


A summary of
***Charting a Course for STEM Success:
America's Strategy for STEM Education***





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The preservation of our nation’s innovation edge and the success of our citizenry depend on STEM education. As a nation, we must continue to develop an effective and inclusive STEM ecosystem that imparts STEM literacy to all.

The Committee on STEM Education, part of the Executive Branch’s National Science and Technology Council, has developed a five-year strategic plan for STEM education. Put forth in December 2018, the plan is based on a vision for a future where all Americans will have lifelong access to high-quality STEM education and the United States will be the global leader in STEM literacy, innovation, and employment.

Goals for American STEM Education

The plan does not set policy. It does, however, outline three overarching goals and pathways for achieving them.

1. Build strong foundations for STEM literacy

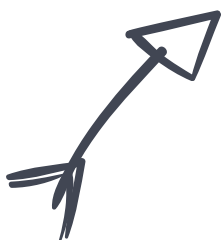
STEM literacy is for all Americans, not just those who will pursue STEM-related jobs. STEM education teaches skills that affect problem-solving and will not only benefit STEM industries but all areas of personal and civic life.

2. Increase diversity, equity, and inclusion in STEM

Research shows that women and minorities are underserved and underexposed to STEM education. Improved access to STEM education will benefit our workplaces, our communities, and our nation’s innovation outlook.

3. Prepare the STEM workforce for the future

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Four pathways to success

These three goals will be realized through four pathways, each supported by a set of priority objectives.

1. Develop and enrich strategic partnerships

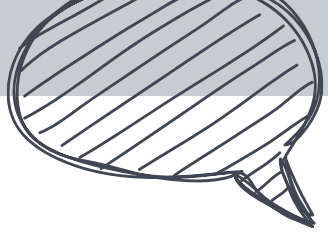
Connections among educational, commercial, and community institutions are essential to providing full, high-quality educational access to all learners. STEM ecosystems might comprise a diverse array of organizations and groups, and the Internet allows them to transcend geographic boundaries. The federal government seeks to establish additional connections to, and funding opportunities for, local and regional STEM ecosystems.

- Foster STEM ecosystems that unite communities.
- Increase work-based learning and training through educator-employer partnerships.
- Blend successful practices from across the learning landscape.

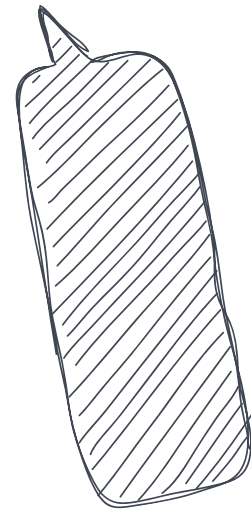
2. Engage students where disciplines converge

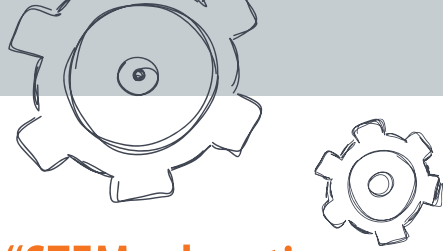
STEM education must embrace the complexity and interconnectedness of the modern world by integrating technical learning, the arts, and the humanities. Innovation occurs at the intersection of disciplinary boundaries, and, along with entrepreneurship, is essential to national security. In particular, mathematics and statistics have cross-disciplinary relevance. Real-world, experiential challenges and competitions are well-suited to promoting skills germane to this vision.

- Advance innovation and entrepreneurship education.
- Make mathematics a magnet.
- Encourage transdisciplinary learning.

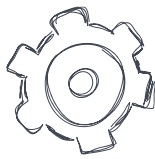


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3. Build computational literacy

Digital literacy and cyber safety are essential skills for navigating the new technological landscape in a secure, ethical manner. The federal government has identified a need to enhance our cybersecurity workforce. More broadly, we must adapt to the digital age by teaching our students the skill of computational thinking – the use of data to solve complex problems in all aspects of society. New anywhere, anytime platforms for digital learning are ideally suited for fostering these skills, and improved access to these tools should become a priority through a push for broadband Internet for all.

- Promote digital literacy and cyber safety.
- Make computational thinking an integral element of all education.
- Expand digital platforms for teaching and learning.

4. Operate with transparency and accountability

The federal government has a responsibility to the public to base its STEM decision-making on evidence. Tools must be developed to gather and analyze data for the federal government and all STEM stakeholders.

- Leverage and scale evidence-based practice across STEM communities.
- Report participation rates of underrepresented groups.
- Use common metrics to measure progress.
- Make program performance and outcomes publicly available.
- Develop a federal implementation plan and track progress.

Conclusion

STEM education is essential to the vitality and security of our nation. Cross-disciplinary understanding, computational thinking, and digital literacy are the skills of modern life. All stakeholders have an interest in ensuring that all of our young people have equitable access to high-quality, evidence-based education tools that foster these skills. STEM ecosystems, which need not be bound by region, are ideally suited to drive this vision.

(Find the full report at www.whitehouse.gov/wp-content/uploads/2018/12/STEM-Education-Strategic-Plan-2018.pdf)