

My Math Academy™

Alignment to Academic Achievement and Funding Guidelines

At Age of Learning, we blend education best practices, innovative technology, and insightful creativity to create engaging and effective educational experiences that bring learning to life.

Our newest solution, My Math Academy is a fully adaptive, standards-based program backed by gold standard efficacy research and designed for the classroom. My Math Academy helps children in pre-k through 2nd grade build mastery of fundamental math concepts.

This document outlines how My Math Academy supports academic achievement and aligns to federal funding guidelines. Our goal is to help district leaders evaluate our research-based solution and explore the positive impact on students, teachers, and families.

At-a-Glance

	District Funding Allowances	My Math Academy
ESSER I, II, III	Elementary and Secondary School Emergency Relief Fund (CARES/ARP/HB 133)	✓
	Learning Loss	
	Education Technology	
	Summer School Activities	
	Social and Emotional Learning	
Title I	Professional Development for Educators	✓
	Improving the Academic Achievement of the Disadvantaged	
	Use effective methods and instructional strategies that are based on scientifically based research	
	Provide opportunities for all children to meet the state's proficient and advanced levels of student academic achievement	
	Strategies to Increase Family and Student Engagement	
Title II: Improving Teacher Quality	High-Quality Professional Development	✓
Title III: Language Instruction for Limited English Proficient and Immigrant Students		✓
Title IV, Part A and B: Student Support and Academic Enrichment		✓
Head Start: School Readiness for Children Birth to Age 5		✓

ESSER I, II, III:

Elementary and Secondary School Emergency Relief Fund (CARES/ARP/HB 133)

District Funding Allowances

ESSER Learning Loss

(A) Administering and using **high-quality assessments** that are valid and reliable, to accurately assess students' academic progress and assist educators in meeting students' academic needs, including through differentiating instruction

(B) **Implementing evidence-based activities** to meet the comprehensive needs of students

My Math Academy Delivers

Built upon game-based learning principles,¹ My Math Academy uses **pretests to place a child in his or her anticipated Zone of Proximal Development** as a starting point in the program.² Each game formatively assesses the child as he or she plays and uses assessment data to adapt his or her learning path, scaffolding, and overall level of difficulty to ensure the child is always working at the just-right level.

Student progress can be viewed in real time through the Teacher Portal. Teachers can see what skills a student has mastered or what skills he or she needs support with. The portal also uses assessment data to recommend offline activities that provide students with additional support. **My Math Academy covers 96 concepts and skills at a granular level, giving teachers individualized, highly specific student data to use for differentiation.**

My Math Academy is a digital learning tool that **combines adaptivity, evidence-based learning progressions**, and game design to build foundational number sense and operations skills in pre-k through 2nd grade. This ensures that as students progress in My Math Academy, the system generates evidence about their learning for each target skill or competency.³

Each learning activity is built on evidence-based learning progression. As a student progresses through My Math Academy, the Personalized Mastery Learning System uses ongoing assessment to adapt his or her learning path, scaffolding, and overall level of difficulty. Driving this system is a research-based knowledge map that outlines learning objectives and their prerequisite relationships.

My Math Academy has received the **Digital Promise Product Certification on Learner Variability**, which certifies that My Math Academy has incorporated features and tools capable of supporting the broad range of learners in diverse learning contexts and creating multiple opportunities for differentiation.

1. (e.g., Shute & Kim, 2014)

2. (Vygotsky, 1978)

3. (Mislevy, Almond, & Lucas, 2003; Shute, 2011)

District Funding Allowances

My Math Academy Delivers

ESSER: Learning Loss (cont.)

(C) Providing information and assistance **to parents and families** on how they can effectively support students, including in a distance learning environment

My Math Academy's Parent Center allows parents and caregivers to **track their child's progress**, in real time. It offers explanations to help parents and caregivers understand why their children are learning specific skills. The portal also provides **offline, curated learning activities** based on a child's progress on his or her personalized learning path. These activities are structured to be a collaborative experience between the child and family. Research has shown that appropriate and authentic collaborative problem-solving activities are a great way to help children expand their mathematical flexibility for transfer of learning to new situations.⁴ The Parent Center houses **printable worksheets** to further support student learning at home. These include offline activities such as games, puzzles, or problem-solving challenges.

