

Students learn more with afterschool STEM

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Helping kids learn science, technology, engineering, and math—the subjects collectively known as STEM—is key to building a prosperous economy for all of us.

Nationwide, states and schools are engaging diverse partners like afterschool and summer programs, libraries, museums, universities, and businesses to ensure that all students, no matter where they grow up, have access to high-quality STEM education. By fully utilizing the hours outside of school and taking an all-hands-on-deck approach to maximize collective impact, we can ensure that our kids are prepared to tackle the challenges of the future.

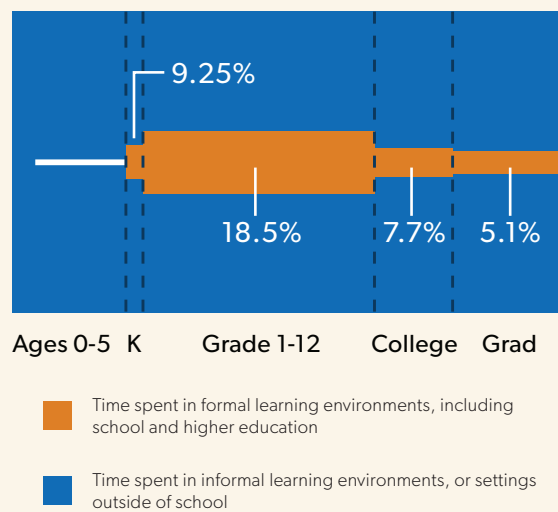


Afterschool STEM offers unique benefits

- **Extra exposure:** Children spend less than 20 percent 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.²
- **Change of scene:** Afterschool STEM engages students in hands-on, real-world projects. These programs offer innovative ways for students to practice STEM skills in an informal space. This makes STEM more accessible, more interesting, and helps to build fluency, much like immersing oneself in a new language.
- **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 communities.³
- **Opportunity for all:** The wealthiest 20 percent of families spend almost seven times more on enrichment activities outside school for their children than do the poorest 20 percent.⁴ Afterschool STEM helps to close this gap by offering engaging learning programs to a diverse range of students.

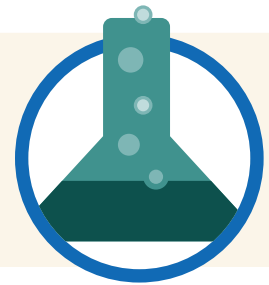
Learning doesn't just happen in school

For students in elementary through high school, **more than 80 percent** 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 percent** of their 16 waking hours are **spent in school**.



Source: The LIFE Center's Lifelong and Lifewide Diagram. Find it [here](#).

Research shows states, schools, students, and communities benefit from afterschool STEM.



Afterschool STEM sets kids up for success in college and career.

- Science Club Afterschool transformed student outcomes at a Chicago Boys & Girls Club through close relationships with mentors and a dynamic curriculum of real-world science and engineering topics. Before Science Club, just 1 out of 100 students entered a STEM track in college—today, 32 percent are enrolled in a STEM major.⁵
- Techbridge Girls provides extensive opportunities for career exploration for girls in grades 5 to 12. As a result, 9 out of 10 participants knew more about different kinds of jobs and 82 percent said that they are more interested in working in technology, science, or engineering because of the role models they were exposed to and the field trips they went on.⁶
- Among alumni of the Clubhouse Network, an afterschool program that provides technology learning at 51 sites across the U.S., 97 percent said that the Clubhouse was the most important source of support for setting high goals and expectations for themselves and 80 percent reported that the Clubhouse had been the most important source of support for pursuing a career.⁷

Students in afterschool STEM gain interest and stay engaged in STEM learning and careers.

- Among nearly 1,600 youth in 160 afterschool programs, across 11 states, more than 70% of students reported positive gains in their attitude towards STEM, their personal STEM identity, STEM career knowledge, and 21st century skills, including perseverance and critical thinking.⁸
- The more students participate in STEM learning opportunities after school, the more interested they become in STEM subjects and majors.⁹

A focus on quality matters.

- In the same multi-state study referenced above, the afterschool programs with the highest quality ratings demonstrated the most positive student outcomes. This relationship underscores the return on investment that comes from supporting capacity-building and quality improvement efforts.

Collaborations between afterschool STEM programs and school teachers build skills among both sets of educators.

- At the STEM Educators Academy in New York City, classroom teachers and afterschool educators engage in joint professional development at premiere science institutions to co-design and co-teach STEM. As a result, the quality of STEM activities increased and both sets of educators increased their confidence in teaching STEM.¹⁰

Additional research about the impact of afterschool STEM is available at impacts.afterschoolalliance.org

Sources

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- ⁴ Duncan, G. J. & Murnane, R. J. (2011). *Whither opportunity? rising inequality, schools, and children's life chances*. New York, NY: The Russell Sage Foundation.
- ⁵ Kennedy, M., Daugherty, R., Garibay, C., Sandford, C., Koerner, J., Lewin, J., & Braun, R. (2016). Science Club: Bridging in-school and out-of-school STEM learning through a collaborative, community-based after-school program. *Connected science learning*, 1(1). Find it [here](#).

⁶ Techbridge Girls. (n.d.). *Evaluation results: Celebrating our 15th year*. Find it [here](#).

⁷ Gallagher, L., Pinkerton, L., Dominguez, X., Michalchik, V., & Llorente, C. (2013). *Computer Clubhouse Network: Alumni survey report*. Menlo Park, CA: SRI International. Find it [here](#).

⁸ Allen, P., Noam, G., Little, T., Fukuda, T., Chang, R., Gorrall, B., ...Waggenspack, L. (2017). *Afterschool & STEM system-building evaluation 2016*. Boston, MA & Lubbock, TX: The PEAR Institute: Partnerships in Education and Resilience, Harvard Medical School and McLean Hospital & IMMAP: Institute for Measurement, Methodology, Analysis & Policy, Texas Tech University. Find it [here](#).

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¹⁰ Kanter, J. (2016). *STEM Educators Academy research brief*. New York, NY: ExpandedED Schools. Find it [here](#).