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2021 White Paper:

A Roadmap to Using ESSER Funds to Accelerate Math Recovery

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Muzology has a proven track record of rapidly achieving math learning gains.

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SUMMARY

This paper clarifies the available funding and relevant strategies required to meet the rigors of the 2021 ESSER funding and maximize recovery for middle and high school math students this summer and during SY2021-22.

The pandemic of the past year has changed the education landscape by closing schools, disrupting educational routines, challenging teachers and administrators, and profoundly impacting students. Recently passed legislation, the American Rescue Plan 2021, provides some much-needed relief to address these harsh challenges. The funding is also an opportunity to seize the moment and move forward with innovative approaches to learning.

The need for learning recovery for students is real, not only in terms of academics but also in terms of their social and emotional learning. “As a result, school systems need to create a step change in student learning if we are to catch up on what has been lost through this pandemic. Systems can start now to create acceleration plans using evidence-based strategies ... and targeted to the students who need them most....”¹

The need for accelerated learning recovery in mathematics has been well documented with students showing a decline of 5 to 10 percentile points from the previous year and more so for students that are from disadvantaged backgrounds.² The importance of math cannot be underestimated. Successful completion of pre-algebra and algebra is often referred to as a “gatekeeper” to postsecondary education and opportunities in the workplace.³

Muzology offers a solution to schools and school systems seeking ways to accelerate learning recovery in math. Muzology is a leader in providing students with evidenced based Pre-Algebra instruction designed to maximize engagement and increase achievement for all students. Developed by learning specialists, subject matter experts, and hit songwriters, Muzology is a digital learning system that uses a) music videos to make learning math fast, fun, and easy; and b) gamified formative assessments to track learning progress and growth. In addition to successful use with Tier 1 and 2 students, Muzology has been used successfully with special needs students, those at risk, and in summer school and after-school programs.

Muzology’s award-winning platform has a notable track record of achieving rapid and robust results, which accelerate learning recovery.



Share this document with your principal, district grant writer, district administrator, or federal programs coordinator.

¹ Dorn, Emma et. al. COVID-19 and learning loss—disparities grow, and students need help, McKinsey & Company, December 2020. <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19-and-learning-loss-disparities-grow-and-students-need-help#Sawchuck>,

² Kuhfeld, Megan, Learning during COVID-19: Initial findings on students’ reading and math achievement and growth, NWEA, November 2020. <https://www.nwea.org/research/publication/learning-during-covid-19-initial-findings-on-students-reading-and-math-achievement-and-growth/>

³ Musen, Lindsey. Pre-algebra and Algebra Enrollment and Achievement, Annenberg Institute for School Reform, 2010. <https://files.eric.ed.gov/fulltext/ED533119.pdf>

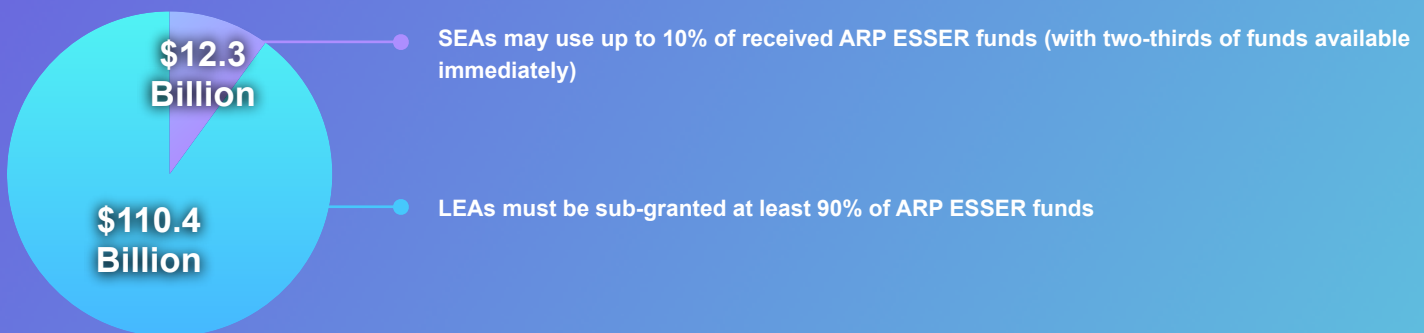
WHAT FUNDS ARE AVAILABLE?

