

Science Teachers, We Support You

Imagine being a science teacher these days. Financial realities impact everything from class size to supplies to field trips. Yet there is growing evidence of how crucial it is for students to see, touch and test drive what they learn.

Teachers today – especially those teaching science, technology, engineering and mathematics (STEM) – need advocates. They need to be cheered on, appreciated and, most of all, supported in their pursuit to inspire children to seek STEM professions.

Supporting teachers is a key part of Dow's STEM education strategy. Dow has become a leader in promoting STEM education because these skills are in high demand both within the company and in the economy as a whole. As evidence of the latter, a study by the McKinsey Global Institute found that the U.S. will have a shortage of more than 1.5 million STEM professionals by 2020.

“We need to act quickly and decisively to turn this trend around and ensure that there are enough people with

the right skills,” said David Bem, Dow vice president for Research & Development and a member of the company's STEM Council, a group of leaders who chart the course of Dow's STEM strategy.

Teach, Learn, Work, Advocate

Dow's national STEM strategy is built on four pillars: supporting teachers, engaging students, preparing workers and advocating in the community for STEM education. This Teach/Learn/Work/Advocate concept recognizes that meeting the STEM challenges of tomorrow requires action now on many levels. And it's no accident that Teach is first.

“Dow believes teachers are the multiplier effect on our young people, serving as an important conduit between the love of science and the connection to a STEM career,” said Rob Vallentine, Dow's global director of STEM education.



Teachers from around Philadelphia learn how to provide inquiry-based science teaching during a week-long seminar offered by the Riverbend Environmental Education Center in collaboration with The Franklin Institute.

Dow's national STEM strategy is built on four pillars: supporting teachers, engaging students, preparing workers and advocating in the community for STEM education. This concept recognizes that meeting the STEM challenges of tomorrow requires action now on many levels.

Multi-faceted Support

Dow supports STEM teachers through sponsorships, grants, volunteerism and professional development.

Each year the company funds teacher participation in prestigious training programs such as the Smithsonian Science Education Academies and the Keystone Science School. And in 2014, four Philadelphia teachers are among 159 from across America selected as Dow fellows to the New Science Teachers Academy, a program of the National Science Teachers Association (NSTA). These teachers will benefit from online professional development, seminars and mentoring, and will attend the 2014 NSTA National Conference on Science Education in Boston.

"When I heard about NSTA, I thought it was amazing. It's really a great opportunity," said Catherine Rigoulot, a high school science teacher at Mariana Bracetti Academy Charter School in Philadelphia who was chosen for the program. "Teaching science is a little overwhelming sometimes. There's a lot that's put on you. But it's great to see the students' faces light up, to see the light bulb turn on."

Dow also supports local Delaware Valley teaching programs, including several run by Philadelphia Math + Science Coalition and its parent organization, the Philadelphia Education Fund (Ed Fund). Each year, for instance, Philadelphia teachers can apply for a grant funded by Dow to receive up to \$1,000 for educational materials. One such grant allowed middle school students to explore the effects of UV-A and UV-B radiation on human skin and eyes using UV detector beads, sunscreens and sunglasses. Another enabled a high school class to create a compost system to better manage manure, yard waste and cafeteria food waste.

"We know from national data that, on average, teachers across the board spend about \$800 of their own money on school supplies every year. I suspect that number is higher for science teachers," said Don McKinney, program

coordinator for the Math + Science Coalition. "Through the generosity of Dow, we've been able to offset that with these grants."

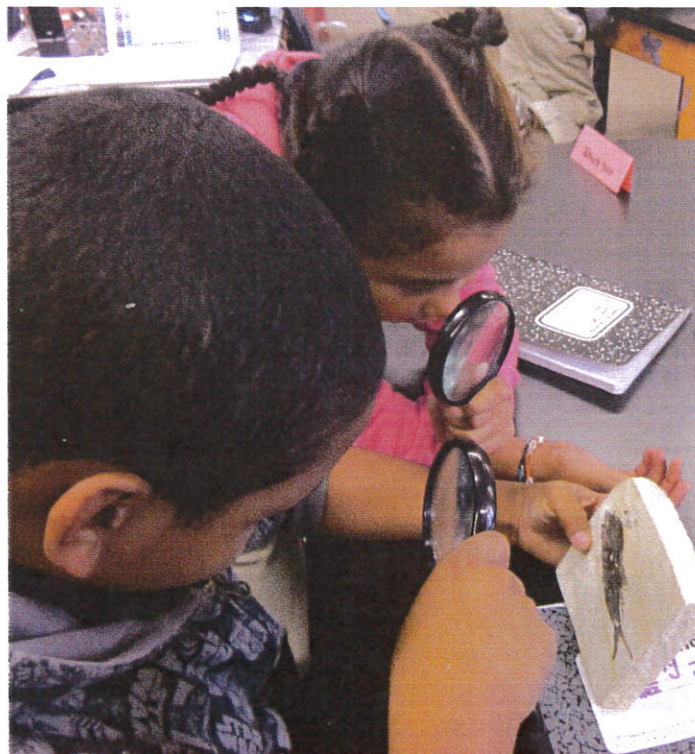
Taking Action Today

Professional development resources and programs remain an integral element of Dow's overall support of STEM teachers. As part of that commitment, the company funds an immersive training program offered by the Riverbend Environmental Education Center. It includes a collaboration with The Franklin Institute where teachers spend a week in August learning about inquiry-based science teaching.

"It's a new way of teaching science, not out of a book," explained Laurie Bachman, Riverbend's executive director. "Teachers come to an understanding of how important it is for the students to be the ones asking the questions."

Teachers who attend the training can apply for a year-long fellowship that gives them curriculum materials for their classrooms, one-on-one mentoring, and feedback from a seasoned teacher after a series of classroom visits. Of the 18 teachers who took part in the most recent training, about a third were able to take advantage of the fellowship.

"People have many ideas about what education should be and how we can improve it, and education probably does need to be changed on a global scale," Bachman said. "But right now, we developed this program because of what is. There are so few children in Philadelphia who have access to high quality education on the level of their suburban peers, and we're trying to change that."



Students get a close look at fossils during a visit to the Riverbend Environmental Education Center in Gladwyne, Pa.