VITAL SIGNS

ALABAMA

Business leaders in Alabama 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.

Alabama students have already made real progress in math over the past decade. Yet not enough have the chance to learn rich and challenging content to prepare them for college and careers. The state's eighth graders are also much less likely than their peers in other states to engage in hands-on science investigations, and most don't have teachers with an undergraduate major in math.

ALABAMA NEEDS MORE STEM TALENT

STEM fields are growing in Alabama

Between 2017 and 2027:

STEM jobs will grow

9%

Non-STEM jobs will grow

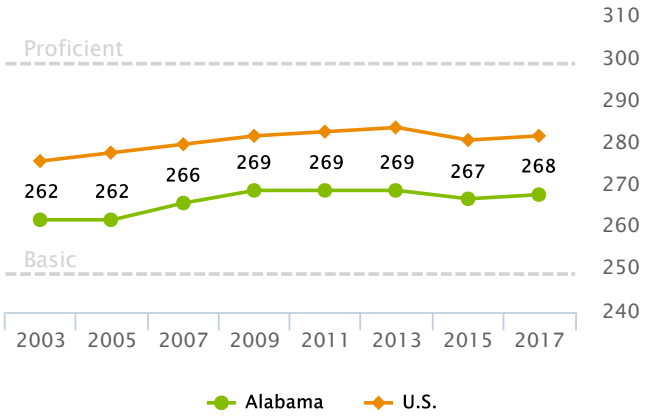
5%

THE ALABAMA STEM SKILLS SHORTAGE STARTS EARLY

Progress in math has faltered

After years of progress in math, Alabama students have stalled.

Trends in 8th grade math scores, 2003-2017

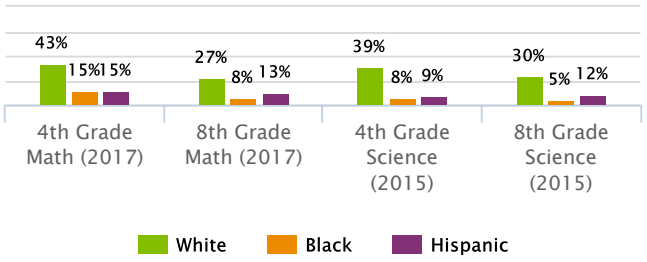


SOURCE: U.S. Department of Education, 2003–2017

Students of color lag farthest behind

Closing achievement gaps must remain a priority.

Percentage of Alabama 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)

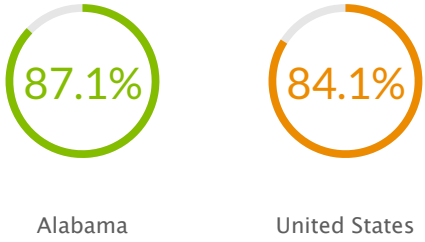
ALABAMA

VITAL SIGNS

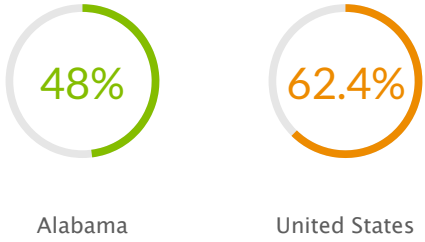
The state must plug the gaps in the STEM pipeline

The Alabama STEM pipeline loses young people at almost every level of the education system. Low graduation rates from college narrow the pipeline of students who can gain advanced STEM skills. Fortunately, students who do graduate are more likely than students nationwide to get a post-secondary degree in STEM.