On March 11, 2021, President Biden signed the \$1.9 trillion American Rescue Plan into law, which includes the third round of COVID-19 relief funding for education. Two previous pieces of legislation, the \$82 billion Education Stabilization Fund and \$30.75 billion Coronavirus Aid, Relief and Economic Security (CARES) Act, focused on economic recovery and emergency measures. In contrast, the education funding under the American Rescue Plan – known as the **Elementary and Secondary School Emergency Relief Funds or ESSER – focuses on helping schools safely reopen and address the impact of the pandemic on students**. Funds will be available through September 2023 for use through the 2023-2024 school year.

The new ESSER funds total \$170B and include:

- \$122.7 billion for K-12 state education agencies (with \$800 million allocated for children experiencing homelessness)
- \$2.75 billion to governors for use by private schools
- \$3 billion to support the Individuals with Disabilities Education Act
- \$7.2 billion for the E-rate program for home internet access and devices
- \$40 billion for colleges and universities

American Rescue Plan - ESSER Funding: Allocation to SEAs and LEAs



SEAs and LEAs

ESSER funds are granted to SEAs with two-thirds of funds immediately available and remaining funds available after states submit ESSER implementation plans. States are required to reserve allocations to address learning loss (5%), for after school activities (1%), and for summer learning programs (1%). States may also use funds for administration, however states are required to sub-grant **at least 90% of total ARP ESSER funds to LEAs (including charter schools that are LEAs)**.

State allocations are made to LEAs based on their respective share of Title 1 funds received in the 2020 fiscal year, and based on Title 1, Part A of the Elementary and Secondary Education Act (ESEA).

LEAs have great flexibility in use of ESSER funds, however at least 20% of funds must be used for evidence-based interventions that accelerate learning recovery and the remaining funds may be used for a wide array of uses pertaining to needs that have arisen due to COVID-19.

[Click here](#) to view the full text of the bill - H.R. 1319 - American Rescue Plan Act of 2021.

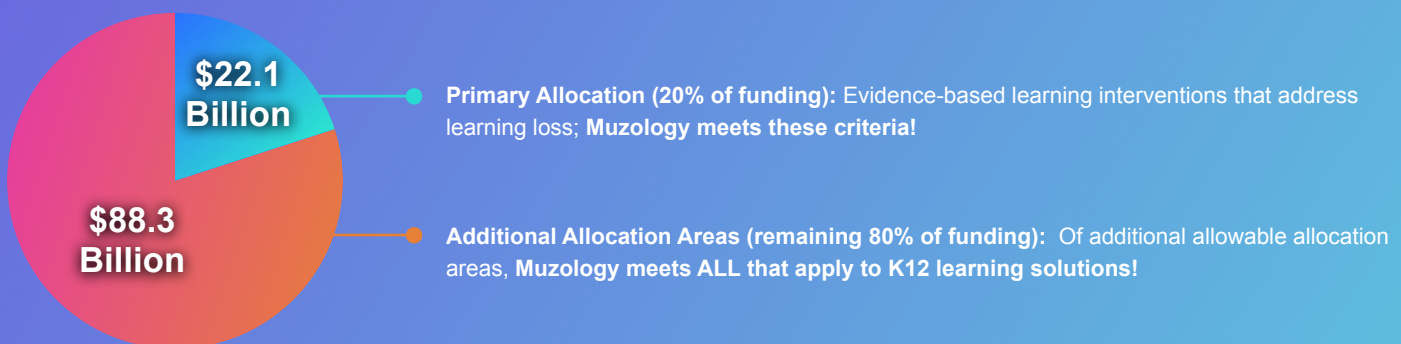
[Click here](#) to check out additional US Department of Education Covid Resources.

