VITAL SIGNS

TEXAS

Business leaders in Texas cannot find the science, technology, engineering and mathematics (STEM) talent they need to stay competitive. Students' lagging performance in K-12 is a critical reason why. The good news is that the nation's most effective STEM education programs can help turn the tide.

Texas students have made real progress in math since, 2003, though they have given up some of those gains over the past five years. Texas students spend more time than their peers in other states on elementary science, and they participate in more hands-on learning. Yet not all students have access and support to learn challenging content and prepare for success in college and careers. Boosting the knowledge of middle school science and math teachers should be a top state priority.

TEXAS NEEDS MORE STEM TALENT

STEM fields are growing in Texas

Between 2017 and 2027:

STEM jobs will grow **20%**

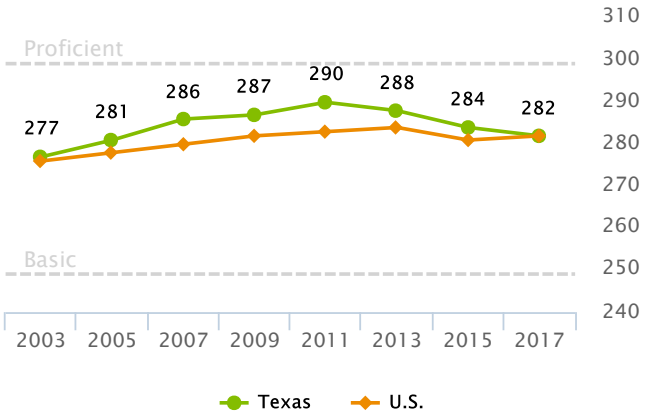
Non-STEM jobs will grow **15%**

THE TEXAS STEM SKILLS SHORTAGE STARTS EARLY

The state has made progress in math

In eighth grade, however, progress has faltered since 2011.

Trends in 8th grade math scores, 2003-2017

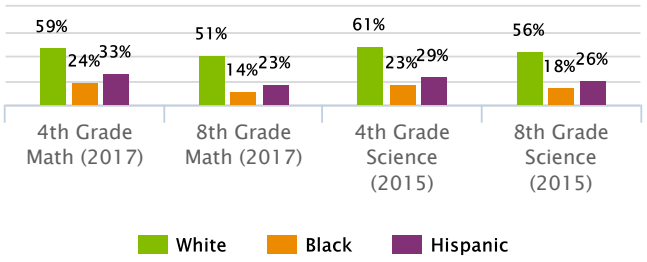


SOURCE: U.S. Department of Education, 2003–2017

Students of color lag farthest behind

Closing achievement gaps must remain a priority.

Percentage of Texas students at or above proficient, by race/ethnicity



SOURCE: U.S. Department of Education, 2015–2017

*Data not available or reporting requirements not met.

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For the complete state report, methodology, and sources, see vitalsigns.ecs.org (vitalsigns.ecs.org)

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The state must plug the gaps in the STEM pipeline

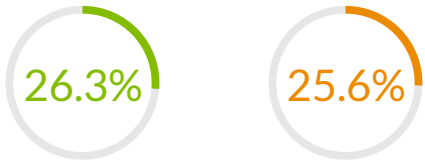
The Texas STEM pipeline loses young people at every level of the education system. While Texas high school students graduate at higher rates than their peers in other states, low graduation rates from two- and four-year colleges narrow the pipeline of students who can gain advanced STEM skills. Of those who do graduate, few get post-secondary degrees in STEM.

What percentage of high school students graduate? (2014-2015)

Of high school graduates who enter a 4-year degree program, what percentage graduate? (2012-2013)

Of high school graduates who enter a 2-year associate's degrees program, what percentage graduate? (2012-2013)

What percentage of certificates and degrees is in STEM fields? (2014-2015)



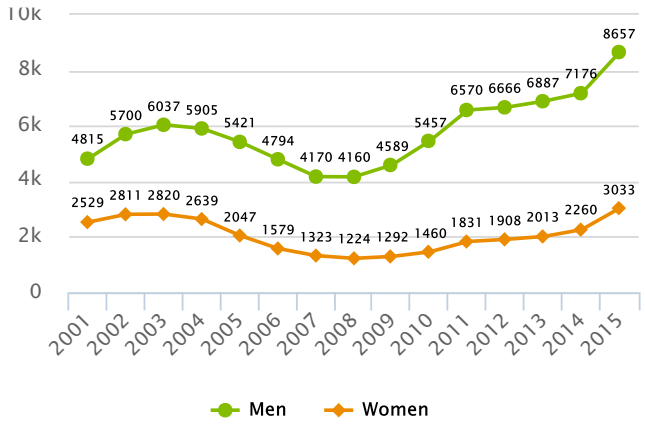
TAP TEXAS'S FEMALE AND MINORITY TALENT

Together, females and minorities make up more than half of Texas's population, yet they are much less likely to earn STEM degrees or become STEM professionals. Closing these gaps can pay big dividends in the state.

