

VITAL SIGNS

ARKANSAS

Business leaders in Arkansas 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.

Students in Arkansas have made real progress in math over the past decade. Yet not enough students, least of all minorities, are getting exposed to challenging content to prepare them for college and careers. The stakes in the state are very high. While the number of college degrees and certificates in the state rose almost dramatically in the last decade, it actually fell in STEM, particularly among women.

ARKANSAS NEEDS MORE STEM TALENT

STEM fields are growing in Arkansas

Between 2017 and 2027:

STEM jobs will grow

Non-STEM jobs will grow

11%

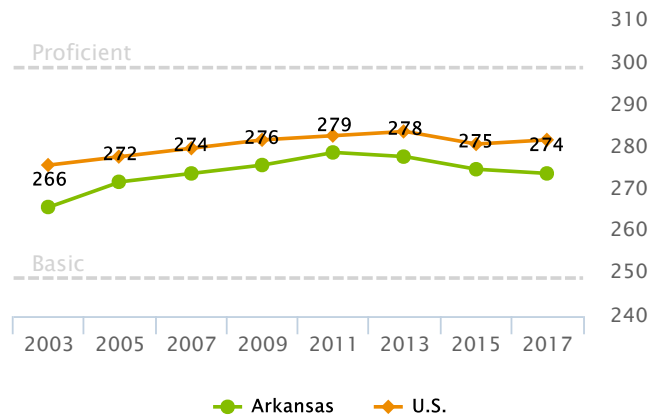
7%

THE ARKANSAS STEM SKILLS SHORTAGE STARTS EARLY

Progress in math has faltered

After years of progress in eighth-grade math, Arkansas students lost ground.

Trends in 8th grade math scores, 2003-2017

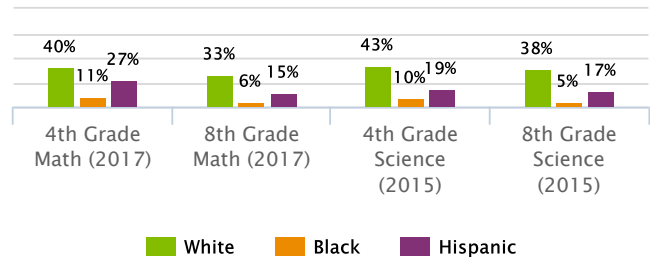


SOURCE: U.S. Department of Education, 2003-2017

Students of color lag farthest behind

Closing achievement gaps must remain a priority.

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



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

*Data not available or reporting requirements not met.

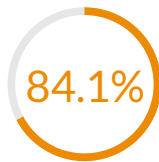
The state must plug the gaps in the STEM pipeline

The Arkansas 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. Of those students who do graduate, few get a post-secondary degree in STEM.

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



Arkansas

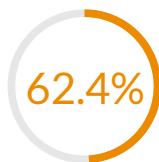


United States

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



Arkansas

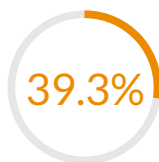


United States

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



Arkansas

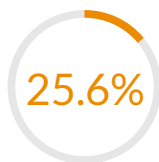


United States

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



Arkansas



United States

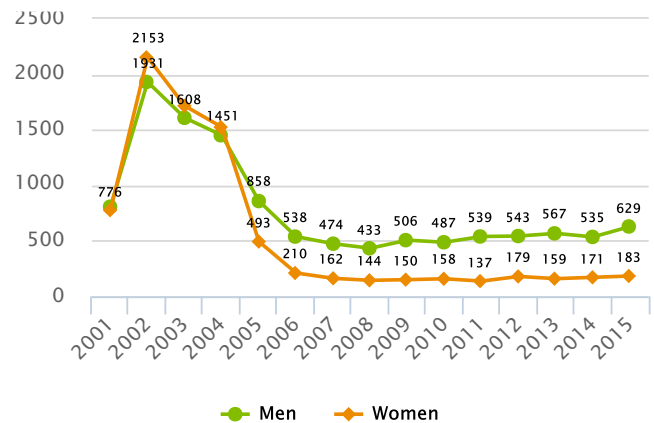
TAP ARKANSAS'S FEMALE AND MINORITY TALENT

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

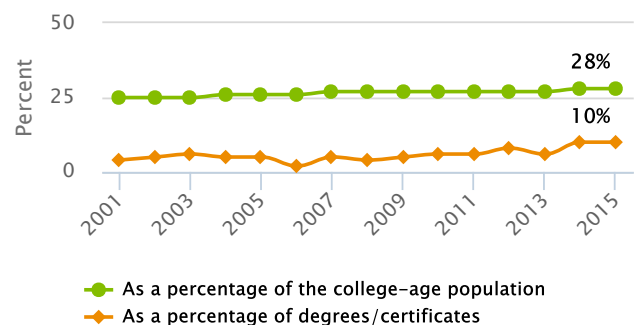


SOURCE: U.S. Department of Education, 2001-2015

People of color have gained some 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 Arkansas earning engineering degrees/certificates



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

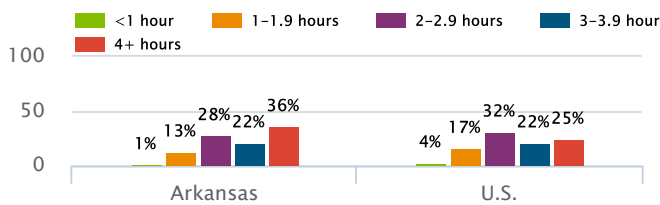
*Data not available or reporting requirements not met.

