Science Societies

Teacher Grants Help to Grow Soil Science Knowledge

By Margaret Holzer and Ellen Philips, SSSA K-12 Committee Members

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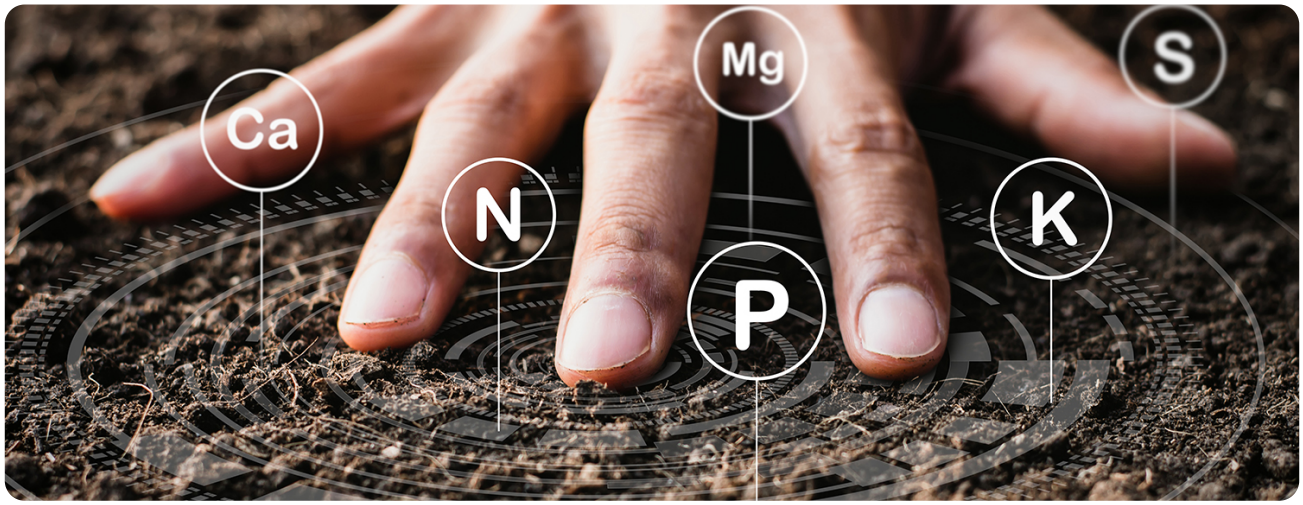

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Teachers need tools to teach about soils! The SSSA K-12 Committee, in a survey of K-12 teachers across diverse groups of grades taught, location (rural, suburban, urban), and teacher experience requested input on the Soils4Teachers website and resources for teaching soil science. One key

finding indicated that it was difficult for teachers to find and purchase the scientific and educational equipment needed to teach many topics, particularly in the areas of soil chemistry, biology, and physics. This limitation stifled their ability to incorporate soil topics into existing curriculum or to initiate new curriculum that would teach soil principles.

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In 2023, the SSSA K-12 Outreach Committee responded by seeking and receiving a grant from the Agronomic Science Foundation (ASF) to support K-12 educators. The Agronomic Science Foundation supports ASA, CSSA, and SSSA activities, programs, and projects that make a difference in the future of agronomy, crop science, and soil science.

“My personal highlight was seeing students get really interested in the whole process. Some of them had grown up on large farms, and knew that their soil ‘gets tested,’ but they really didn’t understand what that all entailed until they were out in the fields. I have one junior student who is determined to go into this as a field of study because she found it to be so fascinating, and her experience would have looked a bit different if we didn’t have the funding from this grant to buy kits to measure macronutrients!”

—“Soil Sampling and the Macronutrients of Our Soils,” Teacher: Hanna Marra, Central Wisconsin Christian School, WI

What better way to act on this mission than creating a grant program to provide 10 K-12 educators per year with up to $500 each to purchase supplies and materials to teach soils. The program is currently in its second year of a three-year funding program. Each year, the committee has received approximately 40 proposals that have been evaluated by committee members.

