

Renewable Energy Education

A Teachers Activity Resource Guide to:

Solar Photovoltaic Energy



You can teach solar PV science in your classroom. MTC can help!

Solar photovoltaic technology, or "PV" for short, uses solar energy to produce electricity. PV technology uses the electrical properties of materials known as semiconductors to produce electricity. When sunlight hits the semiconductor material in a PV panel, the semiconductor creates an electrical charge which can then be transferred through a circuit to anything that uses electricity. PV is one of the most environmentally friendly technologies available. The solar energy that powers PV is a renewable resource, and electricity generated by PV technology does not require the burning of fossil fuels that produce harmful greenhouse gasses.

The Cambridge School of Weston has created a comprehensive renewable energy curriculum with an entire unit dedicated to solar photovoltaic energy. You could easily incorporate this lesson plan into your classroom to make learning about solar energy fun and accessible for you and your students. This program was supported by funding from the Massachusetts Technology Collaborative and the Renewable Energy Trust.

The Cambridge School's Photovoltaics Unit includes lesson plans that teach students about the basic science and application of solar energy in our society. Preparatory homework assignments set students up with a base understanding of solar technology that allows them to dive right into in-class projects and activities. Students will design electrical circuits connected to small photovoltaic models that capture solar energy to power small motors and appliances in the classroom.

The curriculum also addresses solar energy from a local perspective, engaging students in a solar site assessment activity. Students will use their newly acquired knowledge of photovoltaic technology, as well as math and geography, to find the best possible location for a solar installation in their community.

The Cambridge School of Weston Curriculum highlights the following curriculum strands:

For Grades 9–12 Science and Technology:

- Chemistry
- Physics
- Technology/Engineering

Free Online:
Cambridge School of Weston Curriculum
Recreate these activities and much more in your classroom

Links from the Massachusetts Technology Collaborative:

Explore all of the resources we have compiled at MTC's K-12 Education page: www.masstech.org/renewableenergy/k-12/k12.htm

Read an overview of Cambridge School of Weston's program and download the curriculum at www.masstech.org/cleanenergy/curriculum/writeups/cambridgeweston.htm