



Maine Saves Energy

About this Guide

The *Maine Saves Energy: A Guide to Student-Led Investigations Using Real-Time Electricity Monitoring* was developed to assist teachers in carrying out student-led investigations of residential electricity use utilizing existing and emerging technologies. Designed to help students learn how to use the many different types of electricity data available to homeowners, including that from new tools that provide real-time electricity information, the activities outlined in this guide will help students better understand patterns of use and pinpoint areas to conserve. Working as scientists, students collect, analyze and share data gathered from home energy monitors and/or from “smart” utility meters, instruments that provide real-time information about electricity use. Using data from these and other tools such as Kill A Watt meters, students design and carry out investigations and use their findings to make recommendations, based on evidence, for reducing consumption to homeowners and community members.

Maine Saves Energy: A Guide to Student-Led Investigations Using Real-Time Electricity Monitoring is designed to supplement and enrich the lessons in the existing *PowerSleuth* units, specifically the *Maine Saves Energy* unit. Lessons on forms of energy, transfer and transformation of energy, generation of electrical power, measurement of energy use with Kill A Watt meters and examination of the electrical energy consumption of Maine’s residences are part of the *Maine Saves Energy* unit. Although it is preferable to use the activities in this guide in conjunction with the *Maine Saves Energy* unit, the structure of the guide enables teachers to carry out these investigations and its related activities independently if desired. The Teacher Background in the Investigation Guide offers suggestions for tailoring instruction to meet the needs of your students. *Maine Saves Energy: A Guide to Student-Led Investigations Using Real-Time Electricity Monitoring* is based on Maine state and national science standards and, in addition to addressing energy content standards, pays particular attention to standards that describe what students should know and be able to do with respect to scientific data. The Investigation Guide and Supplementary Activity Matrix gives an overview of each of the instructional components of this guide and lists the key ideas, student learning goals and connections to standards. The matrix also identifies activities that can be used for assessing students’ understanding.

PowerSleuth and *Maine Saves Energy: A Guide to Student-Led Investigations Using Real-Time Electricity Monitoring* were developed by the Maine Mathematics and Science Alliance (www.mmsa.org) through



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All *PowerSleuth* units: *Energy Lights Maine* (Grades 4-5), *Energy Heats Maine* (Grades 6-7), *Maine Saves Energy* (Grades 7-8) and *Maine Saves Energy: A Guide to Student-Led Investigations Using Real-Time Electricity Monitoring* are available for download at no cost at the *PowerSleuth* website www.powersleuth.org.

