STEM ecosystems

Why STEM, Why Now

Why It Matters

A Transforming Economy

All careers now require candidates to possess collaborative, critical thinking and problem-solving skills, the kinds of competencies that the STEM disciplines are especially good at teaching. The job market is changing—and our education system must do a better job of keeping pace.

- Almost all of the 30 fastest-growing occupations in the next decade will require some background in STEM.
- Between 2014 and 2024, growth in computing, advanced manufacturing, and engineering will meet or greatly exceed growth in non-STEM jobs.
- In the next decade, there will be about 1 million more US jobs in the tech sector than computer science graduates to fill them—and just 25% of our nation's high schools offer computer science classes.

Businesses rely on today's youth to become the skilled industry leaders of the future. That can only happen by ensuring all students has access to a high-quality education, particularly in math and science.

The Importance of STEM

A strong STEM education can help students become resilient critical thinkers and thrive in a technologically driven world. Stakeholders across sectors must work cohesively at a new, deeper level to provide more students with quality learning—to allow them to apply concepts from the classroom to hands-on, real-world opportunities after school. As a result, all students can develop the knowledge and skills they need to succeed.

Why It Matters Now

Diminishing Interest in STEM Over Time

As students progress from elementary school to college and career, their interest and potential in STEM tends not to last. Studies show that nearly 1/3 of students engaged in STEM lose that interest by fourth grades—and that jumps to 50% by the time they reach middle school. And, by 12th grade, only 17 percent of students are both proficient in math and interested in majoring in a STEM field in college.

A Gender and Racial Divide

Right now, African American, Latino and female students remain dramatically underrepresented in STEM careers. Wide gaps persist in these students' access to high-quality math and science learning. Consider: 56% of white students are proficient versus 18 and 28% of their African-American and Latino peers. Women make up half of the workforce but just 29% of the science and engineering workforce.

The Chance for a Collective Solution

The STEM Ecosystems Initiative presents a promising solution to a lack of coordination within the field, an obstacle to widespread STEM access and literacy. Since 2015, nearly 40 STEM learning ecosystems across the country have convened teachers, principals, parents, and informal programs to increase opportunities for high-quality STEM learning for all students, no matter their zip code. They harness the unique contributions of schools, afterschool programs, science centers, and museums to deliver a rich array of learning opportunities. Therefore, communities relying on cross-sector collaboration can ensure all students develop the knowledge and skills they need to succeed in today's world.