Women have lost ground in computing

The available talent in computer science would rise dramatically if the state simply closed the gender gap in these subjects.

Number of computing degrees/certificates in Texas

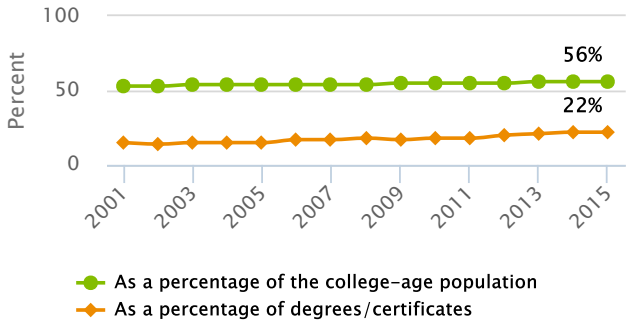


SOURCE: U.S. Department of Education, 2001–2015

People of color are gaining little ground in engineering

It is critical to prepare and inspire many more students of color to pursue STEM subjects such as computer science and engineering.

Underrepresented minorities in Texas earning engineering degrees/certificates



SOURCE: U.S. Department of Education, 2001–2015

*Data not available or reporting requirements not met.

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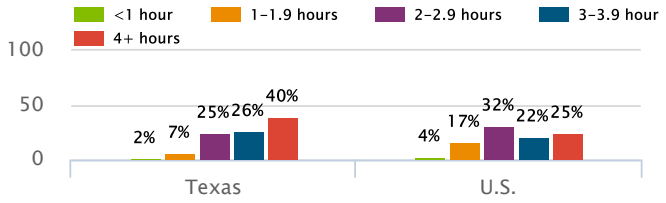
GIVE TEXAS STUDENTS ACCESS TO BETTER STEM LEARNING OPPORTUNITIES

Lack of access to such opportunities severely limits young people's college and career prospects.

The state should continue making time for elementary science

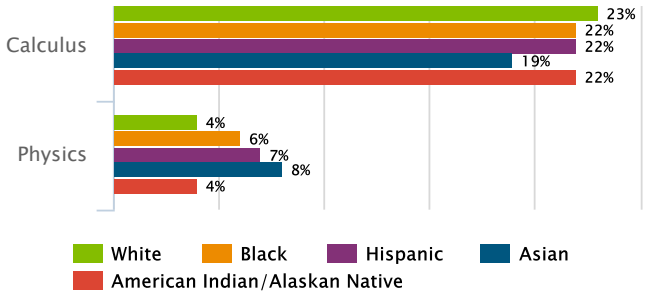
Hours per week spent on science, grades 1-4, 2015



The state should improve access to advanced courses

Many students lack access to such courses.

Students in Texas high schools that do not offer challenging math and science courses, 2013/14



Success in Advanced Placement courses can put more students on a path to STEM careers.

Of the high school graduating class of 2015 in Texas:

	Took AP Math Exam	Scored 3+ on AP Math Exam
All Students	13%	6%
White	15%	9%
Black	7%	2%
Hispanic	9%	3%
Asian	42%	30%
American Indian/Alaskan Native	12%	6%

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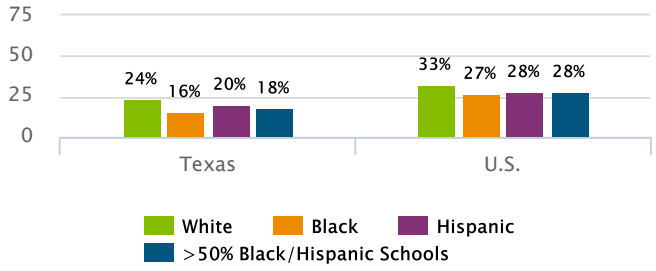
DEVELOP AND RETAIN TALENTED STEM TEACHERS IN TEXAS