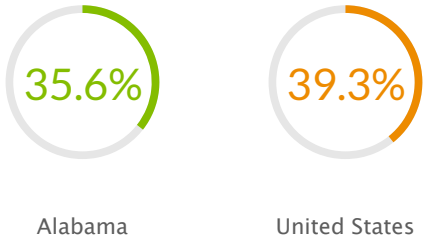
What percentage of high school students graduate? (2014-2015)



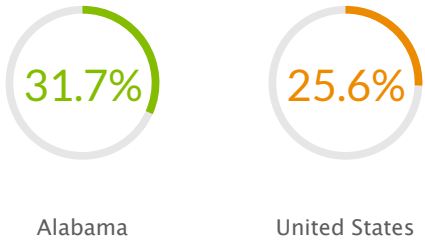
Of high school graduates who enter a 4-year degree program, what percentage graduate? (2012-2013)



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)



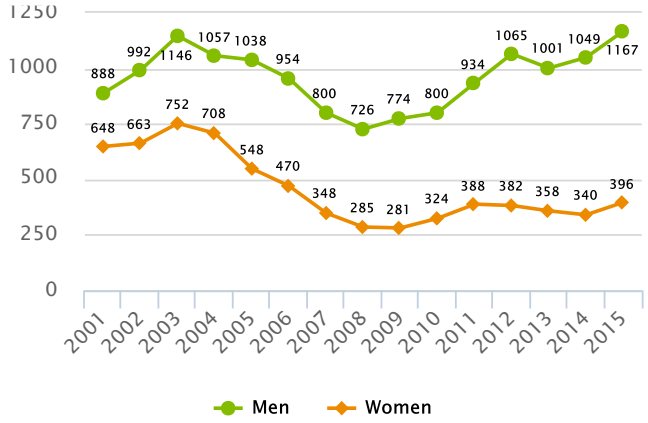
TAP ALABAMA'S FEMALE AND MINORITY TALENT

Together, females and minorities make up more than half of Alabama'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 Alabama

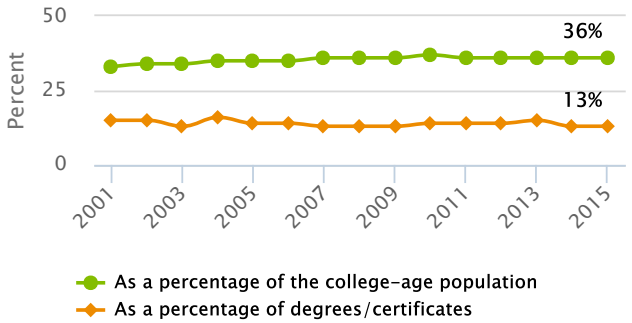


SOURCE: U.S. Department of Education, 2001–2015

People of color are not gaining ground in engineering degrees

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 Alabama earning engineering degrees/certificates



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

*Data not available or reporting requirements not met.

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ALABAMA

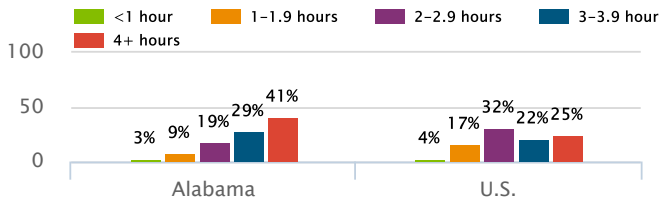
VITAL SIGNS

GIVE ALABAMA 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 make more time for elementary science

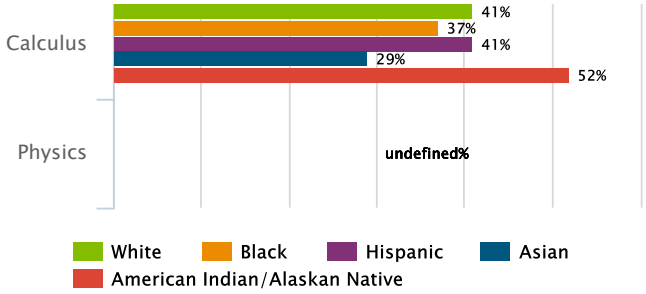
Hours per week spent on science, grades 1-4, 2015



The state should improve access to advanced courses

Many students lack access to such courses.