USE OF FUNDS BY LEAS

LEAs must use ARP ESSER funds as follows:

- At least 20% of funds must be used to address the need for **accelerated learning recovery through evidence-based interventions** that support students' academic and social and emotional learning (SEL) needs.
- The remaining 80% of funds can be spent on a **wide range of activities** pertaining to the following:
 - Elementary and Secondary Education Act, Individuals with Disabilities Education Act (IDEA)
 - Carl D. Perkins Career and Technical Education Act (CTE)
 - Adult Education and Family Literacy Act (AEFLA)
 - To address learning loss
 - To support summer learning and supplemental after-school programs
 - To provide mental health services
 - To maintain the operation and continuity of services by employing existing staff
 - To support students from low-income families, children with disabilities, English language learners, racial and ethnic minorities, students experiencing homelessness, and youth in foster care
 - To update school facilities to reduce risk of virus transmission and improve indoor air quality; training and PD on minimizing germ spread and infectious diseases; purchasing sanitization supplies
 - Planning and implementation strategies for long-term closures, including meals for eligible students and technology for online learning
 - To develop and implement school health and safety protocols and COVID-19 preparedness and responses measures based on guidance from the CDC

American Rescue Plan - ESSER FUNDING - LEA ALLOCATION



NOTE: Within 30 days of receiving their allocations from the state, LEAs must publish plans for reopening schools for in-person learning.

HOW CAN SCHOOLS PARTICIPATE?

Schools

Muzology's high quality digital instruction has a proven track record of accelerating math recovery and getting ALL students Algebra-ready.

School administrators should contact their district administrators and let them know which ESSER aligned resources they'd like to access. Please share this white paper with your district administrator.

Muzology is:

- ESSER-aligned
- Evidence-based
- Mapped to standards
- SEL-aligned

Districts can purchase Muzology as a license or units. Muzology may be purchased for use during summer programs, after school programs, and throughout the academic year. Multi-year discounts are available. Muzology is able to activate teacher and student accounts within 24 hours to enable instant implementation. Muzology provides support throughout the summer and school year to ensure effective use and implementation.

Contact info@muzology.com for more information.

ABOUT MUZOLOGY

Muzology looks forward to working with schools and school systems in developing and implementing plans to improve learning with American Rescue Plan funding (ESSER). Visit muzology.com or contact us (info@muzology.com) for more information.

Muzology is a high quality, standards and SEL-aligned, digital learning solution with a proven track record of accelerating math recovery. Muzology's evidence-based platform is ESSER aligned and highly successful at getting ALL students Algebra-ready.

Muzology's digital learning platform harnesses the power of music to make learning math engaging, exciting, and effective for students of all backgrounds and abilities. Developed by cognitive psychologists, subject matter experts, and hit songwriters, Muzology's multi-sensory math music videos are academically sound, linked to standards, based on learning theory and neuroscience, and supported by research.

Muzology consists of an iterative series of high-energy pop music videos containing catchy melodies, appealing graphics, and choreographed dance moves designed to teach fundamental Pre-Algebra skills, procedures, and concepts in a way that connects with students. Videos are intentionally designed to go beyond rote memorization. Formative assessments (presented as gamified math "Challenges") are mapped to each music video and establish basic, proficient, and advanced application of the information presented in each video. Robust and flexible analytics allow teachers to easily monitor progress and growth at the student and class level. Assignable, customizable playlists support differentiated instruction and keep students in synch with curriculum and pacing.

Muzology's music videos activate brain regions critical for successful learning and increase student engagement, attention, and retention. Specializing in pre-algebra, Muzology is used by students in grades 5-8 to get Algebra-ready, and by students in grades 8-10 for learning recovery and as a math refresher. Advanced students in lower grades also use the platform.

All students learning Algebra-readiness math skills and content benefit from Muzology's evidence-based, proven approach to boosting retention, motivation, and engagement.

- **Learn to Standards** - Muzology's multi-sensory music videos are mapped to standards to support seamless integration with other instructional material and math curricula.
- **Learn Anywhere, Anytime** - In class or at home, Muzology's web-based learning platform can be accessed on all internet-connected devices to support learning anytime, anywhere. Muzology was used effectively during the pandemic when schools pivoted to remote and hybrid learning.
- **Learn Quickly** - Muzology's iterative music videos teach weeks of content in a single 3-5 minute video, and present a clear, sequential path to support self-paced and self-directed learning. Students typically experience notable learning progress within days using Muzology!



