Encouraging Girls in the Sciences — STEM Power

NRCS Helping Girls & Helping Communities

Science, technology, engineering and mathematics, or better known as STEM, offer important career fields for the future. Jobs in the STEM areas tend to offer higher than average salaries, and employment opportunities are expected to continue to increase. But, unfortunately, 62 million girls around the world are not enrolled in school.1

Researchers have found that for every year that girls attend high school, there is a 10-20% increase in salary earning power, and even more with each successive year attending college.

Furthermore, research suggests that when girls receive a quality education, they will have access to better jobs, and as a result, raise healthier children.

What better way to invest in a community than to improve access to the sciences and encourage girls to take STEM-related courses in school—STEM power!

The US Department of Agriculture’s Natural Resources Conservation Service (NRCS) actively engages the STEM areas in many of its professional job positions. Our employees put conservation on the ground every day across the country through various career fields to include natural resource managers and conservationists, soil scientists and agronomists, wildlife biologists, engineers, computer and information technology specialists, business and financial managers, public and legislative affairs specialists, and many other professionals make conservation happen in local communities across the country every day.

NRCS is in every community and our employees have an opportunity to make an even more significant difference in the work already taking place. By helping elementary, middle and high school girls have access to the STEM areas, we empower young girls to continue to learn, and we invest in their future, and the sustainability of one of our greatest resources—families and communities....STEM Power.

**ENCOURAGE GIRLS IN THE SCIENCES!**

**Ways NRCS Can Help Boost Girls’ Self-Esteem**

1. Be positive and supportive.
2. Provide opportunities for hands-on learning—conduct field days for students vs relying solely on school visits and classroom presentations; and, get students involved in developing a pollinator habitat or native grass demonstration.
3. Engage all the senses—don’t forget about tactile and kinesthetic opportunities. Girls learn by doing!
4. Mentor and provide women role models.
5. Adopt a local school.
6. Sponsor a school’s outdoor classroom or garden.
7. Invite students to local USDA Service Centers—Have a “Be a Conservationist for the Day!” or “Be an Engineer for the Day” contest!

Purpose: This factsheet is a resource which provides data, information, and techniques to involve and engage girls in STEM subject areas. Use this factsheet as an outreach tool in the local community. Share this information with community-based organizations, local leadership, educators and school administrators.
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NRCS’ STEM Resource Materials for Girls

The Natural Resources Conservation Service (NRCS) provides a variety of free publications about conserving our natural resources.

Click here to visit the USDA Distribution Center and browse the list of available items. Enter the title, a keyword (such as "water" or "soil"), or the publication/form number in the 'Search' box. To view the entire list, click on "Browse All." To learn how to place an order, check out this fact sheet: "How To Order On-line."

NRCS Career Opportunities
Challenging Careers in the NRCS
PA-1634 This brochure explains the many conservation career fields, job qualifications and employment opportunities available at NRCS. (2008)

Earth Team brochure
Volunteer for the Natural Resources Conservation Service Earth Team! This brochure explains what the Earth Team is, who can volunteer and what they can do. (2013)

Educational Materials—Posters
An Invitation to a Healthy Apartment Poster
This combination poster/brochure provides information on how to turn your apartment, townhouse or condominium into a landscaped oasis that provides food and rest for wildlife. Size: 8½ x 11 inches closed and 11 x 17 in. fully opened. (2006)

An Invitation to a Healthy Country Home Poster
This combination poster/brochure discusses practices and techniques to improve the rural landscape and its attractiveness to birds, bats and butterflies. Size: 8½ x 11 in. closed and 11 x 17 in. fully opened. (2006)

An Invitation to a Healthy Neighborhood Poster
This combination poster/brochure shows how neighbors can improve their own neighborhood by joining together to create habitat for birds, bats, and butterflies. Size: 8½ x 11 in. closed and 11 x 17 in. fully opened. (2006)

An Invitation to a Healthy Schoolyard Poster
This combination poster/brochure shows how community schools can attract additional birds and wildlife while providing a healthier, more interactive learning environment for students. Size: 8½ x 11 in. closed and 11 x 17 in. fully opened. (2006 - Reprinted 2008)

An Invitation to a Healthy Yard Poster
This combination poster/brochure describes how adopting a few basic principles can turn a yard into a sanctuary for wildlife. Size: 8½ x 11 in. closed and 11 x 17 in. fully opened. (2006)

Inch of Soil Poster
NRCS-P1-06 Readers are taken through 500 years of historical events to illustrate the amount of time it can take to form one inch of new life giving soil. Size: 34 by 25 in. (2006)

Native Orchids Need Their Pollinators Poster
The 2014 Pollinator poster, titled "Native Orchids Need Their Pollinators", depicts the beautiful and diverse orchids, many of which are threatened or endangered, and the pollinators they attract. The text is translated into English, French and Spanish. The poster size is 24 x 36 in. (2014)

