



# Girls Inc. Guide The STEM Gap & Title IX

## What is the STEM gap?

“STEM” stands for **science, technology, engineering, and math**, and the term “STEM gap” refers to the underrepresentation of women in these fields.

## What is Title IX, and how does it relate to STEM fields?

Title IX of the Education Amendments of 1972 guarantees gender equity for boys and girls in every education program that receives federal funding. **In addition to athletics, Title IX addresses female involvement in STEM fields.** Title IX cannot be used to force women to study disciplines in which they are not interested but instead protects students from discriminatory practices such as discouraging girls from enrolling in math and science classes or tolerating gender motivated harassment in math and science classes. <sup>1</sup>

## When does the STEM gap begin?

**The STEM gap begins early on, prior to college and professional life—**

- Girls who take the SAT test tend to score between 30 and 40 points lower on the mathematics section than their male counterparts. In fact, the average female score has been lower than the average male score every year since 1972, the earliest year in which data is available. <sup>2</sup>
- Although girls accounted for 56% of Advanced Placement (AP) test participants in 2015, only 47% of test takers for STEM-related tests were female. Nationwide, girls are most severely underrepresented in the computer science and physics tests.

**In the same year, only 22% of computer science participants and 35% of physics participants were female.** <sup>3</sup>

**“Although the obstacles presented by academic culture are becoming more subtle than the overt discrimination of the past, girls continue to be discouraged in K-12 mathematics and science courses; undergraduate women transfer out of STEM fields before graduating because of unsupportive classroom environments characterized by lack of role models, limited peer group, and outdated pedagogy; and women scientists and engineers earn less and advance more slowly than men in both academia and the private sector. And while some of these differences could result from personal choices, the culture of STEM fields too often creates circumstances that isolate and exclude girls and women, dissuading them from pursuing these careers.”**

*Title IX at 35: Beyond the Headlines,  
National Coalition for Women and Girls in  
Education, 2008*

## In which fields is the STEM gap most apparent?

In 2011 women had an extremely low graduate school enrollment rate in engineering (23%), computer sciences (25%), physical sciences (33%) and economics (38%). <sup>4</sup>

## Why does the STEM gap matter?

**Girls who pursue careers in STEM fields are more equipped to achieve economic self-sufficiency because women holding jobs in STEM fields get paid more and are less likely to be unemployed—**

- In October 2010, unemployment rates for those in science and engineering fields in the United States was only 4.3%, much lower than the national average of 9.0%.<sup>5</sup>
- In 2012, half of all workers in science and engineering fields had annual incomes of at least \$78,270, more than double the average annual earnings of the entire US workforce.<sup>6</sup>

## How can adults encourage girls to explore their interests in STEM fields?

- ✓ **Counter negative stereotypes and provide encouragement by introducing girls to successful women working in STEM fields.**
- ✓ **Advocate for Title IX enforcement and programs to promote interest in STEM in your local schools.**
- ✓ **Encourage girls to enroll in STEM classes during middle school and high school.**
- ✓ **Teach girls that success in STEM disciplines is achieved by practicing and developing one's skills. Avoid associating success with innate, unchanging ability.**

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<sup>1</sup> SWE, "SWE General Position on the Application of Title IX to the STEM Fields", [http://societyofwomenengineers.org/images/stories/SWE\\_TitleIX\\_Statement\\_2006\\_06.pdf](http://societyofwomenengineers.org/images/stories/SWE_TitleIX_Statement_2006_06.pdf)

<sup>2</sup> The College Board, Total Group Mean SAT Scores, College Bound Seniors, 1972-2010, <http://professionals.collegeboard.com/profdownload/2015-total-group-profile-report-cbs.pdf>

<sup>3</sup> The College Board, Advanced Placement Program, Program Summary Report, 2015

<sup>4</sup> National Science Foundation, Science & Engineering Indicators 2014, <http://www.nsf.gov/statistics/seind14/index.cfm/chapter-2/c2h.htm>

<sup>5</sup> National Science Foundation, Science & Engineering Indicators 2014, <http://www.nsf.gov/statistics/seind14/index.cfm/chapter-3>

<sup>6</sup> National Science Foundation, Science & Engineering Indicators 2014, <http://www.nsf.gov/statistics/seind14/index.cfm/chapter-3>