The Muzology platform has been recognized with prestigious awards from the following organizations:



U.S. Department
of Education



National Science
Foundation



SIIA

//CODiE//
2021 SIIA CODiE FINALIST



ESSER ALLOWABLE USES & MUZOLOGY ALIGNMENT

The American Rescue Plan specifies allowable usage of funding under ESEA, IDEA, for targeted interventions, accelerated learning recovery, and summer school programs. Here's how Muzology qualifies and can help accelerate math learning in your school, district, and state.

Allowable Usage 	Muzology Alignment 
Curriculum already authorized in the Elementary and Secondary Education Act (ESEA)	<ul style="list-style-type: none"> ✓ Structured as a supplemental math platform, Muzology integrates alongside adopted math curricula and aligns to standards. ✓ Muzology's instructional math music videos are mapped to Pre-Algebra standards across multiple grade levels; each video typically corresponds to two to four weeks of math curriculum.
Curriculum and/or services sanctioned by Individuals with Disabilities Education Act (IDEA)	<ul style="list-style-type: none"> ✓ Muzology is used successfully with special needs students and learners with IEPs. ✓ Teachers note that Muzology "engages special needs students, keeps their brains active and captures their attention with light, color, cool music, repetition — and all the while, teaching and learning is taking place." ✓ An educator who conducted her master's research on Muzology found that it significantly mitigated learning gaps between students with and without IEPs.
Address the unique needs of low-income children or students, children with disabilities, English learners, racial and ethnic minorities, students experiencing homelessness, and foster care youth	<ul style="list-style-type: none"> ✓ Muzology meets the needs of students who are frequently marginalized. ✓ Many students who struggle with learning math and "check out," know the words to countless pop songs. Muzology uses the inclusive, familiar, and engaging environments of music and gamification for students to build readiness for Algebra. ✓ At a Title I Arkansas school (70% African American, 20% Hispanic; 97% free or reduced lunch), only 4% of students were at grade-level in math. After using Muzology for less than a year, these students demonstrated an impressive 2-3 year increase in learning growth on NWEA MAP® Growth™ assessments.
Implement evidence-based summer enrichment activities designed to respond to students' academic, social, and emotional needs and to address the disproportionate impact of COVID-19 on subgroups of students described in ESEA.	<ul style="list-style-type: none"> ✓ Muzology's scientifically crafted platform is designed to produce rapid results. Muzology's rigorous instructional music videos allow students to learn in weeks what may typically take months. This makes Muzology an ideal intervention for summer enrichment programs in which learning speed and efficiency are required. ✓ Muzology is evidence-based, SEL-aligned, and has proven track record of repeatedly yielding results during summer school programs. ✓ In one study, during a five-week districtwide summer bridge program, students (taking a summative Pre- and Post-Test diagnostic) improved twice as much on questions with corresponding Muzology music videos compared to questions for which there were no Muzology videos.
Address the need for accelerated learning recovery in math through evidence-based interventions that respond to students' academic, social, and emotional needs.	<ul style="list-style-type: none"> ✓ Muzology offers students a relevant, inclusive, engaging, music-based way to connect with the material. ✓ Muzology is evidence-based and consistently produces results, especially among learners who exhibit marked proficiency gaps and require significant learning recovery. ✓ Muzology is SEL-aligned and meets the Standards for Social and Emotional Learning as identified by CASEL by supporting self-awareness, self-management, responsible decision making, relationship skills, and social awareness. ✓ Teachers consistently report impressive engagement levels with Muzology; "I've seen a higher level of engagement with more kids than with anything else I've tried," explained a math dean about her use of Muzology with underperforming students.

