








Students on school boiler room tour

Solar One, a nonprofit environmental education organization, brings you The Green Design Lab™, a curriculum and program focused on design and innovation in emerging green technologies. The Green Design Lab™ is the only curricular blueprint of its kind that looks at the school building as both a laboratory for learning and a tool for environmental change.

Green Design Lab™ was created with two objectives in mind: increasing environmental and technical literacy and promoting sustainable behaviors. The GDL curriculum centers around five units – **Energy, Air, Water, Materials, and Food** – that include hands-on activities for students and instructional guides for teachers. The activities incorporate learning about building performance so that students can “take action” in their schools. Actions range from energy-saving behaviors to changing what the school purchases and from small investments to large ones.

“ Love the activities. So do the kids! ”
-Elementary School Teacher

“ Got kids thinking, creating, and connecting. ”
-Middle School Teacher

UNIT	ENVIRONMENTAL LITERACY & UNDERSTANDING	STUDENT-LED ACTION
 Energy	<ul style="list-style-type: none"> · Electricity and heat generation · Renewable energy – solar and wind · Carbon footprint 	<ul style="list-style-type: none"> · Energy Challenges · Energy Audits and Conservation Plans
 Air	<ul style="list-style-type: none"> · Air pollutants and sources · Indoor/outdoor air quality · Environmental & health affects of air quality 	<ul style="list-style-type: none"> · Non-toxic Cleansers · Transportation alternatives to school
 Water	<ul style="list-style-type: none"> · Water hydrologic cycle, watersheds, water consumption and water conservation · Wastewater generation and water pollution · Stormwater runoff and green infrastructure 	<ul style="list-style-type: none"> · Faucet Aerators · Rain Harvesting Systems · Reusable Water Bottle Campaigns · Water Audits and Conservation Plans
 Materials	<ul style="list-style-type: none"> · Sustainable materials & design · Production/consumption/waste lifecycle · Recycling alternatives 	<ul style="list-style-type: none"> · Enhancing recycling programs · Purchasing more recycled and local products
 Food	<ul style="list-style-type: none"> · Nutrition · Healthy food choices · Sustainable Agriculture 	<ul style="list-style-type: none"> · Healthier food choices · Composting food waste · Edible school gardens or greenhouses

For more information visit: www.thegreendesignlab.org

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Solar One CleanTech

High School Curriculum

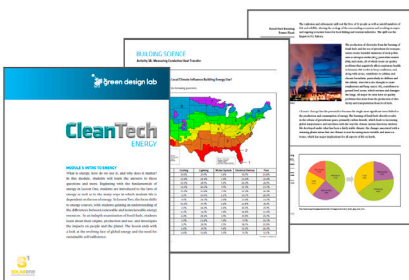
*Inspiring High School Students in STEM,
Sustainability, and Careers in the Emerging Green Economy*



CleanTech, Solar One's high school curriculum, engages students in sustainable design, problem solving, and innovation. Through hands-on learning, students explore emerging clean technologies and sustainability-related policy and economic issues at the local, national and global level. Cleantech is designed to inspire the next generation of green engineers, scientists, architects, building system managers, energy auditors, economists and entrepreneurs.

Cleantech is an integral part of Solar One's Green Design Lab™ curriculum. CleanTech expands on the core concepts of the Green Design Lab interactive curriculum with more advanced and technical content. It introduces students to the Cleantech industry through STEM focused reading material, research projects and hands-on labs. Through four units – Energy, Materials, Water and Food – students learn about topics like electric grid transmission, renewable energy, battery storage, demand management, water technologies, biomimicry, stormwater management, and hydroponics, to name a few. In addition to addressing the foundational aspects of these four subjects, CleanTech offers Accelerator activities that cover a broad range of science, economic and policy research topics, and Green Skills activities that focus on developing hard skills in such areas as building performance and renewable energy.

“ Amazing in every way! There are lots of nonprofits that try to develop curricula with all the best intentions- but every single activity that Solar One presented is structured and scaffolded enough that it will actually work in an inner-city classroom. –High School Teacher ”



» **The Energy Unit** introduces students to the dynamic clean energy economy. The Unit focuses on emerging technologies, challenges and opportunities in smart grid transmission, solar, battery storage, demand management, smart buildings, and much more!

» **The Water Unit** introduces students to emerging trends and technologies affecting water supplies both locally and globally. From investigating water availability and quality to exploring methods of stormwater management, the Water Unit takes a comprehensive look at this fundamental yet complex topic.

» **The Materials Unit** examines the social, economic and environmental impacts of the materials life cycle as well as elements and techniques of sustainable design, including close study of topics such as biomimicry, electronics and collaborative consumption.

» **The Food Unit** introduces students to the emerging trends and technologies affecting food systems, from investigating conventional food production and distribution to exploring methods of sustainable agriculture and feeding the world's growing population.

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CleanTech is a project of Solar One: www.solar1.org. Clean Tech was developed with support from The National Science Foundation and the Rockefeller Foundation.



Any opinions, findings, and conclusions or recommendations expressed in this material are those of Solar One and do not necessarily reflect the views of the National Science Foundation or The Rockefeller Foundation.