The Parent Center also provides **educational videos and Math Talk prompts** based on students' progress within My Math Academy. Research has shown that when students have meaningful conversations about math and use math vocabulary, they develop the thinking, questioning, and explanation skills needed to master mathematical concepts.⁵ This helps parents and caregivers gain insights into the concepts and strategies their children are learning, enabling them to support a robust home numeracy environment for better learning outcomes.⁶

(D) Tracking student attendance and improving student engagement in distance education

Through the use of the Teacher Portal, **teachers can track how often students log in to My Math Academy** and their **total active time spent making progress** on their personalized learning paths.

To support student engagement, My Math Academy uses a cohesive narrative and story context with interactive characters. A 2017 randomized-control study found that 100% of teachers using My Math Academy reported that their students enjoyed using the program. One hundred percent of teachers also observed an increase in students' interest in learning math after using My Math Academy.⁷ Another randomized-control study in 2019 replicated this finding.⁸ These studies included nearly 1,500 students from highly diverse Title I schools (75–96% Hispanic).

“My principal was really impressed with the dashboard end results at the end of the year, but even monthly, many of the children showed a lot of gains...”

—Kindergarten teacher

4. (Barron & Darling-Hammon, 2008)

5. (e.g., Hudson, 2017)

6. (Kleemans, Peeters, Segers, & Verhoeven, 2012)

7. (Thai, Li, Schachner, 2018)

8. (Bang & Li, 2020)

District Funding Allowances**ESSER: Education Technology****ESSER: Summer School Activities**

Summer learning and supplemental after-school programs, including providing classroom instruction or online learning during the summer months

My Math Academy Delivers

My Math Academy delivers real results through proven learning science and adaptive technology.

My Math Academy provides students of all levels with an individualized learning path. The program works to close the opportunity gap by using dynamic, interactive assessment activities to evaluate what students know, what they don't know, and what they're most ready to learn.

My Math Academy provides teachers with real-time data and recommendations that can enhance and optimize instruction. The Teacher Portal suggests groupings of students who are working on or are ready to learn the same concept. Within each group, teachers can see who is progressing through the concept and who needs support. The portal recommends offline collaborative activities that can be used with the group to provide differentiated support.

My Math Academy increases student math gains in as little as 12 weeks,* making it an ideal program for the summer school environment. In a 2018 randomized-control study, using My Math Academy for 45 minutes a week for 12–14 weeks increased pre-k and kindergarten student math gains by 36%, compared with students who did not use the program.⁹ Over the course of 12–14 weeks, students learned an average of 25 new math skills by playing My Math Academy, equating to one new skill learned for every 37 minutes of usage. Another study in 2019 replicated these findings with students in kindergarten through 2nd grade.¹⁰

Many teachers in the My Math Academy pilot reported that in comparison to other educational technology products, My Math Academy had a significantly greater positive impact on students' math skills, as well as their engagement, motivation, and confidence in learning math. Ninety-five percent of teachers using My Math Academy found the program easy to implement, which is an important feature for summer school teachers.

9. (Thai, Li, & Schachner, 2018)
10. (Bang & Li, 2020)

*The full study is available at www.AofL.com/research

District Funding Allowances

My Math Academy Delivers

ESSER: Social and Emotional Learning

Using My Math Academy has a positive impact on students' social and emotional well-being.

In two randomized-control studies, all teachers reported that My Math Academy significantly and positively impacted students' interest and self-confidence in learning math.¹¹

My Math Academy's game-based learning approach provides interactivity, adaptive challenges, and ongoing feedback to sustain engagement and motivation. Such game elements can promote perseverance by encouraging children to embrace challenges and use mistakes to learn. On My Math Academy, **learners are empowered with agency** in choosing what they want to play next, and their interactions drive learning progression. Learner agency helps students become more confident and productive lifelong learners.¹²

ESSER: Professional Development for Educators

High-quality implementation and professional development are provided to teachers through our **e-Learning platform, webinars, professional resources, and tech support delivered throughout the year**. The My Math Academy Teacher Professional Development Course focuses on building teacher confidence in launching the program, guiding teachers in understanding the Teacher Portal and how to interpret student data, and providing ongoing opportunities for teachers to explore additional areas of professional interest (e.g., group learning theory, zone of proximal development, growth mindset).