EVIDENCE BASE: RANDOMIZED CONTROLLED TRIAL

RANDOMIZED CONTROLLED TRIAL - Vine Magnet Middle School Knox County Schools (Knoxville, TN) - 2015



Participants: 62 low-performing 6th graders

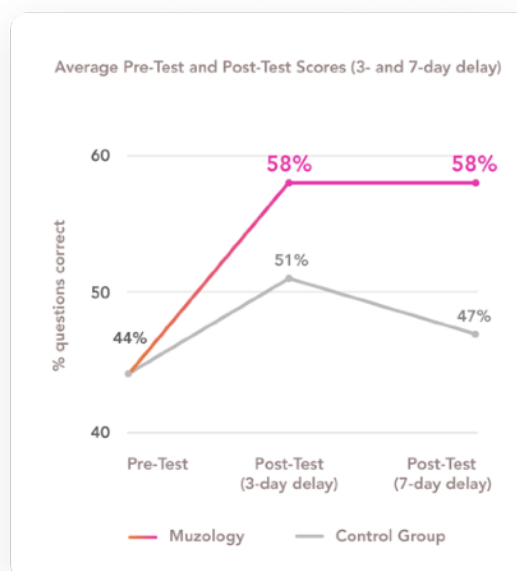
Methodology: The Muzology Group viewed a series of music videos on fractions; the Control Group viewed videos with the same information presented conversationally (using the same talent and graphics). After 3- and 7-day delays (with no further exposure to the videos), students took surprise, summative tests.

Results:

- Students in the Muzology Group **answered twice as many questions correctly** as compared to the Control Group, $F(1, 62) = 5.64, p < .05, d = .3$.
- After a 7-day delay, the Muzology Group **retained their learning gains**, while the Control Group returned to near baseline levels, $F(1, 60) = 4.84, p < .05, d = .44$.
- Students (71%) across both conditions chose **learning with music videos as preferred** vs. reading about math or watching videos of people talking about math.

Key Finding:

Muzology outperformance is sustained; Control Group performance drops to near baseline after a week.



EVIDENCE BASE: SUMMER SCHOOL DATA & PILOTS

SUMMER SCHOOL - DISTRICT PILOT

Knox County Schools (Knoxville, TN) - 2016



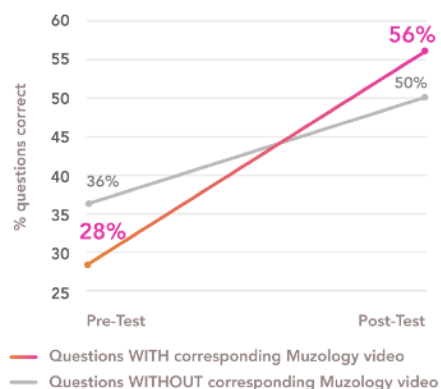
Participants: 270 students across 8 remedial summer schools districtwide

Methodology: Students took a summative district Diagnostic prior to and after Muzology use that summer; students also took formative in-platform Pre- and Post-Tests before and after watching individual Muzology music videos.

Results:

- On the summative district Pre/Post-Test Diagnostic, **students improved twice as much** on questions with corresponding Muzology videos compared to questions for which there were no Muzology videos, $F(1, 112) = 48.8$, $p < .05$, $\eta^2 = .30$.
- On formative in-platform quizzes, **99% of students showed improvement** from baseline after watching Muzology videos; 87% of students improved their baseline score by 50 points or more.

Average Pre- and Post- Test Score by questions with and without corresponding music videos.



Key Finding:

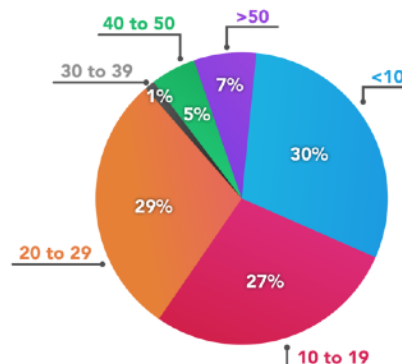
Performance doubles for questions with a corresponding Muzology video.

SUMMER SCHOOL - DISTRICT IMPLEMENTATION Knox County Schools (Knoxville, TN) - 2017

Participants: 200 outgoing 8th grade students across 8 schools

On a summative District Diagnostic administered to 200 outgoing 8th graders, 20% of students increased their performance by more than 40 points after using Muzology. Before Muzology, 1% of students passed (i.e., scored 70% or higher) the Pre-Test Diagnostic. After using Muzology for 4-5 weeks, 11% of students passed the Post-Test Diagnostic.

