

- 93% of our panel said access to data does not prevent them from advancing equity
- 85% said using that data to inform instruction and intervention had a positive impact on advancing equity
- 71% said PD and training on using data to identify and address math gaps would have a moderate to high impact

"We've got the data and any teacher here can have access to it at any time, but knowing what to do with the data once you have it, that's a bigger issue."

Achievement Advisor, Arizona

So, what should educators do with the data? According to our panel:

- Review data regularly
- Group students to understand patterns across demographics
- Identify gaps in understanding, individually and in groups
- Look to see if any specific standards or domains need to be revisited
- Create specific plans to group students and address gaps

"Our teachers analyze data regularly to identify gaps and develop plans to address them including academic language, extra time on subject, and differentiation."

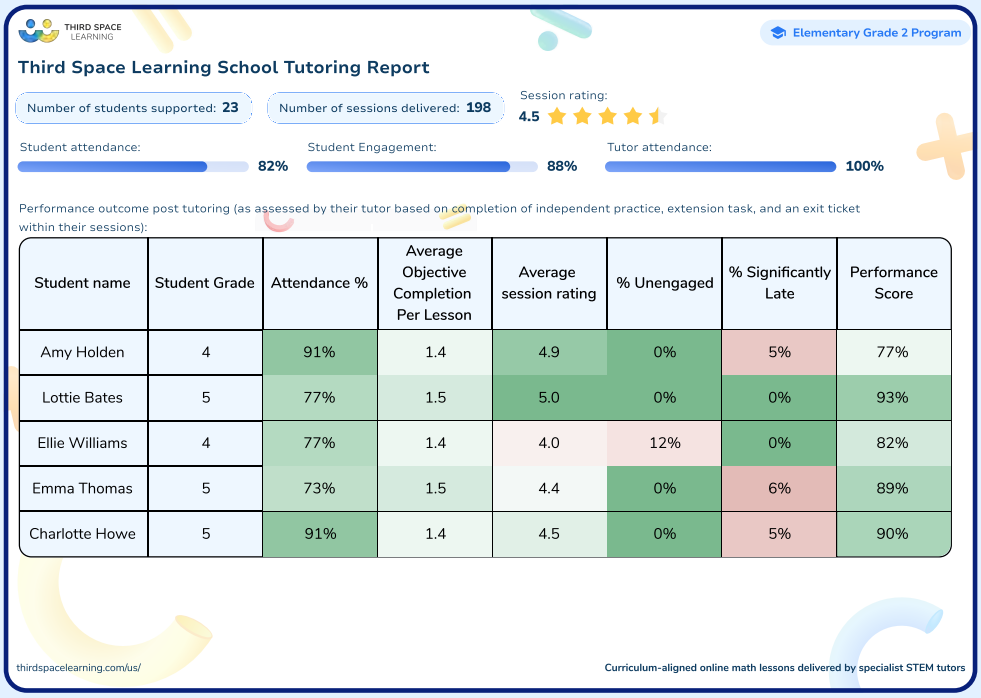
Joyce Schreitmueller, Federal Programs Director, Diocese of Dallas

"We really need to be looking at it regularly and asking ourselves 'are we being equitable? Do we have any one group that's not on average with everybody else or anybody that's exceeding?' And it's about looking at why they are below average or exceeding."

Achievement Advisor, Arizona

How we use data to make our one-on-one math tutoring as effective as possible:

- We analyze each student's assessment data to identify the most appropriate sequence
- Individual tutoring sessions begin with a prior learning slide; tutors use the results to adapt the pathway they take through that lesson
- Students complete exit tickets at the end of each session which helps tutors and teachers to understand growth over time and any outstanding gaps
- Teachers can see attendance data and student session ratings, helping them to prioritize students effectively



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Elementary Grade 2 Program

**Third Space Learning School Tutoring Report**

Number of students supported: 23 | Number of sessions delivered: 198 | Session rating: 4.5

Student attendance: 82% | Student Engagement: 88% | Tutor attendance: 100%

Performance outcome post tutoring (as assessed by their tutor based on completion of independent practice, extension task, and an exit ticket within their sessions):

| Student name | Student Grade | Attendance % | Average Objective Completion Per Lesson | Average session rating | % Unengaged | % Significantly Late | Performance Score |
|---|---|---|---|---|---|---|---|
| Amy Holden | 4 | 91% | 1.4 | 4.9 | 0% | 5% | 77% |
| Lottie Bates | 5 | 77% | 1.5 | 5.0 | 0% | 0% | 93% |
| Ellie Williams | 4 | 77% | 1.4 | 4.0 | 12% | 0% | 82% |
| Emma Thomas | 5 | 73% | 1.5 | 4.4 | 0% | 6% | 89% |
| Charlotte Howe | 5 | 91% | 1.4 | 4.5 | 0% | 5% | 90% |

thirdspacelearning.com/us/

Curriculum-aligned online math lessons delivered by specialist STEM tutors

Example Third Space Learning tutoring report

# 6 Creating an equitable classroom

Students who feel comfortable and part of the classroom community are more likely to participate in classroom discussions. This can lead to a deeper understanding of learning standards and ensures students feel seen and heard, particularly those from vulnerable backgrounds.