“The Teacher Dashboard is an amazing tool for our teachers when it comes to planning their math instruction. It is very easy to understand, in terms of students' prior knowledge, what lessons students have mastered, and what lessons they are struggling with. **With the guidance of the Teacher Dashboard, teachers can truly individualize instruction which has helped our students succeed tremendously!**”

—Instructional coach

11. (Thai, Li, & Schachner, 2018; Bang & Li, 2020)

12. (Wills, 2011)

Title I: Improving the Academic Achievement of the Disadvantaged

District Funding Allowances

Title I:

Use effective methods and instructional strategies that are based on scientifically based research that:

- (A) strengthen the core academic program in the school;
- (B) increase the amount and quality of learning time, and
- (C) include strategies for meeting the educational needs of historically underserved populations;
- (D) include strategies to address the needs of all children in the school, but particularly the needs of low-achieving children and those at risk of not meeting the State student academic achievement standards
- (E) innovative teaching methods, which may include applied learning and team-teaching strategies

My Math Academy Delivers

My Math Academy has received the Digital Promise Research-Based Design certification, which certifies that My Math Academy meets the highest rigor in research-based design.

My Math Academy's standards-aligned games cover 96 concepts and skills. At the heart of My Math Academy is an innovative Personalized Mastery Learning System that adapts the game's learning path, scaffolding, and overall level of difficulty to meet the learner's needs. A host of scientifically based research underlies the design and development of this system:

- **Mastery Learning Theory** aims to deliver personalized ongoing *assessment, feedback, correctives, enrichment, and alignment* of the instructional components to keep the students in their zone of proximal development where they can reach their potential with guidance.
- **A highly detailed scope and sequence** is informed by current research on the learning trajectories approach for early mathematics, literature on math interventions, and state and national standards frameworks such as the CCSS-M and the National Council of Teachers of Mathematics' Standards and Principles for School Mathematics. A knowledge map is used to articulate the precursor, successor, and correlational relationships between and among content strands and learning objectives. As a result, the learning objectives are carefully ordered into sequences that support individual students' learning.
- My Math Academy promotes learning via playful engagement, learning in context, and formative assessment.¹³ Children play to learn in My Math Academy.
- Game-based learning has been shown to sustain engagement and motivation across time via ongoing feedback, meaningful and engaging contexts, interactivity, and adaptive challenges.¹⁴
- Math is embedded in story context, which helps all students, including struggling readers, gain access to math and make sense of math problems in a story context.¹⁵

13. (Gee, 2003)

14. (Bransford, Brown, & Cocking, 2000)

15. (Fisch's Capacity Model, 2000)

District Funding Allowances

My Math Academy Delivers

Title I (cont):

Use effective methods and instructional strategies that are based on scientifically based research.

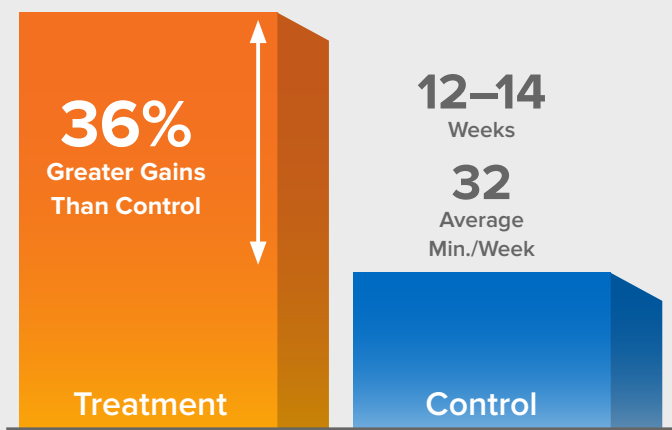
- Just-in-time information and formative feedback presents players with a series of well-ordered problems to support mastery.¹⁶
- Formative assessment mechanics that are built into the system require learners to actively practice retrieving new and previously learned information, which has been shown to be an effective strategy for promoting long-term learning.¹⁷

My Math Academy has also received the **Digital Promise Product Certification on Learner Variability**, which certifies that My Math Academy has incorporated features and tools capable of supporting the broad range of learners in diverse learning contexts and creating multiple opportunities for differentiation. My Math Academy uses auditory and visual cues to guide players, as opposed to written language, so that the youngest learners can access each game’s directions and feedback.