Percent of students increasing Diagnostic score by designated ranges of points before and after watching a Muzology music video.



EVIDENCE BASE: DISTRICT DATA & PILOTS

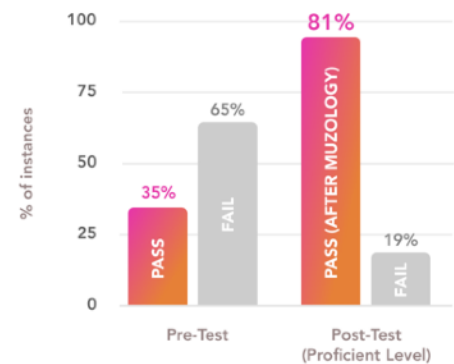


DISTRICTWIDE IMPLEMENTATION Knox County Schools (Knoxville, TN) - SY 2016/17

Participants: 3,400 6th-9th grade students across 20+ schools

Across 3,400 students using Muzology district-wide, 35% of students passed (i.e., score 70% or higher) the in-platform Pre-Test (before watching a Muzology video), whereas 81% passed the in-platform proficient level Post-Test on their first attempt.

First attempt pass/fail rates before and after watching a Muzology music video.



DISTRICTWIDE PILOT Hillsborough County Public Schools (Tampa, FL) - 2018



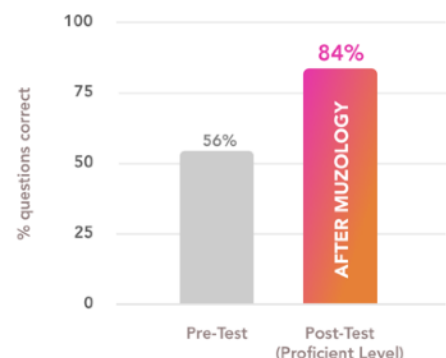
Participants: 2,700+ students attending 6-8th grades across 44 schools

Methodology: In a nine-week pilot, Muzology was implemented into classroom instruction. The district was interested in measures of in-platform engagement and learning growth, as well as student and teacher feedback.

Results:

- Students watched 8,000 videos and took 23,000+ quizzes.
- On formative in-platform quizzes, average Pre-Test scores improved from 56% (before watching Muzology videos) to **84% on proficient level** Post-Tests.
- "Before we found Muzology I actually had a C or a D. Because of Muzology I have a B or an A." (6th grader) // "I was close to failing math. I was like, 'Oh my gosh, this is really going to help my grade!' And then it went up to a 98 point something. Then it **made me like math more.**" (7th grader)

Average quiz score before and after watching a Muzology music video.



Key Finding:

Students go from failing to passing quizzes after watching Muzology videos.

EVIDENCE BASE: STATE DATA & PILOTS

Across an extensive series of studies and ongoing research, Muzology continues to demonstrate replicable increases in math performance and student confidence. Here's a snapshot of research and findings.



ARKANSAS 2019

Participants: 1,200+ students attending 5-9th grades across 18 schools and 8 districts

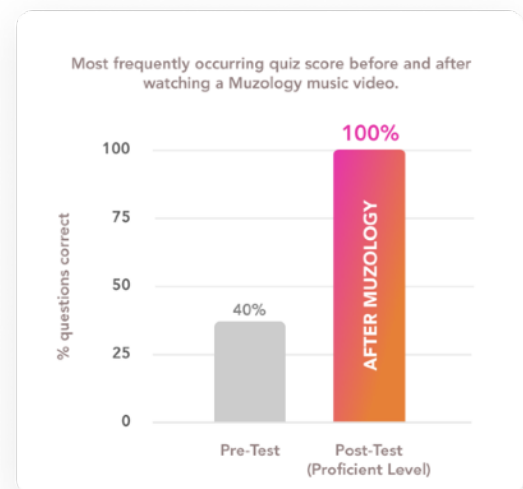
Methodology: Based on promising outcomes from a school pilot (see below), Arkansas conducted a multi-district pilot during the fall semester to gauge in-platform engagement and learning growth, as well as student and teacher feedback.

