

RESEARCH BRIEF

Millions of Data Points **X** **100,000+ Students** **=** **Six Key Research Takeaways**

What matters is what works. Research from over 100,000 students shows DreamBox Math works.

By personalizing instruction, DreamBox Math ensures that all students, in any circumstance, can achieve significant growth in math.

All students deserve to have meaningful, effective, and targeted instruction, regardless of classroom environment, demographics, achievement percentile, or ZIP code. By personalizing instruction, DreamBox ensures that all students, in any circumstance, can achieve significant growth in math. We've got the research to prove it.

Background

Over the past several years, Discovery Education has partnered with third-party research organizations, expert data scientists, and education researchers to analyze the efficacy of DreamBox Math across over 100,000 K–8 students. The rich data set includes students using DreamBox Math in class, at home, during accelerated programs, for intervention, and for practice.

Researchers applied a variety of methodologies to explore diverse data for students from different-sized districts, in unique parts of the nation, and facing varying learning challenges. Regardless of how researchers explored data, they found all types of students' math proficiency grew with DreamBox Math.



About this Data

To illustrate the diversity of research methods and data sets for the five studies highlighted in this brief, please refer to the table at the end of this document for background information for each outcome.

1. Students in need of intervention can meet or exceed learning goals with DreamBox Math.

DreamBox Math uses Intelligent Adaptive Learning technology to analyze data about student behavior within the platform. The program can deliver millions of individualized learning paths to tailor every math lesson to meet each student's unique needs. As learners work through the program, the software adapts the level of difficulty, scaffolding, sequencing, number of hints, and pacing in real time. This personalized experience ensures that students at all levels can continually work in the optimal learning zone and progress at the right pace.

Data from South Carolina shows that 4th-grade students in the lowest performing percentiles who used DreamBox Math demonstrated average growth that approached or exceeded the South Carolina Value-Added Measures.

Organization

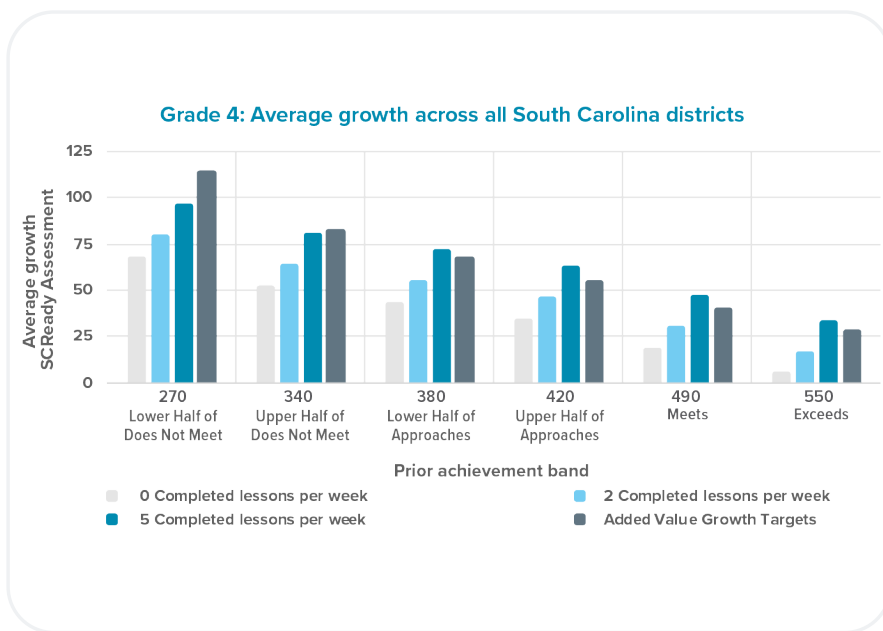
70 Districts across the state of South Carolina

Data Sample

- 77,707 Students in grades 4–5

Results

Fourth-grade students who scored in the lowest achievement percentile, but did not use DreamBox Math at all, averaged approximately 68 points of growth year over year compared with students at the same level who completed five lessons per week and averaged approximately 96 points of growth.



Likewise, 4th-grade students who scored 490 (Meets) in 2021 averaged approximately 19 points of growth with no DreamBox usage compared with 47 points growth for students who completed five lessons per week.

2. DreamBox Math meets all learners where they are and personalizes instruction for students who need extra help and students who are thriving.

DreamBox Math is proven effective for students who are performing below grade level and need extra attention and intervention efforts to catch up. However, due to the personalized nature of the program, researchers also have found that the program is effective for students performing at or above grade level as well.

The following research conducted at Pinellas County Schools in Florida suggests that DreamBox Math can be used as a program to support both intervention and enrichment.

