



FOCUS ON SOLAR Grades 9-12

NYSERDA

**ENERGY SMART
STUDENTS PROGRAM**

Workshop Objectives

- Develop a basic understanding of solar energy, dispelling common myths about PV, and learn how it can reduce the environmental impacts of our energy consumption.
- Perform activities showing how solar energy is transformed to electricity, through a process called photovoltaics (PV), using the lessons on the School Power ... NaturallySM website.
- Empower students to teach their families practical uses for PV and consider careers in PV.
- Become familiar with the services offered by NYSERDA.

Agenda (6 contact hours)

Welcome, Introduction & Framing the Day

Solar PowerPoint presentation - this entire presentation is on the website for you to download and use at your convenience – www.GetEnergySmart.org

Introduce the Materials

- This is not a whole curriculum.
- The School Power...NaturallySM program includes 64 lessons that are correlated one or more of the New York State Learning Standards for students in grades 5 through 12. Each activity can be found on the CD and the School Power ... NaturallySM website.
- For many of the lessons, you will see a sun symbol near the lesson title. This alerts you that these lessons make use of the [Performance Data](#) from the fifty schools participating in the program. These schools have PV systems and data monitoring equipment.

Energy Overview

Review some facts about energy sources and usage in New York vs. the U.S.

Some Background in Solar

Basics in how solar energy can be converted to electricity.

Demonstrating the Lessons

- SPN LESSON #28: Series or Parallel?
- SPN LESSON #10: Solar Energy in New York
- SPN LESSON #23: Photoelectric Effect in Photocells
- SPN LESSON #26: Orienting a Photovoltaic Cell
- Introduction to the School Power Naturally Solar Learning LabTM Virtual Array Tour: Lesson 4 in the Series
- Solar Kit LESSON #13: Solarize a Toy
- Solar Kit LESSON #12: Calibration Curve for a Radiation Meter
- Building a Solar House

Pulling It All Together

- How can you integrate some or all of these activities into your classroom?
- What ideas do you have to collaborate with another teacher/department in your school to teach PV and energy education?
- How can you inspire your students to learn more about PV and alternative energy?

Incentive and Competition Opportunities

- Igniting Creative Energy (ICE) – national K-12 student competition, sponsored by NEF.
- \$500 mini-grants for teachers (Visit our website www.GetEnergySmart.org for details and deadlines.)

Final Housekeeping Issues

- Survey, sign out, professional development certificate, and explain sub stipend process (if necessary).
- Become an Energy Ambassador! Tell others about what you learned here today. Recommend other NYSERDA workshops.

ABCs of Energy for Grades K-3

4Es of Energy for Grades 4-6

Energy Trilogy for Grades 7-12

Focus on Solar for Grades 5-8

www.GetEnergySmart.org and www.schoolpowernaturally.org

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