Applications have come from 23 states, Puerto Rico, and Canada. More than half of the applications received and among those awarded grants were Title 1 schools. Check out the table below to see the wide diversity of soil topics now being incorporated into all curriculum from reading to AP physics. We estimate 3000+ students learned about soils from the 2023–2024 projects!

“Students were involved in all of the stewardship and testing components of the labs. Students were able to see how fall and spring work connect and how important it is to not just take from our school garden, but also return nutrients to it, so we can continue to use it year after year.”

—“Environmental Science Lessons (rain gardens, nutrients and cover crops, reducing erosion with native plants),” Teacher: Karrie Rovito, Waters Elementary School, Chicago, IL

HIGH SCHOOL	
2023–2024	
Berrien High School, GA	Digging into Phenomenal Science Learning for All with Soil
Furlow Charter School, GA	Sumter Soil Science
James M Bennet High School, MD	Growing Green Thumbs: The James M. Bennet Garden
Central Wisconsin Christian School, WI	Soil Nutrient Testing
Fort Cherry School District, PA	Living soils: Compost pile construction
2024–2025	

Fort Morgan High School, CO	From Earth to Classroom: Exploring Soil Science
Chattooga High School, GA	Resistant Soil Investigation
Bismarck-Henning-Rossville-Alvin High School, IL	Turning Waste into Gold
Southcrest Christian School, TX	Earthworm Toothpaste: Measuring Organic Matter in the Soil
James Island Charter High School	Soil on Mars and Earth-How do the 2 Compare?
MIDDLE SCHOOL	
2023–2024	
Putnam Academy of Arts and Sciences, FL	Soiling for the Future
Matagorda ISD, TX	Two Beds and a Bin
2024–2025	
Tremont Consolidated School, ME	Garden Mysteries
Taos Middle School, NM	Ingredients of Soil
St. John the Baptist School, IL	Schoolyard Soil Improvement Plan
Grissom Elementary, IL	Urban Agriculture in the City Kid Classroom!
ELEMENTARY	

2023–2024	
Pioneer Elementary School, CO	Looking Underground
Swan Lake Outdoor Education Centre, ON	Soil's Significance
2024–2025	
Green Woods Charter School, PA	Sowing Sustainability: Soil Health and Erosion Education

“These new soil samples allowed us to better use our time so that we were able to explore more of the property, which offered a better opportunity to compare and contrast the soil in different areas. The ease of use, with the step feature, enabled students to more successfully collect data relative to the previous tools we were using.”

—“Ecology Hike,” Teacher: Gina Shillolo, Swan Lake Outdoor Education Centre, Newmarket, ON

How can you help? Watch for an announcement of the 2025 SSSA K-12 Education Grant in the new year. Get the word out to teachers about this opportunity, which is open to all K-12 teachers in North America. Contact your local schools or your children’s teachers about the grant program. Reach out to Susan Chapman at schapman@sciencesocieties.org with any questions.

“The tools purchased will help students collect plant material from our greenhouses and hydroponic farm and transport it to the compost stations. Specific lesson plans utilizing the compost station include an eight grade unit on the carbon and nitrogen cycles and soils and horticulture lessons on soil testing. The resulting compost will be used around campus and offered to local gardeners/community members!”

—“Building a School-wide Compost Station,” Teacher: Katelyn Willyerd, Fort Cherry School District, Washington, PA

2025–2026 key deadlines for SSSA K-12 Education Grant

February 1, 2025: Grant announcement

April 30, 2025: Application deadline

June 5, 2025: Awardees notified

April 30, 2026: Submit final report, photos, and budget expenditures

K-12 Committee accomplishments continue growing!

The SSSA K-12 Outreach Committee is comprised of SSSA members dedicated to sharing the story of soils for the K-12 audience. This passionate committee continues to act on its charge with numerous outreach and dissemination projects. Committee members have developed a comprehensive soils education website (www.soils4teachers), written books, developed curriculum materials, and

have shared soil science with educators at workshops, conferences, via articles, and in webinars. The committee is supported by SSSA, grants, and the many in-kind hours and efforts of its dedicated members. View our numerous accomplishments: https://www.soils4teachers.org/accomplishments.

We are looking for more committee members! Volunteer today at: https://www.soils.org/membership/committees/volunteer (select the SSSA K-12 Committee).