GIVE STATE 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

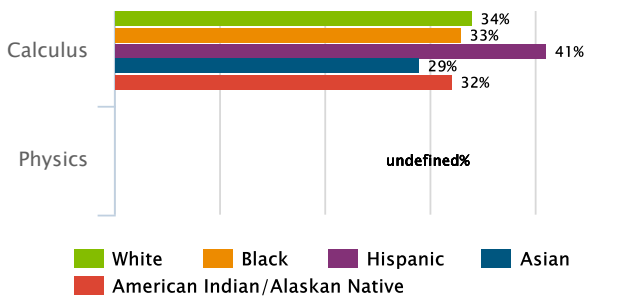
Hours per week spent on science, grades 1-4, 2015



The state should improve access to advanced courses

Many students lack access to such courses.

Students in Arkansas 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 Arkansas:

	Took AP Math Exam	Scored 3+ on AP Math Exam
All Students	14%	5%
White	15%	5%
Black	8%	1%
Hispanic	14%	3%
Asian	41%	24%
American Indian/Alaskan Native	13%	4%

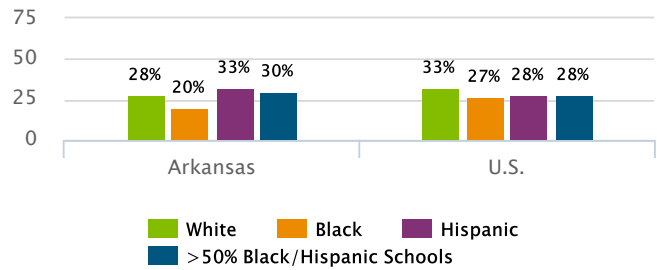


DEVELOP AND RETAIN TALENTED STEM TEACHERS IN ARKASAS

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

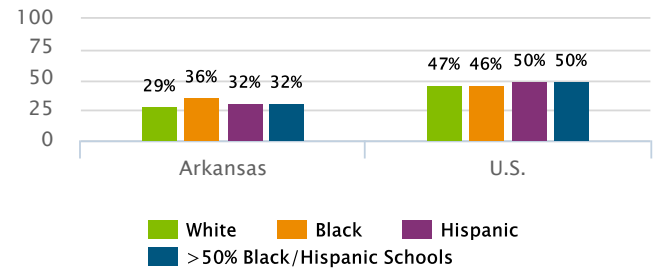
Boost teachers' content knowledge

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

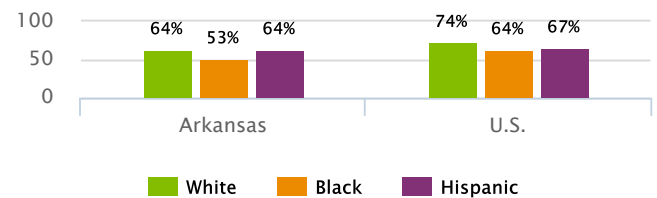


SOURCE: U.S. Department of Education 2015

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

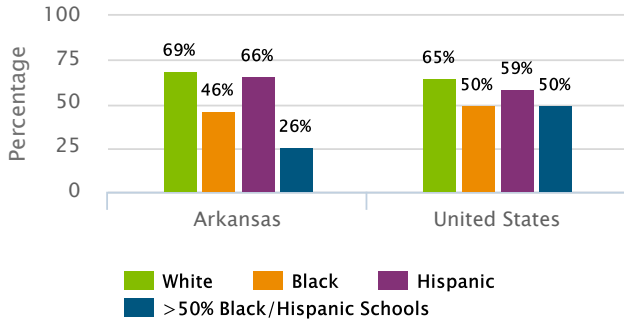
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GIVE ARKANSAS SCHOOLS AND TEACHERS THE RESOURCES THEY NEED

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

Too many teachers lack the tools of their trade

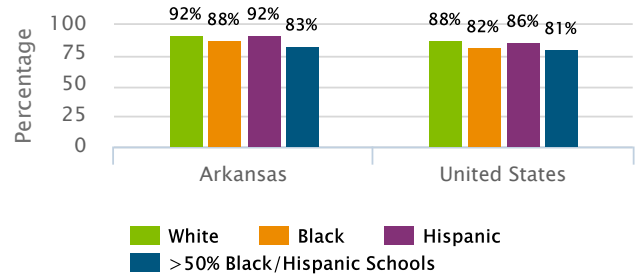
Eighth-graders whose science teachers say they have all or most of the resources they need, 2015



SOURCE: U.S. Department of Education, 2015

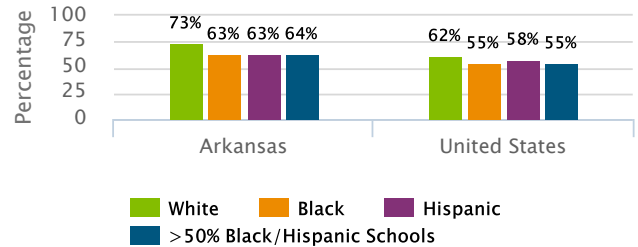
The state should improve access to science facilities and supplies

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

*Data not available or reporting requirements not met.

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

Education Commission of the States serves as a partner to state policymakers by providing personalized support and helping education leaders come together and learn from one another. Through our programs and services, policymakers gain the insight and experience needed to create effective education policy.



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