

STEM Education



What is STEM education and why is it important for today's girls?

In the ever-changing world of technology, it is no surprise that a solid foundation in STEM education (Science, Technology, Engineering, and Mathematics) will provide today's students with an edge—and be more employable—in a wide range of exciting and lucrative careers that are in the process of being defined.

Why study STEM?

Studying technology and engineering beyond a student's typical science and math classes is extremely valuable. STEM education teaches problem solving, teamwork, critical thinking, and logic. These 21st century skills are transferable and applicable to any class in school and career path down the line.

Currently, STEM careers have the best entry-level salaries for college grads—estimated to be 30% more than the average. According to the National Association of Colleges & Employers 2014 Salary Survey, the top-paying majors include petroleum, computer, and chemical engineering. The average starting salary for new college graduates with careers in petroleum engineering is \$97,000.

Today's students can apply a STEM education in a wide range of companies and industries. From creative careers in video game design to working as a baseball statistician to designing robots, a career in STEM can be anything but monotonous. Many STEM-related professions have positive social effects on the community—such as recycling waste, curing diseases, and increasing the quality of life for the disabled.

Why is it important to inspire girls to study STEM?

In the United States, women hold less than 25% of STEM jobs. Each year the number of women studying and pursuing careers in technology goes down by 0.5%—by 2043, less than 1% of the global tech workforce will be female. Computer science has the lowest percentage of women. The demand for these degrees currently outstrips the supply of students. It is critical that more girls become engaged in these fields.

Regina Agyare, who co-founded *Tech Needs Girls*, outlined several reasons why the technology world needs more girls:

- **Improving technical innovation:** Currently we are missing out on valuable perspectives that 50% of the population can bring to designing the technology of the future.
- **Teaching girls leadership skills and critical thinking:** By learning to create technology, girls learn to speak up since they have to explain their work; they must stand tall in order to be taken seriously in male-dominated fields.

Google is committed to reversing the negative trends around women in Computer Science and recently conducted [a study on women in tech careers](#) released in May. The study identified *encouragement and exposure* as the leading factors that can influence a young woman's decision to pursue degrees in Computer Science. Anyone can help increase female participation in Computer Science, regardless of their technical abilities or background.

How parents can foster an interest in STEM?

1. **Make sure students take as many math/science classes as possible.** With a basic knowledge of STEM subjects, their potential for career growth is limitless even if he/she does not pursue a STEM career. Local community colleges often offer these courses in the evening, on weekends or in the summer. Students can also take free online courses via www.edX.org or www.coursera.org.
2. **Treat boys and girls as equals.** Eliminate the idea that certain careers are geared toward men rather than women. STEM opportunities are obtainable by anyone.
3. **Eliminate negative learning myths.** Use positive reinforcement. Replace statements like "I was never good in math, but I turned out okay" to "I believe in your abilities and am proud of your hard work in subjects so challenging."
4. **Instill a growth mindset vs. a fixed mindset.** Students with a fixed mindset believe their intelligence and talents are just traits. A growth mindset reminds students that their abilities can be developed through effort, good teaching, and persistence.
5. **Encourage STEM activities outside of the classroom.** Use TeenLife.com and other websites to look for STEM school year programs and internships in your area as well as science, technology, engineering or math summer programs on college campuses. Several exist uniquely for girls. Encourage Science and Math teachers in your school to research these programs and recommend which ones have the best content.

STEM Resources

PROGRAMS

- TeenLife.com lists hundreds of STEM summer programs and STEM colleges. Just search for science, technology, computer science, engineering, or math programs, anywhere or in a particular state, and see what types of opportunities come up.
- See Enrichment Programs in the Naviance Family Connection portal.

GUIDE

- The TeenLife **Guide to STEM Programs** highlights a number of STEM colleges and STEM summer programs, plus great content on the benefits of STEM education and lucrative STEM careers. <http://guides.teenlife.com/stem>

WEBSITES

- www.StemConnector.org is a one-stop information source for STEM education, resources, and careers. Check out the extensive STEM Directory for lots of ways to get students involved in STEM.
- You can find information on the government's STEM initiatives under the U.S. Department of Education www.ed.gov/stem.
- www.USInnovation.org, is a project of The Alliance for Science & Technology Research in America. USInnovation.org is a one-stop portal where visitors can keep up on the latest news and resources for everything relating to science and technology.
- Code.org is a non-profit dedicated to expanding participation in computer science by making it available in more schools, and increasing participation by women and students of color. Also see girlswhocode.com.
- Take online computer science courses via EdX.org or Stanford's Online High School or ask your school to teach a course with help from <https://codehs.com>.

FAIRS

- Attend the USA Science & Engineering Festival in Washington, DC in April 2016. www.usasciencefestival.org