

Promising Practices:

Guidelines for Engaging Girls in STEM through Out-of-School Time



Overview

The purpose of the guidelines is to offer promising practices for out-of-school time (OST) programs to recruit, engage and inspire more girls in STEM. The Guidelines are designed for leaders, practitioners, families, community partners, and volunteers working with girls in OST programs across New Mexico and nationally. Coming together to create a shared framework opens the doors for new ways to work together, develop training, and build new supports for the OST field to accelerate STEM change in our communities.

Guidelines

- 1 Celebrate Diversity
- 2 Create Safe Spaces and Sense of Belonging
- 3 Start Early and Keep it Going
- 4 Invite Girls to Change the World through STEM
- 5 Elevate the Voices of Girls
- 6 Create Opportunities for Mastery
- 7 Involve Families
- 8 Engage Female Role Models
- 9 Connect with Community Partners
- 10 Explore STEM Careers
- 11 Provide Training and Resources for Afterschool Staff
- 12 Assess Results and Measure Impact



afterschool **WORKS**
in New Mexico!

For the full Promising Practices Guidelines, go to nmmost.org/young-women-stem



1 Celebrate Diversity

Design programs to be girl-centric and culturally responsive. Incorporate girls' unique interests, identities, cultures, and abilities into the STEM learning experience. Ensure that all girls have the opportunity to participate, regardless of zip code, income, or background.

2 Create Safe Spaces and Sense of Belonging

Safe spaces for girls include physical safety as well as emotional and social safety. Design your program space with culturally diverse and girl-friendly images and materials that counter stereotypes of who does STEM.²¹ Give girls opportunities to share their opinions, collaborate on projects, and build trusting relationships.

3 Start Early and Keep it Going

Spark girls' interest in STEM early. Girls are born as young scientists with a natural curiosity about the world. Yet many girls start to lose confidence and interest in STEM as early as third grade. Continue to inspire and engage girls in STEM at all ages as they make decisions about who they are and whether they are good at and like STEM.

4 Invite Girls to Change the World through STEM

Design hands-on STEM learning that is relevant to girls' everyday culture and experiences. Empower girls to use STEM to solve real problems in their communities.

5 Elevate the Voices of Girls

Invite girls to design, plan and implement STEM education activities. Empower girls to share their opinions and make choices about their STEM learning. Provide opportunities for girls to step up as leaders and mentors. Create a learning environment where girls and boys are invited and encouraged equally to express their ideas. Equip girls with strategies to communicate effectively and confidently, especially in traditionally male-dominated educational and work environments.

6 Create Opportunities for Mastery

Encourage girls to get out of their comfort zone, try ideas, and explore how things work. Introduce girls to new tools, technology and ideas. Teach girls to embrace failure as a natural part of learning. Empower girls to master new skills, develop grit, and build confidence.

7 Involve Families

Create welcoming spaces for families to explore STEM with their daughters. Invite families to share their input in program design. Recognize the diverse perspectives of families in outreach and communication. Educate parents about STEM opportunities and career pathways that boost their daughters' talent and potential.

8 Engage Female Role Models and Mentors

Create opportunities for girls to interact with female STEM role models with whom they can identify. Ask role models to share personal stories and how their careers make the world a better place. Invite role models to help girls see beyond stereotypes, create a positive STEM identity, and imagine themselves as future scientists and experts in STEM careers.

9 Connect with Community Partners

Foster opportunities for girls to learn from community partners and to experience STEM in different settings. Bring together partners in education, business, cultural institutions, youth development, government and others to collaborate, coordinate, and grow STEM learning and career pathway options for girls.

10 Explore Career Pathways

Introduce girls to a wide variety of STEM career and education pathways. Open doors for girls to identify their interests and explore how they connect with STEM careers. Engage New Mexico STEM industry partners

11 Provide Training and Resources for Afterschool Professionals

Equip OST staff with training, curricula, and materials that boost their ability and confidence to inspire girls with STEM. Educate staff about the inquiry process and strategies for creating a learning culture that empowers both girls and boys. Encourage staff to use indoor and outdoor spaces creatively to foster girls' curiosity and exploration. Engage outside STEM experts as trainers for staff and to facilitate hands-on learning with girls.

12 Assess Results and Measure Impact

Ask questions and collect feedback from girls, families, staff, community partners and others. Measure changes in STEM skills, knowledge, and attitudes and among girls and families. Measure impact on staff development and community partnerships. Use results to inform program design and ongoing quality improvement. Share and publish results.

RESEARCH SOURCES AND COALITION ORGANIZATIONS

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5. Discovery Education: "5 Ways STEM Inspires Students to Change the World":
<https://blog.discoveryeducation.com/blog/2017/10/05/5-ways-stem-inspires-students-to-change-the-world/>
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<https://www.educationandcareernews.com/stem-education/engaging-girls-in-stem-starts-in-kindergarten/>
7. Edutopia: "Making STEM Accessible to All": <https://www.edutopia.org/article/making-stem-accessible-all>
8. Expanding STEM Learning: STEM in Afterschool System-Building Tool Kit:
<http://expandingstemlearning.org/measure>
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13. Getting Smart: "Empowering Girls to Become Future STEM Stars": Interview with Blair Blackwell, Manager of Education and Corporate Programs at Chevron, and Nikole Collins-Puri, CEO of Techbridge Girls: <https://www.gettingsmart.com/2016/12/empowering-girls-to-become-future-stemstars/>
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16. Informal Science: "Strengthening After-School STEM Staff Development": https://www.informalscience.org/sites/default/files/Strengthening_AfterSchool_STEM_Staff_Development.pdf
17. International Technology and Engineering Educators Association: "How to Recruit Women and Girls to the Science, Technology, Engineering, and Math (STEM) Classroom":
<https://www.iteea.org/File.aspx?id=137394&v=340d4cae>
18. National PTA: STEM Plus Families: STEM and Families: Increasing Students' Access to Opportunities in STEM by Effectively Engaging Families:
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19. National Science Foundation: "Babies are Born Scientists":
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20. National Science Foundation: "Belonging can help keep talented female students in STEM classes":
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<https://venturelab.org/engage-girls-in-stem-let-them-learn-from-failure/>
31. Marian Wright Edelman: activist and author

