This is Afterschool STEM

Sparking Interest in Future Careers

Jobs in the science, technology, engineering, and mathematics (STEM) fields power our economy and build shared prosperity among our society. Investing in afterschool and summer STEM learning programs will help students explore their interests, build skills, connect with mentors, and prepare for jobs in growing fields like health care, information technology, and cybersecurity.

Afterschool STEM offers unique and essential supports.

Extra exposure: Children spend less than 20% of their waking hours in school.[1] Afterschool STEM can almost double the amount of time some students have to question, tinker, learn, and explore STEM topics and careers.[2]

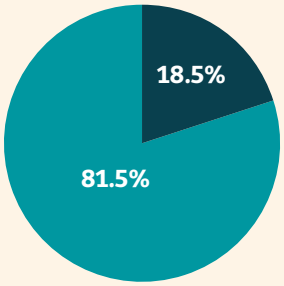
Engaging opportunities: Afterschool STEM engages students in hands-on, real-world projects that offer innovative ways to practice STEM skills in an informal space. This makes STEM more accessible, more interesting, and helps build fluency, much like immersing oneself in a new language.

Opportunities for all: The wealthiest 20% of families spend almost seven times more on enrichment activities outside school for their children than do the poorest 20%.[3] Afterschool STEM helps to close this gap by offering engaging learning programs to a diverse range of students.

A chance to follow their spark: High-quality afterschool STEM cultivates interest, builds real STEM skills, and helps students connect STEM to their lives and future careers.[4]

Learning doesn't just happen in school.

For students in elementary through high school, more than **80%** of their time is spent learning outside of school—at afterschool and summer programs, in libraries, museums, science centers, or at home or in the community. Just **20%** of their 16 waking hours are spent in school.



Source: The LIFE Center's Lifelong and Lifewide Diagram[1]

Afterschool Alliance June 2019

Afterschool STEM provides learning opportunities that help young people develop the skills they need to thrive in the workplace and in life.

America's Talent Shortage

Jobs requiring STEM skills are growing, but there aren't enough qualified candidates to fill them.

STEM jobs are expected to grow by 13% between 2017 and 2027, compared with 9% for other jobs.[5]

By 2025 more than 2 million STEM jobs will go unfilled due to a lack of skilled candidates.[6]

Women and minorities are underrepresented:

18% of bachelors degrees in engineering and computer science are earned by women.[7]

15% of the computing workforce and 12% of the engineering workforce are made up by African American and Latino workers.[8]

Afterschool Can Help Close the Gap

7 million students take part in afterschool STEM.[9] These programs:

- provide opportunities for career exploration and access to STEM role models, helping students understand what types of jobs are available and how they can work in these fields.[10]
- boost students' proficiency in math and science, increase their likelihood of graduation, and put them on the path to pursuing a career in the STEM fields.[11]
- encourage students to seek more opportunities to engage in STEM learning, sparking a life-long connection and curiosity in STEM fields.[12,13]

Sparking Interest, Inspiring Careers

A recent analysis of 160 afterschool STEM programs across 11 states found that among the nearly 1,600 participating students: [14]

80% made positive gains in science career knowledge

78% increased interest in STEM

73% increased in "science identity"—a personal belief that he/she can succeed at science

Program Spotlight: SHINE, Carbon County, PA

SHINE is a 21st Century Community Learning Center program that engages 4th and 5th graders in STEM learning based on in-demand careers in engineering, health sciences, and green energy. Students learn from teachers with technical expertise within state of the art laboratories at the Carbon Career & Technology Institute. They focus on topics ranging from solar cars and houses to hydroponics. In one project, students designed a life-sized derby car using Computer Aided Drafting (CAD) and then built it with precision machined parts. Among SHINE participants, 97% were excited about STEM activities, 89% said science and math would help them be more successful, 85% enjoyed using CAD, and 77% became familiar with careers that require engineering and electronics.[15]

Sources

1 http://life-slc.org/
2 http://static.lawrencehallofscience.org/rea/bayareastudy/pdf/final_to_print_research_brief.pdf
3 https://www.russellsage.org/publications/whither-opportunity
4 http://afterschoolalliance.org/examiningtheimpactofafterschoolSTEMprograms.pdf
5 http://vitalsigns.ecs.org/state/united-states/overview
6 http://www.themanufacturinginstitute.org/~/media/E323C4D8F75A470E8C96D7A07F0A14FB/DI_2018_Deloitte_MFI_skills_gap_FoW_study.pdf
7 https://www.nsf.gov/statistics/2018/nsb20181/assets/nsb20181.pdf
8 https://www.ecs.org/wp-content/uploads/2015-Solving-the-Diversity-Dilemma-FINAL-6.2015.pdf
9 http://www.afterschoolalliance.org/AA3PM/STEM.pdf
10 https://techbridgegirls.org/index.php?id=432.
11 http://afterschoolalliance.org/documents/AfterschoolSTEMImpacts2016.pdf
12 https://eric.ed.gov/?id=EJ1003837
13 https://www.tandfonline.com/doi/abs/10.1080/21548455.2015.1093670.
14 https://docs.wixstatic.com/ugd/e45463_e14ee6fac98d405e950c66fe28de9bf8.pdf
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