

# Elementary and Middle School Students using DreamBox Math in Napa Valley Unified School District demonstrate significant gains on end-of-year math assessments

STUDENTS WHO COMPLETED 5+ LESSONS (30-60 MINUTES PER WEEK) SCORED OVER NINE PERCENTILE POINTS HIGHER THAN STUDENTS WHO DID NOT COMPLETE WEEKLY LESSONS.



### District at a glance

- 1600+ Staff
- 16,000+ TK-12 Students
- 27 Total Schools
- 4 Middle Schools
- 16 Elementary Schools
  - 2 TK-8 Schools
- 93.8% Graduation Rate

### DreamBox implementation

Students across NVUSD used DreamBox Math in school during regular instruction, for homework practices, and in before and after school programs for additional intervention support.

### Mission

To transform lives by instilling and inspiring lifelong learning in every student.



**“Through the pandemic and beyond, DreamBox has proven essential to address unfinished learning and close math opportunity gaps. Students receive the individualized learning they need, while teachers can monitor their usage, standard mastery, and assign work based on progress. This highly personalized learning, when implemented as designed, has ultimately led to marked student improvement on STAR Math.”**

—Sarah Knox, Director of Prevention & Intervention  
Napa Valley Unified School District, CA

### Background

Napa Valley USD piloted DreamBox Math in 2019, but when the pandemic forced schools to transition to a remote learning model, district leaders realized just how critical the solution would be to support distance learning for K-8 students. NVUSD decided to adopt the solution for all K-8 students for three years. The district believed that this would give educators and students ample time to integrate the solution and allow district leaders to analyze efficacy data and measure success.

As an organization committed to ongoing data review and continuous improvement, NVUSD partnered with the DreamBox Learning research team in 2022 to explore the impact of DreamBox Math. By analyzing 2021-2022 program usage compared with fall 2021 STAR Math beginning-of-year achievement results and spring 2022 end-of-year STAR Math achievement results, the teams believed they could determine if DreamBox Math produced the desired outcomes for student learning. Researchers asked the following questions:

- ✓ Does using DreamBox Math increase students' standardized test achievement?
- ✓ Do students from all grades and achievement levels experience a positive impact?
- ✓ Do students who are English language learners (ELL) experience a positive impact?
- ✓ Do students who qualify for Free or Reduced Lunch (FRL) experience a positive impact?

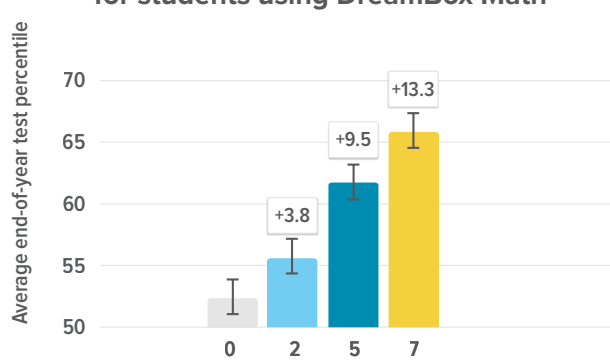
## Students who used DreamBox Math for 5+ lessons per week showed more growth than students who did not use the program.



### DreamBox Math students demonstrated significantly higher achievement scores on end-of-year assessments

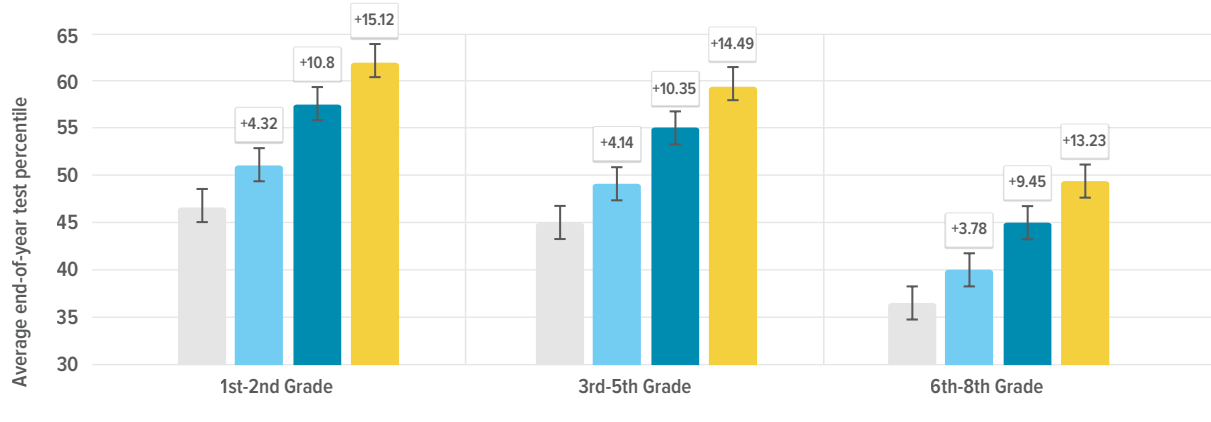
When completing the recommended 5 lessons per week (approximately one hour), students scored **9.5 percentile points higher** on the year-end STAR assessment than students who did not complete any DreamBox Math lessons.

