

LESSON PLAN, UPPER ELEMENTARY.

Author: Marge Wood

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Approximate time needed: five classroom periods, about one hour each. Teachers may feel free to adapt to their needs as long as it is not distributed under their names elsewhere. All rights reserved.

Here is a lesson plan for upper elementary – middle school teachers to use as a multidisciplinary teaching tool. The assignment is for students to make, individually, or as teams, a brochure and a follow-up analysis page for students to answer. The idea is that instead of field TRIPS, students should have field RESEARCH EXPERIENCES. This is age-appropriate for upper elementary students to use as they learn how to study renewable energy from the standpoint of a news reporter or a concerned citizen. They will also have fun approaching it as an art and/or journalism project. It should make a nice display when all the brochures are completed.

RESEARCH, ANALYSIS, WRITING, EDITING, LAYOUT

meets English- language arts requirements for TEKS standards for 5.6.C, 5.8.B, 5.9.E, 5.18, A-G, 5.19, A-I, 5.20, B-D. It meets TEKS social studies requirements for TEKS 6.A, 13.B.

Materials required for class: note-taking material (may be cameras, camcorders, computers, paper and pencils)

Material required for individual student: one or more travel brochures, one or more maps, paper, pencils and rulers, library access, portfolio of some sort for keeping materials together, scissors, glue stick—may all be done on computers if sufficient experience and equipment is available.

Teacher to Students:

Day One:

You are going to take a group of friends to visit a place which generates electricity using wind, the sun, biomass or water. (Note: this site may be virtual or actual. Actual is better, but if you chose a wind farm, for example, it would be more difficult to visit one, most likely, than a solar electric installation. For more information on such sites, you might look at www.txses.org and find links to such locations, or call your local utility.) You need to prepare a small brochure for them to read first, so that they can benefit more from their visit. Here are some things which will help them most. Think about how you want to present this. You will need to give the following information:

Title of site

Location of site

Small map with MAJOR highways and streets, landmarks, distance (small map)

Type of energy producer (wind, solar, biomass)

Very short history of site

Contact person and information (phone, mailing address)

Hours open
Policies (for example: are cameras allowed?)
Major funding (for example: Austin Energy, Department of Energy)
Other credits, such as who produced and printed it, etc.
Small photo(s) if possible

Analysis and evaluation during and after the tour:

Second sheet to be given out with brochure, or included if possible, will ask the following questions.

What type of equipment is used?
Where is it installed?
What is it made of?
What condition is it in? Does it look fairly new, or very worn?
What does the equipment do?
Can some other equipment do the same thing?
Why is this equipment generating electricity at this site?
What would make the equipment work better or best? (example: remove trees around it, put on higher tower or roof, make building more energy-efficient)
Why did you choose this particular type of electricity generation for your project?
Where did you do your research? Name at least three types of information found. (For example: in a book or encyclopedia, in a periodical like a newspaper or magazine, on the Web, in an actual visit.)
What do you remember best about the field work and tour?

Choosing teams to do research, design and development of the brochure:

Unless the class is very small, there will probably be several teams developing brochures. If the class is small, each student can do one. Teams need to be chosen on the first day, and each team needs to decide the function of each member. **Each student needs to do some of the research, otherwise (s)he will have a hard time imagining what needs to be done. Each one needs to take some notes as research is done.** Each group needs to choose the type of renewable energy, such as wind, solar, and biomass, on the first day.

Day Two:

Decisions you must make:

Look at a couple of existing brochures such as you might get at a travel agency or a library. Which ones do you like best? Which are easiest to read? Which one(s) could you adapt the layout and folds best for this project? Where would you put the map, the text, the photos?

Paper size

How many folds, or not folded at all? Single fold, double fold, triple fold
Black and white or color? (note: black and white is less costly)

Possible team members:

Lead researcher (keeps all notes from everyone, or copies of, and coordinates whole group)

Historian (Studies history of renewable energy and why certain type is best for site)

Layout/graphics designer (Researches and suggests type of paper, number of folds, layout of graphics and text)

Computer guru (May be same person as layout)

If very large class, may double up on each position, or have more teams.

Gathering, writing and collating parts of project:

Lead researcher/writer(s) start writing text and editing it. Must work closely with historian.

Historian needs to keep watching for accuracy of information.

Layout/graphics person collaborates with writer(s) to see that text, map and pictures will fit onto paper size with fold types as chosen.

Computer guru needs to be working with layout person so that as information is entered, it will fit the columns. Will scanner be used, or a digital camera?

Day Three:

Continue to work on project. Either paste up parts of it, or do a rough draft on the computer. It should start to look like something by now. Experiment with folding so that it will come out looking right.

Day Four:

Wind up project. Edit. Print out and see if it looks right. Make several copies and fold neatly. If not, find errors and work it over.

Day Five:

Print out projects. Fold. Make several copies so each person may edit and discuss. It may take two or three days to finish the final work, especially if there aren't many printers.

DISPLAY! This will look nice on a big bulletin board when all the brochures are pinned up with colored borders around the edge of the bulletin board.