

Lesson Plan

Here Comes the Sun

Book: *Energy from the Sun*

Series: Energy for the Future

Level: Navigator

Objective

To help students understand the steps in which solar technology turns sunlight into the electricity used in people's homes.

Supplies

- *Energy from the Sun* book
- Access to the PBS Learning Media video “Solar Energy”: <https://www.pbslearningmedia.org/resource/solar-energy-video/vegas-pbs-steam-camp/>
- Several copies of the Solar Steps worksheet (attached)
- Pencils

Before the Activity

Read through the *Energy from the Sun* book, or assign it to students to read on their own. Print out a copy of the Solar Steps worksheet for each student. Pull up the PBS Learning Media video in your web browser.

Activity

While the *Energy from the Sun* book focuses on how electricity is generated from sunlight, the “Solar Energy” video discusses how that electricity gets to the homes and businesses that use it. Watch the “Solar Energy” video as a class (feel free to start at 1:00 to skip the video’s introduction and jump right to the part about solar energy). Then pass out a worksheet to each student.

Explain that the worksheet shows all of the steps in the process of turning sunlight into the electricity used in homes and businesses—but the steps are out of order. Students should number the steps to put them in the correct order. If students get stuck, remind them to think logically through which steps need to happen before others can occur. Provide additional assistance as needed.

Evaluation

Collect worksheets at the end of class. Use the attached answer key to give students 1 point for each correct answer, for up to 10 points.

Standards

This lesson may be used to address the Common Core State Standards' reading standards for informational text, grades 4 (RI 4.3) and 5 (RI 5.3), and the National Science Education Standards' Content Standard E, grades K–4 and grades 5–8.

Solar Steps

Write a number to the left of each sentence to put the steps in the correct order.

_____ Electrons flow down a transmission line into a substation, where the voltage is greatly reduced.

_____ Metal strips in a solar cell collect flowing electrons and send them down a wire.

_____ The sun shines down on Earth.

_____ Transmission lines, held up by transmission towers, carry flowing electrons at very high voltages across the country.

_____ Sunlight energizes electrons in a solar cell, allowing them to move among the cell's layers.

_____ Electricity enters people's homes and businesses at a usable voltage of 120 volts.

_____ Sunlight hits the top of a solar cell.

_____ Electrons flow down a distribution line into a transformer, where the voltage is reduced.

_____ Electrons in a solar cell flow toward the positive charge of one of the cell's layers.

_____ Distribution lines carry flowing electrons either overhead or underground into neighborhoods.

Solar Steps ANSWER KEY

Write a number to the left of each sentence to put the steps in the correct order.

 7 Electrons flow down a transmission line into a substation, where the voltage is greatly reduced.

 5 Metal strips in a solar cell collect flowing electrons and send them down a wire.

 1 The sun shines down on Earth.

 6 Transmission lines, held up by transmission towers, carry flowing electrons at very high voltages across the country.

 3 Sunlight energizes electrons in a solar cell, allowing them to move among the cell's layers.

 10 Electricity enters people's homes and businesses at a usable voltage of 120 volts.

 2 Sunlight hits the top of a solar cell.

 9 Electrons flow down a distribution line into a transformer, where the voltage is reduced.

 4 Electrons in a solar cell flow toward the positive charge of one of the cell's layers.

 8 Distribution lines carry flowing electrons either overhead or underground into neighborhoods.