My Math Academy is available in both English and Spanish.

My Math Academy supports **applied learning** through the learning games and via offline resources. Through continual assessment, students are required to demonstrate their mastery and understanding before moving on. Children also practice applying what they have learned through offline activities—printables, Math Talks, and enrichment projects—available via the Parent and Teacher Portals. These activities are delivered at the right time, when the student is ready to transfer, based on data collected about the child’s understanding in the game system.

My Math Academy Helped Increase Math Gains in 12 Weeks*



My Math Academy significantly accelerates learning gains in students’ math knowledge, compared to control-group peers in as little as 45 minutes per week.

<https://www.ageoflearning.com/research/>

 20 Classrooms	 428 Students	 100% Low-Income Population
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* For illustrative purposes—the full study is available at www.AgeofLearning.com/research.

16. (Gee, 2005)
17. (Bjork, 1994)

District Funding Allowances**Title I:**

Provide opportunities for all children to meet the state's proficient and advanced levels of student academic achievement.

My Math Academy Delivers

My Math Academy's standards-aligned games cover number sense and operations from pre-k through 2nd grade. The program uses a Personalized Mastery Learning System to meet the needs of every child, whether he or she requires more practice with a concept or is ready for a challenge. This system ensures that every child is appropriately supported and challenged to maximize growth.

My Math Academy has been proven with two randomized-control trials to increase student math gains over a short period of time. In just 12–14 weeks, My Math Academy accelerated pre-k and kindergarten math learning gains by 36%, as compared to students who did not use the program. Over the course of 12–14 weeks, students learned an average of 25 new math skills. Another study replicated these findings with students in kindergarten through 2nd grade. Students made significantly greater gains on their math skills after using My Math Academy for about 15 hours over the course of 12–13 weeks, compared to a control group that did not use the program.

Title I: Strategies to Increase Family and Student Engagement

The **My Math Academy Parent Dashboard** enables teachers to engage families as learning partners to assist in reaching students' learning goals. The home-school connection is facilitated as teachers can use digital teacher dashboards to assign custom lessons for students to complete at home for ongoing practice in math skills. Teachers can also share progress reports and student work through the My Math Academy platform.

The Parent Dashboard provides an overview of the child's weekly usage, progress, and action items, as well as recommended activities that parents and caregivers can do at home to strengthen their child's understanding of specific concepts. The Parent Dashboard also provides a short video clip of each game the child is playing and indicates why the concept or skill is important for the child to learn.

Notifications provide parents and caregivers with information about learning goal completion, progress, and accomplishments to celebrate. Thus, My Math Academy has the unique potential to bolster the home-school connection and help schools and educators extend learning at home as well as during breaks.¹⁸

18. (Alexander, Entwisle & Olson, 2007)

District Funding Allowances**Title I: High-Quality Professional Development****My Math Academy Delivers****Teacher Professional Development**

High-quality implementation and professional development are provided to teachers through our e-Learning platform, webinars, professional resources, and tech support delivered throughout the year. The My Math Academy Teacher Professional Development Course focuses on building teacher capabilities and confidence in launching the program, integrating My Math Academy in their everyday instruction, and making use of technology to reflect on data related to students' progress so they can personalize learning and intervene with struggling learners.

The Teacher Portal and professional development course were designed together with teachers who have used the program, ensuring that they meet the needs of teachers.¹⁹

¹⁹. (Sheehan, Rothschild, & Buchan, in press)

My Math Academy is a fully adaptive, standards-based program backed by gold standard efficacy research.

www.AgeofLearning.com/schools/mymathacademy