Organization

Pinellas County Schools, FL

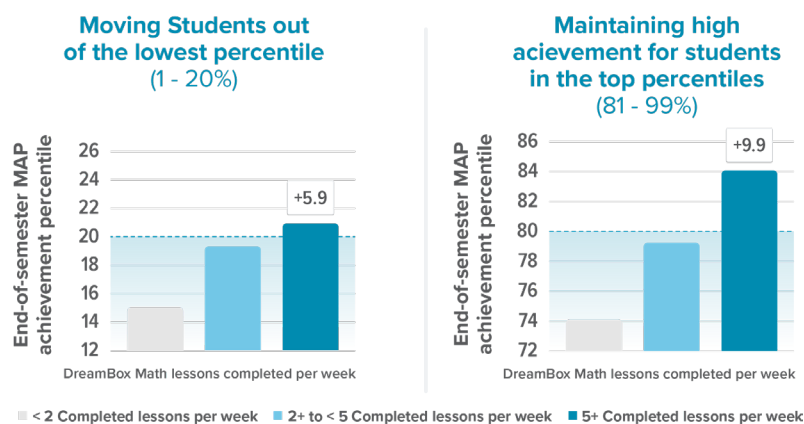
Data Sample

- 22,380 Students in grades 1–5 who completed NWEA MAP Growth assessment in fall 2019 and fall 2020
- 5,106 Students within the highest starting MAP achievement percentiles (81–99%).
- 3,278 Students within the lowest starting MAP achievement percentiles (1–20%)

Results

Students within both the lowest- and highest-achieving percentile groups experienced a significant improvement from completing an average of five or more lessons per week over eight weeks.

MAP percentile increase by start-of-semester achievement percentile



Students in the top achievement percentile who used DreamBox Math for the recommended amount of time (five-plus lessons per week) achieved significant growth of 9.9+ points.

3. English language learners benefit significantly from the unique approach DreamBox Math uses to support Spanish-speaking students.

The National Education Association estimates by 2025, one out of four students in classrooms across the United States will be an English language learner (ELL). Results from Napa Valley Unified School district showed that DreamBox Math had a positive impact for ELLs (over 27% of students within their dataset).

Students using DreamBox Math can access lessons in both English and Spanish. The lessons were built from the ground up with specific text and audio that ensures content and instruction are culturally appropriate for Spanish-speaking students. This unique approach hinges on the concept that students benefit when classroom instruction allows bilingual students to choose the language they prefer for arithmetic computation.

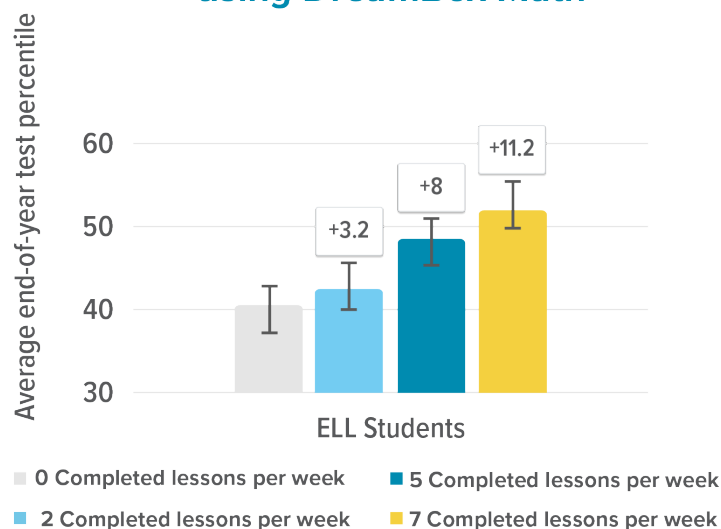
Organization

Napa Valley Unified School District, CA

Data Sample

- 6,462 Students in grades 1–8 who completed both the STAR math test in fall 2021 and spring 2022
- 27% of Students are ELL

Percentile increase for ELL students using DreamBox Math



Results

English language learners achieved more growth when completing five or more DreamBox lessons per week than students who completed fewer lessons.

ELL students who completed five DreamBox Math lessons per week scored 8 percentile points higher than ELL students who didn't use the program.

4. DreamBox Math is flexible to help students achieve in any learning environment. Students can meet math goals during class and at home.

School closures, remote learning, and chronic absenteeism can hinder student learning. However, research shows that DreamBox Math is equally effective both outside of school and in school. The flexible program enables students to access the same personalized instruction and support regardless of where they use the program.