Average end-of-year performance for students using DreamBox Math



### DreamBox Math was effective for students in all grades.

Average end-of-year test increase for students across all grades using DreamBox Math

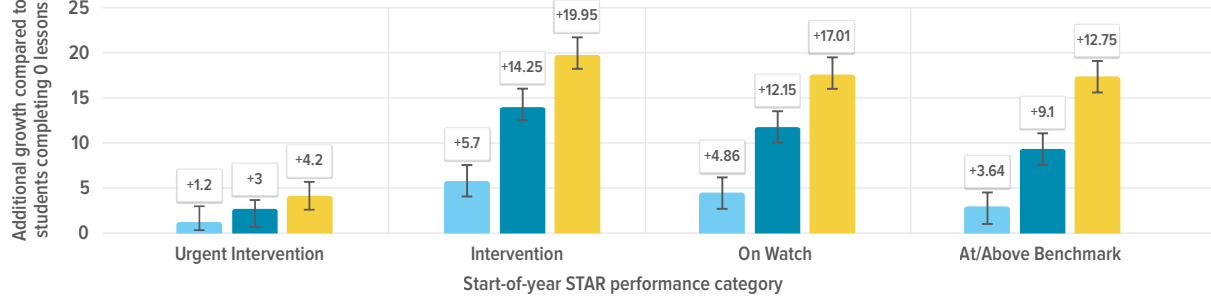


Regardless of grade level, students achieved more when completing five or more DreamBox lessons per week.

### Students who completed weekly recommended DreamBox Math lessons achieved more, regardless of their achievement level.



Average STAR percentile increase for students using DreamBox Math (by starting performance category)

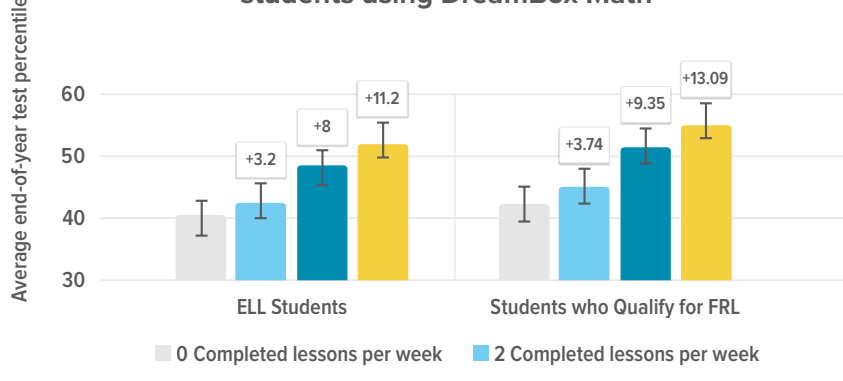


Regardless of students' start level, they demonstrated growth when completing five or more DreamBox Math lessons per week. All growth scores represent comparisons against students playing 0 completed lessons per week (e.g., the gray bars in the previous figures).

### Students achieved more when completing five or more DreamBox lessons per week, regardless of whether they were ELLs or eligible for FRL.



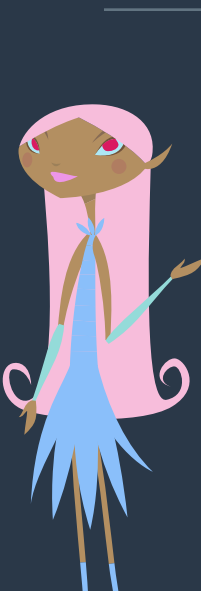
Percentile increase for underrepresented students using DreamBox Math



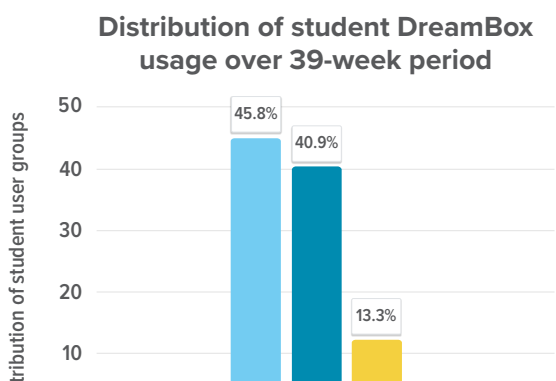
### How DreamBox Math Supports ELL Students

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. With the virtual manipulatives within the platform, DreamBox Math enables students to use their bilingualism as an effective way to process.

The [National Education Association](#) estimates by 2025, 1 out of 4 students in classrooms across the United States will be an English language learner. Results showed that DreamBox Math had a positive impact for English language learners (over 27% of students within the dataset). ELL students who completed 5 DreamBox Math lessons per week scored eight percentile points higher than ELL students who did not use the program.



Distribution of student DreamBox usage over 39-week period



Students across Napa Valley Unified School District completed an average of 2.61 DreamBox Math lessons per week during the 2021-22 school year.

To achieve optimal results, students must engage with the program regularly and consistently. DreamBox recommends that students use the math program for five lessons each week (approximately one hour).

### Conclusion

This study provides new, confirmatory evidence of DreamBox's significant positive impact on elementary and middle school students' math achievement. The positive impact of playing five or more lessons per week is evident regardless of students' achievement, grade level, or demographic background.

As educators face choices about investing in digital tools for students with a wide range of learning needs and gaps in prior knowledge, it is noteworthy that using the DreamBox personalized learning platform for 30-60 minutes per week supported achievement for all students across a district's full range of achievement and grade levels.



### Study Design

#### NVUSD Sample data includes:

- 6,462 Students in grades 1-8
- 258 Classrooms
- 22 Schools

#### Sample data demographics

- 51.8% Male students
- 48.2% Female students
- 27% English language learners
- 56.3% Qualify for FRL
- 58.4% Hispanic students
- 8% Had individualized education plans (IEPs)

#### Study inclusion requirements

- Students in grades 1-8
- Students who completed the fall 2021 STAR math test and the spring 2022 STAR math test.

#### Methodology

- Statistical technique: Hierarchical linear modeling
- Statistical controls for the main analysis included:
  - ✓ Grade
  - ✓ Ethnicity
  - ✓ Gender
  - ✓ FRL status
  - ✓ ELL status
  - ✓ IEP status

- Students were nested within classrooms, and classrooms were nested within schools