Water Cycle Poster
PA-1588 is a 2-sided poster that provides information on nature's recycling system and contains information on watersheds, pollution, etc. The poster size is 40 x35 in. (Jan 2012)

Educational Materials—Brochures
Be a friend to Pollinators Brochure
This colorful brochure explains the different types of pollinators and some fun facts about them. The publication folds into a 2¼ x 3 1/2 in. pocket-size brochure. (2010)

The Adventures of Sammy Soil
This coloring book, which focuses on soil and water conservation, further explains the importance of conserving our natural resources. The coloring book was designed by Melanie Sanderson and adapted from the Sammy Soil story by Ernest H. Whitaker and Sandra L. Purdue. Slightly revised by NRCS in 2014

What Is A Watershed?
PA-420 defines a watershed, and explains how they work and illustrates their importance to people and their communities. (2005)

Your Hometown Clean Water Tour
Colorful drawings and cartoon characters make this a hit as you learn about the importance of keeping our hometown water clean and clear. This features characters like Major Mulcher and Not-Till Bill and includes a ten-question water quiz. (2006)

Educational Materials—Educational CDs
Soil-Helping People Understand Soils CD 4.0*
Maximum order is 5 CD's. This CD brings the study of soil to life for educators and their students in grades K-12. It includes numerous lesson plans, resources, books, background information, science experiments, songs and a movie about soil. (2010)

Educational Materials—Booklets and Handouts
Backyard Conservation Book
PA-1621 Only available as a downloadable pdf! This popular 28-page color booklet shows how farm and ranch conservation practices can be adapted for use in any size backyard. 10 conservation practices are also highlighted. This book has lists of websites and places to get additional conservation information and assistance. Pages can be used individually or with the entire booklet. (2007)

Spanish Educational Materials—Booklets and Handouts
Conservacion En Su Jardin
PA-1621-SP is the Spanish translation of the Backyard Conservation book. This 28-page color booklet highlights 10 conservation practices used on the farm that can also be used in your own backyard. The practices include mulching, composting, terracing, nutrient management, etc. (2007)

What Is A Watershed? ¿Qué es una cuenca?
PA-420 –SP Available as a downloadable PDF only. This is the Spanish version of "What is a Watershed?" and is a small pamphlet describing watersheds, how they work, and how they differ in communities. (2005)
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STEM Resource Materials

The Natural Resources Conservation Service (NRCS) believes in girls, and believes that girls can be anything. NRCS promotes girls’ study of STEM subjects and wants all girls to aspire to careers in the STEM fields.

Find inspiration here:

Utah NRCS shares the story of Student Employee Intern Semira Crank who is one of a growing number of young Navajo women breaking barriers to become scientists and engineers. She tells her own story in the Utah NRCS YouTube video.

https://www.youtube.com/watch?v=nrYnWCnZxxc

Whitehouse.gov empowers girls in STEM, and features young women scientists and engineers who share their exciting projects -- ranging from a machine that detects buried landmines, to a prosthetic hand device, to a lunchbox that uses UV light to kill bacteria on food.

https://www.youtube.com/watch?v=Q_11rwb4vEc

This short film was created by a young woman who is studying computer science to spread awareness about the underrepresentation of women in STEM.

https://www.youtube.com/watch?v=fQyCBTDproE

Intel encourages and invests in girls and the study of STEM, especially the computer sciences. Women are powerful catalysts for global change and economic growth. Today, more girls and women are using technology than ever before, but relatively few play a significant role in creating this technology. Intel is committed to disrupting this trend through strategies and collaborations that inspire, engage and retain girls and women in technology, engineering and computer science. There’s never been a more critical time in our history to inspire more girls and women to be technology innovators; our world needs a new generation of female innovators to tackle its toughest challenges. Together, we can make an epic and powerful impact: get involved, mentor and empower girls and women in STEM!

https://www.youtube.com/watch?v=eXlWG6DMGSQ

To educate a girl is to build a healthier family, a stronger community, and a brighter future. Unfortunately today, 62 million girls around the world are not in school. Half of them are adolescents. We know that countries with more girls in secondary school tend to have lower maternal mortality rates, lower infant mortality rates, lower rates of HIV/AIDS, and better child nutrition. But too often, a girl who could change her world for the better is locked out of that future by the circumstances of her birth or the customs of her community.

The Let Girls Learn Initiative is a great program to get girls involved. Visit https://www.whitehouse.gov/letgirlslearn to get more information about this program.

Help get girls learning, especially in the STEM subject areas, Find ways to empower girls in your community to keep them learning—today, tomorrow and in the future—to be stronger, and to build a stronger family and community.

For more information about how to improve access to learning and ways to encourage elementary, middle and high school girls in the science, technology, engineering and mathematics subjects, contact your USDA Federal Women’s Program Manager in your state. This fact sheet was produced by the USDA-NRCS Federal Women’s Program’s Encouraging Girls in STEM sub-committee. © September 2015

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