TECH: Alternative Energy - Photovoltaics (Energy)Module

Summary

New ...pdf. update in January 2012. This is an update of the original TLC module (now CTE Intro) using the original parts in a modified form to protect them. Included on page 14 of the updated PDF are sources for building your own. Students will identify uses of photovoltaic solar cells in our society today. Students will discover the potential of solar cells by using them to produce electricity in different applications. Students will make observations and measurements.

Time Frame

1 class periods of 45 minutes each

Group Size

Pairs

Life Skills

Thinking & Reasoning, Communication, Employability

Materials

Teachers will need the original parts to the Solarex Photovoltaic Demonstration Kit or they will need to order parts from other suggested vendors which are on page 14 -15 of the Teacher Resources. The information on how the original parts were converted are found in the Teacher Resources PDF file. To convert the original kit into a lasting module, a sheet of Kortron and T-mold for the box and some Radio Shack switches were used.

Background for Teachers

In the Spring of 1994, when it was learned that the parts for the Solarex photovoltaic demonstration kit were not going to be readily available anymore, the technology teachers in the Weber School District decided that a way was needed to protect the components. The connecting wires in the original kit were the most frustrating as they were constantly broken. It was decided to take the original components and have them mounted and hard wired. We came up with a modification that has worked quite well. The images on this document come from a variety of sources. They are either public domain, royalty fee, created by the author, or used by arrangement with the copyright holders. No permission is granted for the copying or re-use of any images used in this document, copyrighted or otherwise. Alternative Energy - Photovoltaics© Mike Breen - Author of document. USOE has purchased rights to the document which gives individual teachers within the state of Utah rights to print this document for use in their classes.

Student Prior Knowledge

They need to be able to read, write, and be able to do some arithmetic.

Intended Learning Outcomes

Students will identify uses of photovoltaic solar cells in our society today. Students will discover the potential of solar cells by using them to produce electricity in different applications. Students will make observations and measurements.

Instructional Procedures

Students will need to read the booklet and answer questions as they do the activity. Students will need to perform the experiments that are required to answer the questions. The teacher needs to have the photovoltaic demonstrator out for students and ready for use.

Assessment Plan

The student will complete a worksheet, and perform the experiments with photovoltaic cells. They will take measurements of amperage and voltage.

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