



What Parents and Guardians Can Do to Encourage Girls in STEM

Start young.

- Be curious yourself. Explore and learn together.
- Encourage your daughter to be curious, to ask questions, and to explore.
- Ask your daughter lots of questions such as: What do you think? I wonder... What happens if...
- Provide ongoing opportunities to play and “tinker” with a variety of materials. Science, Technology, Engineering, and Math (STEM) are all about the process of discovery.
 - Hands-on play can and should happen at all ages.
 - Develop and encourage spatial/analytical skills. Create opportunities to build and experiment with a variety of materials: sand and water play, magnets, magnifying glasses, Legos and building blocks, helping in the kitchen with cooking, and so on.
 - Collect cardboard boxes, wood scraps, paper towel rolls, and simple machines such as bicycle gears to provide a rich scrap box for building and assembling.
 - Reward curiosity, creativity, design, and attempts and efforts as much as technical prowess and final products and achievements.
- Read books about animals, nature, and STEM with your daughter. For independent readers, help her choose books with strong female characters, and biographies about women, especially women in STEM fields.
- Attend local events that encourage interest in STEM. Invite your daughter and her friends to attend these events together. Many museums have discounts and free/low-cost days and events. Check with your local library for passes.
- Invite your girl to participate in extracurricular STEM clubs and events, including technology clubs that can be in person or virtual.
- Visit the “For Families” page of the GEMS website and view the resources to help parents and guardians support their daughter’s interest in STEM at <https://gems.education.purdue.edu/for-families/>

Engage in discussion about STEM issues at home.

- Assume your daughter is interested in STEM.
- Discuss what she is learning about STEM in school and at GEMS.
- Point out the relevance of STEM to everyday life.
- Talk about news stories that involve STEM, climate change issues, why the weather is the way it is, outer space discoveries, health issues, new technological inventions, and so on.
- Note how and when STEM is used to solve problems.
- Encourage conversations about math and science—talk about the scientific discovery process.
- Show your daughter examples of how STEM can be used to make a better world.
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Pay attention to what YOU do and say about math, science, and computers.

- Your attitudes teach more than your words.
- Dispel negative myths about STEM:
 - “Girls are not good at math and science.”
 - “Girls who are smart will not be popular.”
 - “Math is boring.”
 - “Science and math are only for brilliant, extraordinary students.”
 - “Only nerds (or whatever other term is in use) are into technology.”
- If science and math are not your strengths, you may be interested in building your own STEM content knowledge. Consider the possibility of taking a class or starting a study group to build up your confidence. Kids know when you aren’t comfortable with a subject. When girls see women shy away from STEM, they may read it as “STEM is something girls don’t learn well.”
- When you don’t know how something STEM-related works, take the time to look it up online and report back to your daughter—or even better, look up the information together.

Hold high expectations for girls in STEM subjects.

- Parents and teachers often underestimate girls’ STEM abilities. Not surprisingly, girls are harder on themselves when assessing their STEM abilities compared to boys with similar achievements, and this can lead to underperforming.
- Expect your girl to succeed.
- Push your daughter—challenge her to learn more. Let her know that hard work does pay off, and that every person can learn to do math and science. There is nothing magic about it, and there is no “math gene.”
- Insist that your girl take as much math and science as possible so that she will have many options open to her later in life.
- Work with your local guidance counselor and/or other parents to get a critical mass of girls enrolled in STEM classes, especially advanced classes.

- Let your girl make “big, interesting” mistakes.

Monitor computer use at home.

- Show girls how to enjoy technology, by exploring games, creating movies, or pursuing something else she is interested in together.
- Ask your daughter for help in using your computer or phone. Tap her expertise and encourage her to expand it.
- Ensure equal access to technology in the home for your girl.
- Monitor how computers are used and pay attention to what software/programs are being accessed.
- Encourage your girl to learn computer programming as well as use existing software.
- Challenge her to learn new technology.

Talk about careers all the time.

- Relate what your daughter is learning in school or to how it could be used later in life.
- Let her hear the words “engineer,” “scientist,” and “researcher” often.
- Recognize that your daughter can shoot for high-paying math, science, and technical careers.
- Encourage your daughter to think about her career interests early and to dream big.
- Use the Internet to explore career options, pathways, and requirements.
- Visit the “[For Families](#)” and “[For Members](#)” pages of the GEMS website and view with your daughter the resources designed to inspire and educate girls about STEM careers.

Look for female STEM role models and mentors.

- Point out relatives, friends, and community members who work in STEM fields or enjoy STEM hobbies.
- Invite your daughter to conversations with these people about what they do, how they trained, and what they like about STEM and their jobs. When possible, ask if she can visit their workplaces to see firsthand what they do.
- Use the [GEMS Parent Toolkit](#) section on role models and the Internet to find successful female STEM role models who can provide information about their career pathways and STEM passions.
- Join the [GEMS Facebook page](#).