Results:

- Students watched 13,000 videos and took 24,000+ quizzes.
- On formative in-platform quizzes:
 - Average score (i.e., statistical average) improved from 50% on the Pre-Test (before watching Muzology videos) to 80% on the proficient level Post-Test.
 - The most frequently occurring score (i.e., statistical mode) increased from 40% on the Pre-Test to a **perfect 100% on the proficient level** Post-Test.
- "It's probably one of the **best resources that I've got**, and I've been teaching for 25 years." - Math Chair, Hall High School, Little Rock, AR

Key Finding:

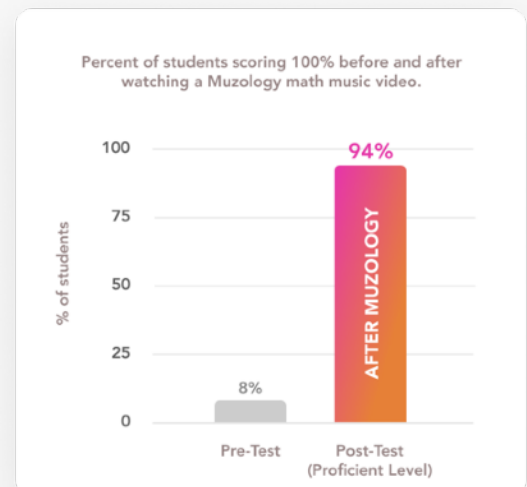
The statistical mode increased from 40% to a perfect 100%. Simply put, there were more 100s earned the first time students took the Post-Test (after watching Muzology math music videos) than any other score!



SCHOOL PILOT (Little Rock, AR) - 2019

Participants: 130 9th grade students

In a pilot at a low-performing school, just 4% of 9th graders were at grade level in math. Within days of watching Muzology math music videos, students who had never received an A in math were scoring 100% on in-platform quizzes. After 4 weeks on Muzology, 94% of students earned perfect scores (100%) on the proficient level Post-Test, whereas 8% of students had earned perfect scores on the Pre-Test (before watching a Muzology video).



HOW TO START USING MUZOLOGY

For more information regarding the material in this document, please contact us at: info@muzology.com. We're happy to assist you and your district to provide any additional information to help you successfully secure your funding requirements.

Muzology's high quality digital instruction has a proven track record of accelerating math recovery and getting ALL students Algebra-ready.

Muzology is:

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- Mapped to standards
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Educators and Students LOVE Muzology!



"The music videos are great because **they're accurate, they're factual**, they don't water it down at all. They don't leave anything out, so I don't have to worry that I've got to reteach."



"There's a catchy beat, a rhythm to it — they love that. **It's academically sound**. A hand motion may be enough to help them remember what they're supposed to do."



"I've seen **more engagement from more kids** than with anything else I've used."



"As Superintendent, you hear lots of trendy things. People are always trying to sell you some new gimmick or new way to learn — most of which don't pan out. Every now and then, **one actually does work. And this one did.**"



"It freaked my mom out when **I went home singing songs about math** because she knew I was struggling at math. But then I showed her and she started using Muzology to learn stuff like fractions and stuff she wasn't good at."



"I thought math was really boring and then **it just made it fun**. Every single time we watch those videos, we would dance."



"Before we found Muzology I actually had a C or a D. Because of Muzology **I have a B or an A.**"



"I was failing. **I feel so proud of myself now**. I've never felt that feeling of getting 100% on my tests. So, I want to thank Muzology."



"The **information is just so clear to me**. It's as if I'm reading a book without having to read any of the words. You just watch a simple video instead of having to read page after page."



"Muzology has not just given me confidence in my ability to do math. It's given me **confidence in my ability to do anything.**"

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KEY WORDS

American Rescue Plan ACT, ESSER, CARES, CRRSSA, Covid Relief funds, algebra, pre-algebra, math, numeracy, social emotional learning, SEL, learning loss, learning acceleration, learning recovery, evidence-based, research-based, Covid 19, pandemic funding, summer school learning, remediation, standards-based mathematics, music videos, neuroscience, brain science, middle school.