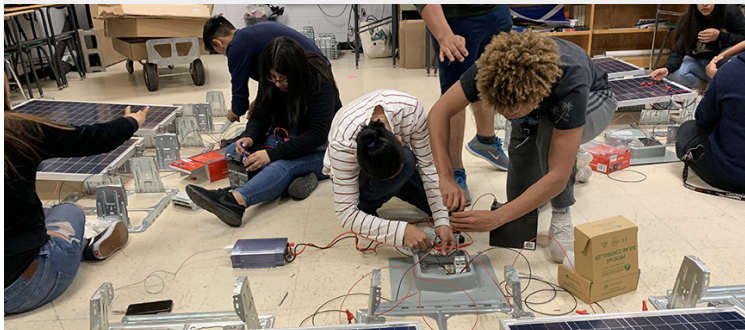


Environmental STEM Education Programs for NYC Schools

How can we prepare the next generation to build a more sustainable future? Solar One is a nonprofit environmental education organization that provides K-12 education, workforce training, and solar technical support in the tristate area. Solar One's K-12 Green Design Lab (GDL) supports schools through student programs, curricular resources, and teacher professional development. The program engages students using hands-on interactive activities focused on climate, energy, and the environment.

About the Curriculum:

The GDL curriculum includes background readers for teachers, lesson plans, and worksheets. The lessons are modular and designed to be incorporated into a teacher's existing curriculum. Green Design Lab is designed to support students to solve real-world environmental challenges through sustainable design and engineering. All activities are aligned to the Next Generation Science Standards.



Program Offerings:

- **Energy Classroom Residency Program:** Participating schools work with a Solar One Educator who will visit the school and co-teach with a classroom teacher for the duration of the program. Classroom residency programs focus on Solar One's GDL energy curriculum, which explores the basics of energy, circuits, energy efficiency, electricity production, climate change, and renewable energy. All residency programs include curricular resources, all materials for hands-on projects, and planning and preparation with participating teachers.
- **Stem After-School Programs:** Solar One collaborates with existing after-school programs to provide hands-on environmental STEM activities. Programs are typically 60-90 minutes. All after-school programs include materials for hands-on projects, printed materials for students, and planning and preparation with participating teachers/leaders.
- **Professional Development Training For Teachers:** During a Solar One training, teachers participate in hands-on activities from the Green Design Lab curriculum and work collaboratively on lesson planning. All participating teachers are provided access to all 200 lessons and activities in the Green Design Lab curriculum.

Sample Activities Include:

- **Building Solar Race Cars:** Students learn about the various types of solar energy including photovoltaics and design and construct mini solar powered racers.
- **Wind Turbine Design Lab:** In a hands-on experiment, students design and construct model wind turbines, measure the power they produce, and then refine their designs to optimize output.
- **Building Batteries:** Students learn about the importance of energy storage for the future of renewable energy and are challenged to build a battery that will power a small motor using only household materials.



Solar One Program Highlights:

- **CareerCLUE:** Solar One in partnership with the NYC Department of Education (DOE) and the NYC Department of Youth and Community Development (DYCD) offer a unique credit-bearing Summer Youth Employment Program (SYEP) called CareerCLUE (Community Learning, Understanding, and Experience). CareerCLUE components provide students with an innovative experience exploring hands-on activities such as building solar USB chargers, career readiness, field trips, and a student-led service learning project focused on the environment and the local community.
- **NYC Solar Schools Education:** The NYC DOE is working with the Department of Citywide Administrative Services, Division of Energy Management (DCAS DEM) to install 100 MW of solar on City-owned buildings by 2025. In order to connect solar installations to classroom education, NYC DOE partnered with Solar One to develop the Solar Schools Education Program. Connecting solar installations on school buildings to curriculum allows teachers to use solar as a tool for students to learn about renewable energy and sustainability. The NYC program includes professional development training for teachers, in-school classroom residencies with students, and a Career and Technical education program where Solar One educators train students studying electrical, engineering, or construction to install solar PV.