



STEMscopes Case Study Brief

Findings from A Comparison of District Science Fifth Grade Passing Rates for STEMscopes and Non-STEMscopes Districts on the Texas State Assessment of Academic Readiness (STAAR™):

Sampling across 634 school districts from a large state, Rice University researchers discovered that school districts that had adopted STEMscopes as a supplementary science curriculum in the 2011–2012 academic year had higher overall fifth grade passing rates than school districts that had not adopted STEMscopes. Furthermore, the student subpopulations in the STEMscopes adoption districts (including students who qualify for free or reduced lunch, are part of a minority group, and have limited English proficiency) had significantly higher passing rates than comparable students in districts that had not adopted STEMscopes.

Findings from Evidence Supporting the Efficacy of the STEMscopes Science Curriculum: Two-Year Comparison of Science Scores in a Medium-Sized District:

Gathering data from 6,493 eighth grade students in a medium-sized suburban district, Rice University researchers investigated passing rates before and after STEMscopes implementation. Controlling for demographic differences, the team demonstrated that students were 1.5 times more likely to score “proficient” after STEMscopes was implemented in the district.

Findings from More STEMscopes, More Learning: Analysis of the Level of Usage of STEMscopes and Students’ Fifth Grade STAAR Scores and Examining Differences in Fifth and Eighth Grade STAAR Passing Rates for Districts that Were High Users of STEMscopes and Non-STEMscopes Districts:

In the first study, 34 large, urban elementary schools and 3,079 fifth grade students participated in a year-long study of level of use of STEMscopes and student results on standardized testing. Rice University researchers discovered that students performed significantly better on fifth grade STAAR when their teachers used STEMscopes more frequently. The second study involved 662 school districts where fifth and eighth grade STAAR passing rates in schools with a high usage of STEMscopes were compared to those with low usage rates. The results of the study indicated that high usage districts scored 5 percent higher for both fifth and eighth grade students compared to the low usage districts. The results also extended to economically disadvantaged students in high vs. low usage schools, who scored 5 percent higher in fifth grade and 8 percent higher in eighth grade.

Findings from 2012–2013 STEMscopes Impact Study:

Examining STAAR scores across 13,997 students, 334 teachers, and 102 elementary schools in a large, urban district, Rice University researchers found that STEMscopes classrooms produced fifth grade students with, on average, 100 points higher scale scores. Additionally, female students were 1.5 times more likely to pass the STAAR in STEMscopes classrooms, while students with limited English proficiency were 3.3 times more likely to score “advanced” on the same assessment. The same study found that classrooms that used STEMscopes Intervention and Acceleration resources in addition to the 5E steps had an average student science score 935 points higher than those that did not use these two differentiation steps.

Findings from Eighth Grade Students “Climb Higher” than Students Not Using STEMscopes by Significantly Outscoring Them on the State of Texas Assessment of Academic Readiness:

Conducted during the 2013–2014 academic year across 1,140 school districts, this study found that districts using STEMscopes achieved STAAR passing rates 3 points higher and advanced rates 2 points higher than districts that did not. Data on economically disadvantaged students showed even more pronounced results for STEMscopes-using districts, with STAAR passing rates four points higher than districts that did not use STEMscopes.

Findings from 2014-2015 STEMscopes Early Explorer Implementation Study across a Large, Public School District PreK Program:

Using Early Explorer, teachers reported spending an average of 36 minutes per day on STEM instruction, compared to the national average of 1-3 minutes spent on math and science in preschool classrooms. Integration of STEM instruction increased over time as teachers became more comfortable with the curriculum components and including them in their daily schedule. The Ramp Up and Round Up activities were the first to be implemented, followed by Wrap Up and Keep it Up. In addition to these components, teachers reported regularly using the non-fiction and fiction big books as well as the vocabulary cards during literacy activities.

Findings from Comparing 5th Grade STAAR™ Passing Rates for STEMscopes and Non-STEMscopes Districts with 361,095 Students:

When comparing 5th grade Science STAAR passing rates, districts that used STEMscopes had significantly higher percentage passing rates (3.2% higher) versus districts that did not use STEMscopes—these districts used either their own district-created curricula or another publisher’s curriculum. This difference was also especially pronounced with economically disadvantaged students who benefited from passing rates of 2.6% higher versus their peers using programs other than STEMscopes. In the 311 districts that use STEMscopes for more than 50% of their 5th grade population, these results demonstrate that an additional 7,470 students overall and 4,730 students who are economically disadvantaged passed the 5th grade STAAR exam because they were in STEMscopes districts.