

STEM Out-of-School and Summer Programming Quality Standards

This list provides descriptions of evidence-based practices that lead to stronger, more impactful out-of-school STEM programs. While it features many broad categories, it is not meant to be a comprehensive list.

Alignment with/support of age-appropriate content standards in STEM: Out-of-school STEM programming is most impactful at addressing learning loss when it builds on concepts and materials covered in traditional classroom time. Alignment can be achieved through consultation with classroom teachers, review of district and state standards, and similar means.

Showcases/promotes integrated STEM learning and practice: STEM programming is most effective when it demonstrates how science, technology, engineering, and math are not separate subjects, but instead used in conjunction with each other to explore problems, build connections, and develop skills.

Incorporates/promotes mentorship and/or STEM role models: Exposure to practicing STEM professionals helps students make real-world connections to materials they are learning. Whether it is mentorship or coaching on an extended project, demonstrations of how STEM concepts are used in local jobs, or stories of innovators and tinkerers, “seeing it” helps students believe they can “be it.”

Incorporates/promotes experiential learning and/or family involvement: Meaningful experiences, especially when undergone with family, contextualize STEM concepts, leading to continued discussion and exploration outside of a program’s hours. Families learning together lays groundwork for independent study, reducing barriers to access and feeding a sense of STEM identity among student participants.

Incorporates/promotes real-world applications and experiences of STEM topics: STEM concepts are nearly universal in practice. Demonstrating what STEM methodologies and topics look like in a student’s community or area of interest strengthens interest and self-efficacy in STEM.

Staff have received or will receive professional development or other training related to materials used in this program: Investments in program providers’ fluency in STEM materials improves the efficacy and longevity of programming. Trainings may be formal professional development, webinar or similar offerings, job shadowing, certification or credentialing coursework, or other similar work related to specific programs or tools.

Partner organizations are involved in the design, conduct, promotion, or other elements of this program: A further step related to incorporating and promoting real-world STEM experiences is to seek out and integrate input and expertise from partner organizations early on. STEM professionals, local businesses, schools, and other organizations should be invited to guide the direction of out-of-school STEM programming to maximize impact, carry messaging and promotion, and connect programming with culturally-relevant and age-appropriate academic standards.

Leadership/administration of my organization is involved in or supporting this project in a meaningful way: Leadership buy-in for STEM programming is essential to boosting student impact. Leadership can serve as liaisons to other important partner organizations, coordinate training for staff, and otherwise support program providers.

Targeted strategies to improve outreach, access, and materials for communities farthest from inclusion in STEM: Many populations are underrepresented in STEM fields, and require intentional strategies for recruitment, retention, and engagement. These populations include rural, low-income, racial and ethnic minorities, females, etc. Strategies should address the specific needs of relevant communities, and may include bilingual materials, culturally-relevant program partners and materials, free or reduced-cost transportation, materials, and meals, mentors and professionals from the target community, etc.

Additional Resources from Our Partners

Idaho Building Blocks for Out-of-School Time Quality - <https://idahootofschool.org/buildingblocks/>

Cognia STEM Standards - <https://www.cognia.org/new-standards-for-2022/>

IDAHO STARS Steps to Quality - <https://idahostars.org/Child-Care-Providers/Steps-to-Quality>