Students in Alabama 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 Alabama:

	Took AP Math Exam	Scored 3+ on AP Math Exam
All Students	11%	4%
White	13%	5%
Black	7%	1%
Hispanic	11%	4%
Asian	43%	27%
American Indian/Alaskan Native	11%	2%

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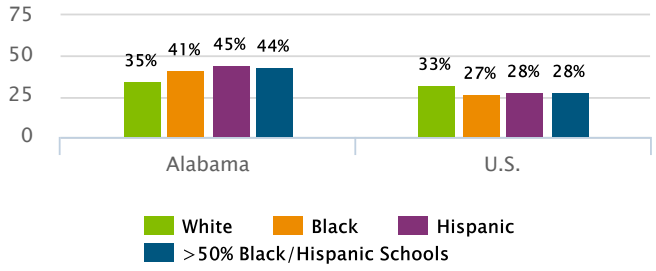
DEVELOP AND RETAIN TALENTED STEM TEACHERS IN ALABAMA

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

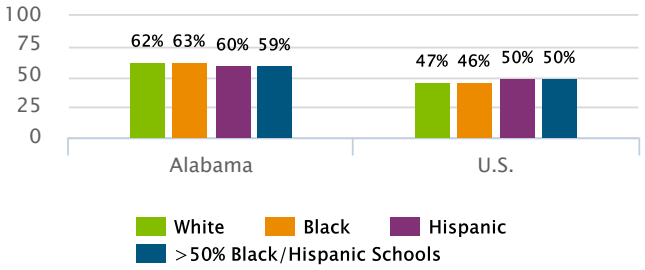
Boost teachers' content knowledge

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

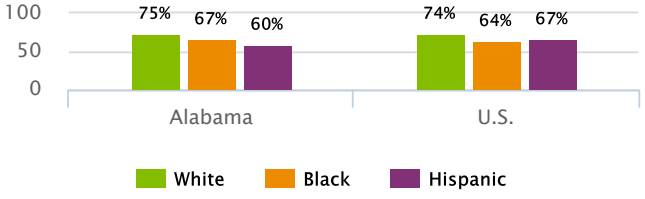


SOURCE: U.S. Department of Education 2015

Retain excellent teachers

Research shows that new teachers are less effective than teachers with three to five years of experience.

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.

ALABAMA

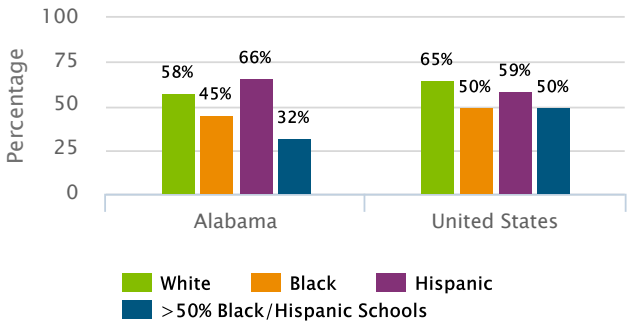
VITAL SIGNS

GIVE ALABAMA SCHOOLS AND TEACHERS THE RESOURCES THEY NEED

Teachers in Alabama 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

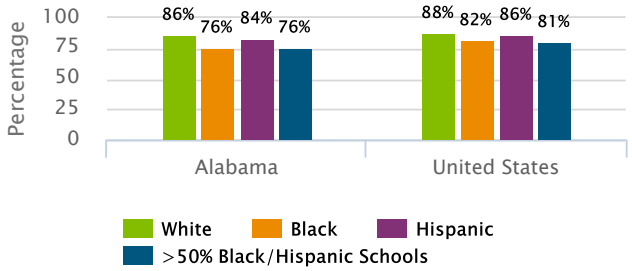


SOURCE: U.S. Department of Education, 2015

*Data not available or reporting requirements not met.

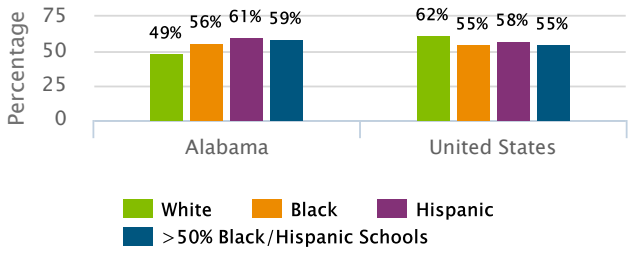
The state should improve access to science supplies

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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