Data captured in Pinellas County Schools in 2019 when students were able to use DreamBox Math in school and data captured in 2020 during pandemic school closures showed students demonstrated significant growth while using the program in both types of learning environment.

Organization

Pinellas County Schools, FL

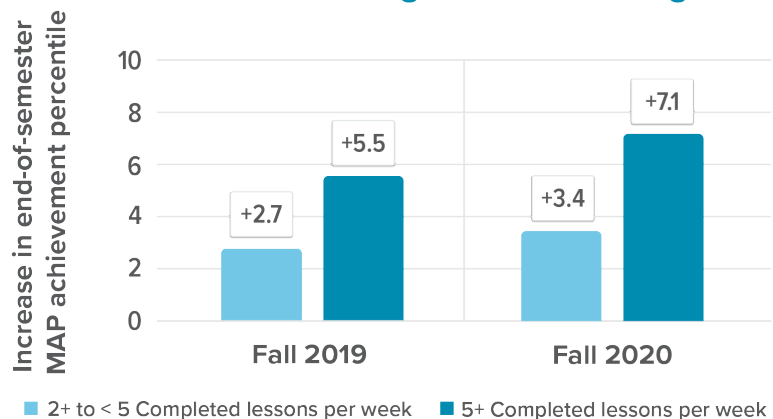
Data Sample

- 22,380 Students in grades 1–5 who completed NWEA MAP Growth assessment in fall 2019 and 2020

Results

Students who used DreamBox Math five-plus lessons per week at school and at home demonstrated similar growth. This suggests that DreamBox Math is an effective instructional solution in both classroom and at-home settings.

Increases in MAP percentile prior to school closures and during remote learning



5. DreamBox Math provides equity for learning experiences. Data indicates that historically underserved students using the program demonstrate the same level of growth as other student populations.

The latest NAEP data shows that math proficiency is down for 4th and 8th graders in every state and demographic. In 2019 and 2022, African American, Hispanic, and Native American students demonstrated the lowest scores, reflecting the high concentration of students of color in under resourced schools.

A third-party study conducted across eight elementary schools in William Penn School District Pennsylvania examined data from a diverse and historically vulnerable student population. Researchers learned that one hour of DreamBox Math usage per week correlated to higher end-of-year assessment scores regardless of race and free and reduced lunch (FRL) status.

Organization

William Penn School District, PA

Data Sample

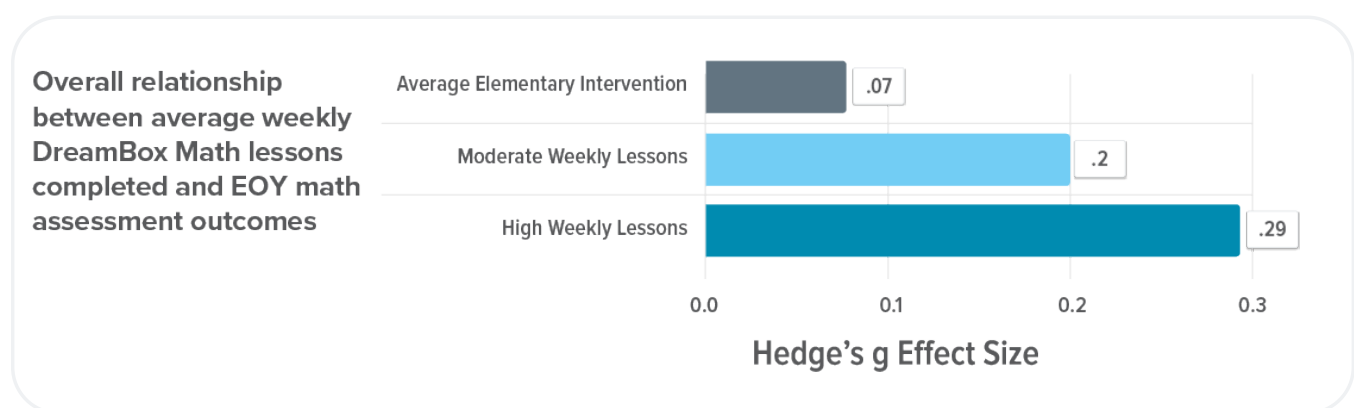
- A total sample of 1,851 K–6 students
- 1,831 Students in the sample qualify for FRL (98.9%)

District Demographic Data

- 88.8% African American students

Results

Historically underserved students who use DreamBox Math the recommended weekly amount (five lessons), show significant academic gains compared to students who didn't use the program.



The above graph displays results for all William Penn SD students, a population comprised of nearly all FRL and African American students. This data shows students who completed more weekly lessons had higher end-of-year math achievement than those who didn't use the program as frequently.