Research shows that teachers' content knowledge and teaching experience can affect student performance

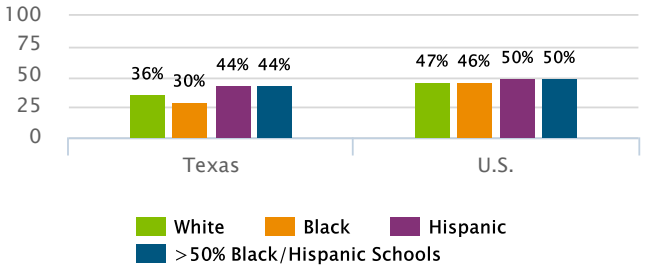
Boost teachers' content knowledge

Eighth-graders whose math teachers have an undergraduate major in math, 2017



SOURCE: U.S. Department of Education 2017

Eighth-graders whose science teachers have an undergraduate major in science, 2015

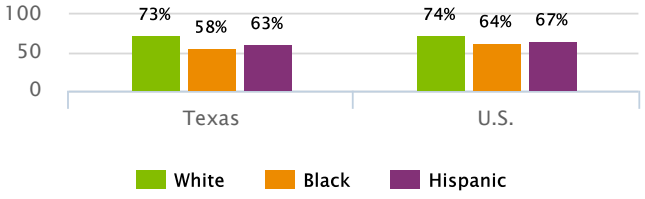


SOURCE: U.S. Department of Education 2015

Retain excellent teachers

Minority students are most likely to have inexperienced teachers

Eighth-graders whose math teachers have 6+ years of experience teaching their subject



SOURCE: U.S. Department of Education 2017

*Data not available or reporting requirements not met.

TEXAS

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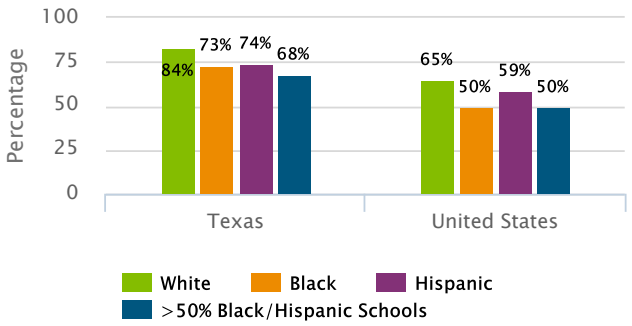
GIVE TEXAS SCHOOLS AND TEACHERS THE RESOURCES THEY NEED

Teachers in Texas need better resources, facilities and teaching materials to succeed.

Too many teachers lack the tools of their trade

Eighth-graders whose science teachers say they have all or most of the resources they need, 2015

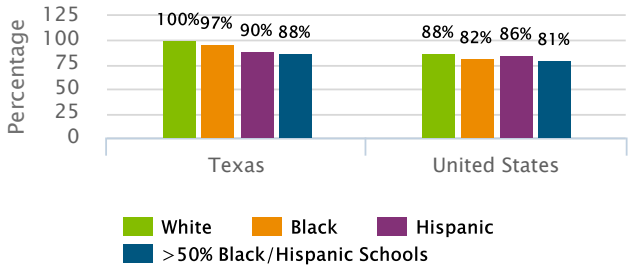


SOURCE: U.S. Department of Education, 2015

*Data not available or reporting requirements not met.

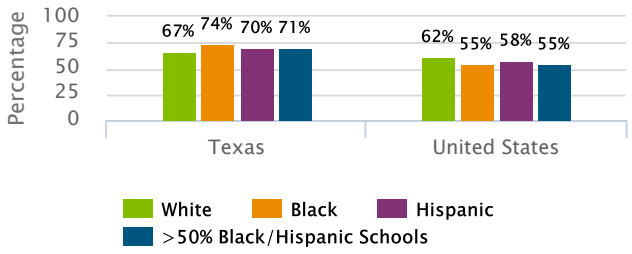
The state should improve access to science resources

Eighth-graders whose schools have science labs, 2015



SOURCE: U.S. Department of Education, 2015

Eighth-graders whose schools report that supplies or materials for science labs are available "to a large extent," 2015



SOURCE: U.S. Department of Education, 2015

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