For our panel, this is all about making sure classroom practices are appropriate, relevant and engaging for all students, including:

- Making math problems tactile and using manipulatives
- Adapting questions and activities to ensure the context and wording resonates and is appropriate for students
- Using Project Based Learning (PBL) to help students make physical connection and real world connections

"One of my teachers has just rewritten a lot of the word problems and used student names. Students also don't want to know how many watermelons he has when he sells 97, but he grew 150. That makes no sense and they don't care. Even just changing it to something like pieces of candy, that makes it more meaningful instead of this arbitrary, abstract concept."

Principal, Ohio

At Third Space Learning, all tutors receive explicit training on building rapport and all programs begin with a little bit of 'getting to know you' time, where tutors can ask about students' hobbies and interests. By doing this, they can then adapt questions to ensure they're bringing the math into each student's real world.

"The tutors spend a lot of time getting to know the children to understand what motivates them. This makes them feel really special and it helps develop a rapport."

Nicola Wilmhurst, School Leader

# 7 Using technology and digital tools

There are lots of tools out there that will support your staff to advance equity in math. In fact, many of them will have already found tools and sites that enable them to adapt resources, differentiate instruction, break skills up and scaffold accordingly, and translate work into multiple languages... the list goes on.

- Speak with your staff to identify what they're already using
- Identify a champion for each tool
- Ensure everyone is aware of the tools available
- Provide training and PD around using them for maximum impact
- Research what support and training different providers offer, many of these are free!

For example, all schools who sign up to Third Space Learning's online one-on-one math tutoring programs receive a dedicated Program Manager so they have support at every step.

"I work closely with each of my schools and districts, right from when they first enquire. We talk through what they're looking to achieve, which students would benefit most from the one-on-one tutoring and the most appropriate schedule and sequence for their needs. Setup is quick and easy but I'm on hand if they have any questions. Throughout the program I keep them updated with student and tutor feedback, growth over time, and free math resources to use in their classrooms."

James Gregson, Program Manager, Third Space Learning

## 8 Strategies for English language learners

Just as students with special educational needs require specific strategies and PD, so too do English language learners.

The PD you provide will depend on the languages your students speak and how proficient they are with English, but you may want to consider:

- Visuals
- Manipulatives
- Modeling
- Mathematical vocabulary

"53% of my students are learning English as a second language. We have 29 different countries represented and 19 different languages within the building."

Principal, Ohio

"Our dual language learners have language objectives, content objectives and processing objectives."

Instructional Coach, California

# 9 Creating a culturally responsive curriculum

For your school or district to make math equitable, you need to make sure your curriculum and instruction are culturally relevant and responsive.

In their book 'Cultivating Mathematical Hearts: Culturally Responsive Mathematics Teaching', Maria del Rosario Zavala and Julia Maria Aguirre encourage educators to consider:

- Classroom structures
- Lessons
- Tasks
- Assessments

Their CRMT framework consists of three main strands:

1. Knowledges and identities
2. Rigor and support
3. Power and participation

**Maria del Rosario Zavala and Julia Maria Aguirre**

"One of the things I'm working on is making sure that the curriculum and math framework is culturally relevant, and that it's engaging, and that it has rigor - not just one or the other."

Math Instructional Coach, California

## 10 | Bias awareness and inclusive teaching

For math to be truly equitable, we need to make sure we're reflecting on and aware of our own biases. We must also consider the biases of children's parents and how these might be passed down.

Much of this will depend on your own school or district's demographics, but a good place to start is simply having an **open and honest discussion** around the biases your staff have noticed in themselves or the wider community.

"There has been a big push on equity in our district, especially in reading and math. At our building we have a good focus on equity and making sure students have what they need to be successful and individualizing it for all of them, but **a lot of my team gets strung up on, the fact that they're ESL or they're special ed, and thinking that means they can't do this and they can't do that.** I remind them that they can, we just need to maybe scaffold it differently or perhaps use AI to translate a document for them so they can have access to it."

Principal, Ohio

"In general with math we see that there's **more emphasis on boys being good at math than girls**. I wouldn't say teachers feel this, but the parents. We see this during parent teacher conferences when we hear things like 'Oh her mom is not good at math, so she's not good at math either!'"

Achievement Advisor, Arizona

## 11 | Social Emotional Learning and Growth Mindset

Implementing PD that helps educators foster social and emotional skills and cultivate a positive mindset can be incredibly powerful and go a long way to advancing math equity.

PD should focus on:

- The language used in the classroom
- What behaviors and outcomes are praised and how
- How mistakes are acknowledged and valued
- The questions that are asked to student
- Exploring the different ways to solve math problems
- Self reflection

All Third Space Learning math tutors receive specific training on fostering positive mindsets, including praising students for their working out, their explanations and their perseverance - not just for finding the right answer.

> "We have enjoyed using Third Space Learning. We love the feedback reports and the confidence it has given our pupils to attempt math using a different mindset."
>
> Celia Whitehead, School Leader

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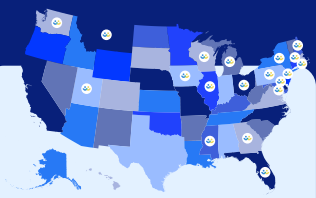

**23**
states reached

**4,000**
schools supported

**170,000**
students taught

**2,000,000**
hours of tutoring

## Do you have a group of students who need a boost in math?

Each student could receive personalized lessons every week from our specialist one-on-one math tutors.

- Differentiated instruction for each student
- Aligned to your state's standards
- Scaffolded learning to close gaps

93% of teachers feel Third Space Learning lessons helped their pupils achieve higher assessment scores.


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