

EXPLORING A TEACHING CAREER THROUGH AN ENERGY LESSON

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Overview: Students research energy issues and the need for conservation, develop a lesson plan on energy for elementary students, and teach the lessons at an elementary school.

Objectives:

1. Students identify information on energy and conservation
2. Students will demonstrate the use of various methods of communication
3. Students will research, compose, and orally present information using appropriate technology.
4. Students will analyze the occasion and interests of the audience and choose effective verbal and nonverbal techniques (e.g., voice, gestures, eye contact) for presentations.

Suggested Grade Level: 9 – 12

Subjects: Science, English and Technology

Materials: (May vary due to student's selection of topic and how they wish to create their project)

- Internet access
- Presentation software
- Copy machine
- Laptop computers
- LCD data projectors

PROCEDURE

1. Brainstorm with students to find out what they know about energy and what they think elementary students should know about energy.
2. Form small groups of students (2-3 per group). Each group selects a grade level to target for teaching about energy. Each group must develop a presentation on energy and an activity that supports the lesson on energy. Use national or state science standards that help focus students. Ask students to choose an appropriate standard and then develop a lesson that supports it.
3. Students research energy and develop their presentation.
4. The group must create a script from which each member of the group is able to present the lesson and answer questions.
5. Students present their lesson to the rest of the class for feedback. (Students often assume others will understand just by telling them and using the terminology. The peer evaluations should pose enough questions to establish if the presenter understands what they are teaching. If peer review

does not bring this out the teacher needs to ask questions. If this isn't done, the elementary students will ask questions that the presenter may not be able to answer.) After changes and modifications the lesson should be presented for peer review a second time. (Students appreciate their peers' comments and will improve dramatically from one presentation to the next).

6. The additional activity should also be modeled to ensure that the directions could be followed for a successful experience.
7. When all groups have completed their preparations, contact an elementary school and arrange for a staff presentation by the students to show what the students are offering to teach their students. Have sign up sheets available after the presentation for teachers to choose a time for students to come to their class and present the lesson.
8. The groups are matched with the grade level they created the lesson plan for. Some groups may give their lesson to more than one class.
9. Each group is responsible for presenting their lesson to at least one elementary classroom. They had to set up and take down the laptop and LCD data projector.

RESOURCE: Case Study

1. Many of my students are following a service career path and wanted to teach younger students about energy and conservation.
2. The students divided into groups and each had a different approach as to how they wanted to present the lesson. The students who selected primary grade levels wanted to read a story about energy and created a cartoon presentation to go along with the story. After the story they taught them a game showing how energy travels. This group was highly challenged as upon arrival they found out the class was bilingual. They found themselves working with the teacher as translator. The lesson was still a success. They were informed that this was the only bilingual class and breathed a sigh of relief only to arrive the next day to discover they had a class that was hearing impaired and they had to modify the lesson again to accommodate the teacher who signed the story as they read.
3. Another group selected upper elementary students and presented their lesson along with fun activity sheets the students were asked to finish. The students returned to the elementary classroom to pick up the activity sheets and gave the students who completed the sheets hard candy donated to them for their project.
4. A third group presented to upper elementary students and taught them a song they had written about saving energy. To produce the song the students used the music department and made the recording there. This resulted in the song being sung all over the school. The following year new students to the program came in singing the song before the topic of energy or conservation had been mentioned.
5. Transportation was provided for us by the school district. It was suggested that the elementary principal might be willing to pay for the transportation for the service the high school students were providing to the elementary school. The principal did agree to pay for the transportation.

6. This project worked well and the students really learned a lot about talking about energy. They discovered they had to know about energy to talk about it reliably.
7. We went to the elementary school on three different days and taught 17 different classrooms of students. The students could not miss three days from their other classes so different members of the group went out on different days. The elementary teachers were pleased and the elementary students really looked up to the high school students. The teachers that were off track were disappointed we could not make it back when they returned to school.
8. The students completed several different projects during the year. Teaching the elementary students about energy turned out to be their favorite activity and the one they still talk about.