

Writing about Professions Related to Electricity

Lesson Plan

Grade Level: 9-12

Curriculum Focus: Grammar and Composition

Lesson Duration: One or two class periods

Student Objectives

- Research one of three professions related to electricity.
- Write a story about performing this job.
- Share their ideas with their classmates.

Materials

- Discovery School video on *unitedstreaming: Understanding Electricity*
Search for this video by using the video title (or a portion of it) as the keyword.

Selected clips that support this lesson plan:

- Electricity's Power Part One
- Electricity's Power Part Two Paper and pencils

- Computer with Internet access

Procedures

1. Show students the "Electricity's Power" segment, having them focus on the professions— lightning researcher, scientist specializing in electricity in space, and a lineman.
2. Next, have students choose one profession to research. Their task is to learn about the profession and write a story as if they worked in that field.
3. Give students time in class to work on their stories. The following Web sites are good starting points for their research.

Lightning Researcher

- <http://www.floridaenvironment.com/programs/fe00703.htm>
- http://home.att.net/~amcnet3/fulgurites/uman_conleynajafi.html
- http://www.pr.ufl.edu/we_said.htm
- <http://www.usatoday.com/weather/resources/askjack/walightn.htm>

NASA Research on Electricity

- http://www.space.com/business/technology/space_tether_020306-1.html
- <http://www.spaceflightnow.com/news/n0202/05prosed/>
- <http://www.mufor.org/rch3.htm>
- <http://www.padrak.com/ine/BLOWSNASA.html>

Lineman

- http://www.ci.edmond.ok.us/Electric/elec_crews.html
- <http://www.dailyitem.com/archive/2003/0901/local/stories/05local.htm>
- <http://www.wapa.gov/media/cct/2003/july3/25no141.htm>
- <http://www.trainingtechnology.com/safetytrng/SFTY470.htm>

4. As students write their stories, make sure they include the following:
 - an individual worker's tasks
 - safety precautions
 - accomplishments
 - high points of the profession
5. Encourage students to be as creative as possible. Have them incorporate details about the profession to make the piece exciting or suspenseful.
6. Ask volunteers to share their stories. Try to have all three professions covered in the student presentations.
7. Conclude the lesson by asking students if they realized how many professions involved electricity. Discuss whether the activity broadened their ideas about career options.

Assessment

Use the following three-point rubric to evaluate students' work during this lesson.

- **3 points:** Students participated actively in class discussions; researched a profession thoroughly; wrote an interesting, informative, and creative story.
- **2 points:** Students participated in class discussions; researched a profession; wrote a competent story.
- **1 point:** Students did not participate in class discussions; did not complete research about a profession; did not write a complete story.

Vocabulary

current

Definition: The flow of electricity

Context: A circuit provides a path along which an electrical current can flow.



electrical energy

Definition: Energy associated with the movement of electrical charges

Context: The power of running water can move turbines in a generator, resulting in the production of electrical energy.

electrician

Definition: An individual who has knowledge of electrical systems and who can build and fix electrical systems

Context: During power outages, people often turn to an electrician for help.

lightning

Definition: The dramatic collision of a positively charged object and a negatively charged object that produces an electrical spark

Context: Lightning, or the discharge of an electrical spark, occurs when electrons move from areas of negative charge to areas of positive charge.

lineman

Definition: A specialized worker who sets up and repairs power lines

Context: The lineman, whose job requires climbing on power lines to inspect or repair them, has a difficult and dangerous job.

static electricity

Definition: The type of electricity associated with the accumulation of excess electrical charges on objects

Context: Lightning is the most dramatic example of static electricity, but we usually experience it after walking on a carpet and then touching something containing metal.

Academic Standards

National Academy of Sciences

The National Science Education Standards provide guidelines for teaching science as well as a coherent vision of what it means to be scientifically literate for students in grades K-12. To view the standards, visit <http://books.nap.edu>.

This lesson plan addresses the following science standards:

- Physical Science: Motions and forces; Interactions of energy and matter

Mid-continent Research for Education and Learning (McREL)

McREL's Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education addresses 14 content areas. To view the standards and benchmarks, visit <http://www.mcrel.org/>.

This lesson plan addresses the following national standards:



- Science – Physical Sciences: Understands the sources and properties of energy
 - Language Arts – Viewing: Uses viewing skills and strategies to understand and interpret visual media; Writing: Uses the general skills and strategies of the writing process, Uses the stylistic and rhetorical aspects of writing, Gathers and uses information for research purposes
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Support Materials

Develop custom worksheets, educational puzzles, online quizzes, and more with the free teaching tools offered on the Discoveryschool.com Web site. Create and print support materials, or save them to a Custom Classroom account for future use. To learn more, visit

- <http://school.discovery.com/teachingtools/teachingtools.html>