6. DreamBox Math works for students in every grade level, even middle school.

Whether students are just starting their math journey by learning to count to ten, or exploring Pythagorean theorem concepts, DreamBox has been proven to have a positive impact on learners in all grades. As previous data has indicated, DreamBox Math can help students in elementary school meet and exceed math learning goals, and the same is true for students in middle school. No matter what skills students are practicing or new concept they are learning, DreamBox Math meets them where they are and provides the right instruction to help math make sense in a meaningful way.

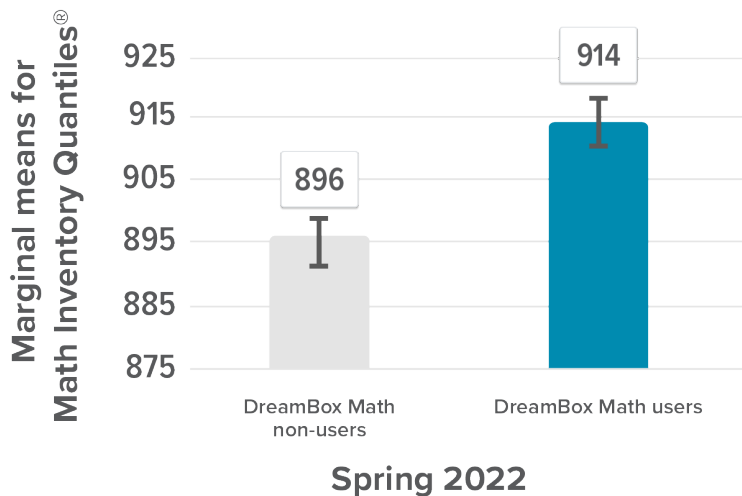
Organization

Large PreK-12 school district in AZ

Data Sample

- 4,034 7–8 Students
- 2,450 DreamBox Math users
- 1,584 DreamBox Math non-users
- 9,555 K–6 Students

Differences in EOY math assessment outcomes for 7–8 grade DreamBox Math users and non-users



Results

Students in all grades who used DreamBox Math weekly more during the academic school year saw more growth on end-of-year assessments. This was true for grades K–6 and grades 7–8. Research shows that middle school students (grades 7–8) who used any DreamBox Math at all scored statistically significantly higher on the end-of-year Math Inventory.™ This analysis matched users and nonusers.

Middle school students who completed at least 4.2 DreamBox Math lessons per week scored 18 points higher on EOY assessments than students who didn't use the program at all.

Background for Studies

Organization	Data Set	Time Frame	Assessment	Methodology
<p>Large Urban School District <u>Pinellas County Schools, FL</u></p> <p>Demographic Data</p> <ul style="list-style-type: none"> • 19% African American students • 18% Hispanic students • 51% Qualify for FRPL 	22,380 students in grades 1-5	8 Weeks in 2019 and 2020	NWEA MAP	<p>Quasi-experimental with matched control group</p> <p>Hierarchical linear modeling</p>
<p>Large Suburban School District <u>William Penn School District, PA</u></p> <p>Demographic Data</p> <ul style="list-style-type: none"> • 88% African American students • 15.8% Students with IEPs • 98.9% Qualify for FRPL 	~1,800 Students in grades K-6	2021-22 Academic school year	Savvas MSDA	<p>Treatment-only</p> <p>Regressions and partial correlations</p> <p>Standardized effect sizes (Hedge's g)</p>
<p>Statewide Implementation <u>South Carolina EOD</u></p>	77,707 Students in grades 4 and 5	2021-22 Academic school year	South Carolina State Assessment (SCReady)	<p>Quasi-experimental with matched control group</p> <p>Hierarchical linear modeling</p>
<p>Medium Urban School District <u>Napa Valley Unified School District, CA</u></p> <p>Demographic Data</p> <ul style="list-style-type: none"> • 58.4% Hispanic students • 27% English language learners • 8% Students with IEPs • 56.3% Qualify for FRL 	6,462 Students in grades 1-8	2021-22 Academic school year	STAR Math	Hierarchical linear modeling
<p>Large Urban School District <u>Arizona</u></p> <p>Demographic Data</p> <ul style="list-style-type: none"> • 81% White students • 13% Hispanic students • 15% Students with IEPs • 3% English language learners 	13,589 Students in grades K-8	2021-22 Academic school year	Houghton Mifflin Harcourt's Math Inventory™ Quantile®	<p>Treatment-only</p> <p>Regressions and partial correlations</p> <p>Standardized effect sizes (Hedge's g)</p>