The Big Idea
What the Research Shows

Even though young girls and boys sit side by side in educational settings all across the country, women are much less likely to choose careers in science and engineering (S&E) than men. Although the number of women in STEM fields has increased tremendously over the past half-century, it still is not keeping pace with the rising demand for skilled workers in these areas.

Over the past 10 years, growth in STEM jobs was three times as fast as growth in non-STEM jobs. Between the years 2008 to 2018, STEM occupations are projected to grow by 17.0 percent compared to 9.8 percent growth for non-STEM occupations and STEM workers earn 26 percent more than their non-STEM counterparts (U.S. Department of Commerce, 2011). Although women make up about half the total U.S. college-educated workforce, they represented only 26% of the college-educated workforce in S&E occupations in 2008 (National Science Board, 2012). The simple truth is that Americans cannot remain competitive in STEM fields without more women entering these careers. The graph below shows the number of women who were employed in selected STEM professions in 2011.

Women in Selected STEM Occupations, 2011


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FOR GIRLS IN SCIENCE (FGIS)
While women are making gains in some fields, the careers in which women are advancing are not the ones in which demand is growing the most. Approximately 58% of the projected increase in S&E jobs is in computers and math (NSB, 2012). But in 2011, the percentage of jobs held by women in computer science was only 26%. Many people argue that encouraging women and minorities in these fields will ultimately improve these professions, maximizing innovation to create products and services that are better representative of all users (Hill, Corbett, & St. Rose, 2010).

But the problem begins even earlier. The graph to the right shows the number of bachelor’s degrees earned by women and men in S&E fields in 2010. Women have steadily increased their numbers in some areas of science, including social and biological sciences, but they are still lagging behind in areas such as physics, computer science, and engineering.
To prepare our girls for the 21st century workforce, it is crucial to reverse these trends. First, it is important to recognize that girls and boys do not display a significant difference in their abilities in math and science. The cause for the gender gap in STEM achievement is social and environmental (Hill et al., 2010). Where gender differences consistently appear is in boys’ and girls’ interest and confidence in STEM subjects, starting at a very young age. For girls, this can be linked to a negative self-perception (Halpern et al., 2007). A study by the National Science Foundation in 2003 showed that in grades 4, 8, and 12, females were less likely than their male counterparts to agree with the statements, “I am good at math” and “I am good at science” (National Science Foundation, 2003). Ultimately, these viewpoints matter. If girls do not believe they are capable, they are unlikely to succeed. While the gender gap in STEM interest had remained relatively steady over the past two decades, it is now increasing at a significant rate. Male students are over three times more likely to be interested in STEM majors and careers, compared to female students (My College Options & STEMconnector, 2013).

This is where SciGirls can help. It is important to spark and strengthen girls’ interest and confidence in STEM subjects before high school, when academic choices will either open or close doors to postsecondary STEM studies and careers (Halpern et al., 2007). The SciGirls videos, combined with our gender-sensitive, inquiry-based activities and a community-focused website, can foster girls’ interest in STEM and shape their attitudes toward these fields. At the same time, SciGirls resources can advance gender sensitivity among educators. With this awareness, educators can recognize and avoid the unconscious behaviors that often contribute to STEM-focused climates that are unfavorable for girls.

Meeting the Challenge

We know that eliminating the gender gap is challenging work. It is difficult to convince administrators, parents, or fellow staff of the importance of this mission. For help beyond the research outlined here, please see our suggested readings on page 18. Your efforts will not only help girls, but will improve the general climate in your educational setting and level the playing field for all learners.

For more information on the importance of STEM encouragement and for tips on how you can help, please see pbs.org/parents/scigirls/tips.