Agriculture and Commercial Water Use

Grade Level: Grades 6-8 and can be adapted to secondary

Time: 3-4 weeks

Concept: Renewable and Non Renewable Resources

Generalization: Water is a valuable nonrenewable resource. This lesson will help students develop an understanding of their environment. Students will learn about the connection between the business community, water issues and our environment. Students will research information, write note cards, and use the information to write a research paper.

Objective: Students will:
1) gather and correlate information using a variety of resources.
2) organize information into an outline form.
3) acknowledge resources and prepare a research paper.

Materials:
- index cards
- paper
- pencils
- research material using a media center
- internet
- envelopes and stamps for letter writing

Procedures:
Initiating Activity:
1. Discuss the importance of water as a nonrenewable resource.
2. Use the water poster to get discussion information about agricultural and/or commercial water usage.

Strategies:
1. Students will decide on the commercial or agricultural company that they are interested in researching.
2. Students will discuss what it is about the company’s water usage that they are interested in learning about and brainstorm ways to acquire the needed information.
3. Hand out the research information sheet and have a question and answer time to clarify any concerns.
4. Students will write to the company of their choice to gain insight to the water issues and concerns of that company.
5. Once topics have been chosen, brainstorm ways that information can be found. As the topic is researched, students will want to copy important facts to use in their report. Teach the guidelines for making note cards:
a. Use a separate 3 x 5 note card for each fact or idea.
b. Take notes in your own words. Do not copy sentences directly from the source. It is not
acceptable to use another writer’s work word for word unless it is properly documented. If you want to use an author’s words exactly, use quotation marks. Write the page number from where you took the notes.

c. Make a separate “source card” for each source you use. On this card, write down the following information when you list your sources:

Book:
Author’s last name, first name. Title. Place of publication: Publisher, date published.

Magazine:
Author’s last name, first name. “Title of article.” Title of magazine. Date: page number(s).

Encyclopedia:
“Title of article.” Title of Encyclopedia. Volume number. Place of publication: Publisher, date.

Online Computer:
Follow the format recommended by the online computer information service.
“The Real Price of Water.” Britannica’s Online Encyclopedia. Download from America Online. 5 May 1998

Culminating activity:
Students will orally present finished paper to the class. Papers will be placed in a viewing area, for example, the media center, for other students to look at. Invite people from the business community to listen to presentations and give feedback. This event could be set up as a community forum or as a debate. Invite the media.

Evaluation: Teacher observation, note cards, written report will be orally presented.
Final grade will include a combination of scores from written and oral work, and teacher observation.

National Geography Standards:
Standard 2: Students know and understand how to use mental maps to organize information about people, places and environments in a spatial context.
Standard 16: Students know and understand the changes that occur in the meaning, use, distribution and importance of resources.

Sunshine State Standards:
SS.B.1.3.2: uses mental maps to organize information about people, places, and environment.
SS.B.1.3.5: knows ways in which the spatial organization of a society changes over time.
SS.B.1.3.6: understands ways in which the regional systems are interconnected.
SS.A.2.3.3: understands important technological developments and how they influenced human society.
SS.A.1.3.2: knows the relative value of primary and secondary sources and uses this information to draw conclusions from historical sources such as data in charts, tables and graphs.
SC.D.2.3.2: knows the positive and negative consequences of human action on the Earth’s systems.
SC.G.2.3.1: learning that some resources are renewable and some are nonrenewable.

LA.A.2.3.5: locates, organizes, and interprets written information for a variety of purposes, including classroom research, collaborative decision making and performing a school or real world task.

LA.A.2.3.6: uses a variety of reference materials, including indexes, magazines, newspapers, and journals; and tools, including card catalogs and computer catalogs, to gather information for research topics.

LA.B.1.3.1: organizes information before writing according to the type and purpose of writing.

LA.B.1.3.3: produces a final edited document.

LA.B.2.3.1: writes text, notes, outlines, comments, and observations that demonstrate comprehension of content and experiences from a variety of media.

Resources:
Most companies have educational outreach programs that provide speakers.

Books:

Web sites:
http://www.dogpile.com
http://www.askjeeves.com
good geography and science search sites
National Geographic Society
http://nationalgeographic.com/gaw
lesson plans for Geography Awareness Week

Southwest Florida Water Management District
2379 Broad Street
Brooksville, Fl. 34609
800-423-1476
http://www.swfwmd.state.fl.us
virtual watershed excursion, free teacher materials, Splash (intermediate lesson plans)
excellent educational outreach program

South Florida Water Management District
http://www.sfwmd.gov
student corner, free materials, great environmental information

St. John’s Water Management District
http://sjr.state.fl.us
general information/water resource education, free materials
US Geological Survey
http://www.usgs.gov
great posters, information on maps, water monitoring stations data

Where is your company?
Check it out on http://www.terraserver.com

Florida Department of Environmental Protection (DEP)
Bureau of Aquatic Plant Management
3917 Commonwealth Blvd. MS# 710
Tallahassee, Fl. 32399-3000
http://www.dep.state.fl.us
current environmental issues, park information, water data

Florida Institute of Phosphate Research
1855 W. Main St.
Bartow, FL  33830
Telephone: 863-534-7160
http://www.fipr.state.fl.us
excellent educational outreach program, information on all phosphate companies, free materials, speakers, lesson plans available

Florida Citrus Research
http://www.fl-citrus-mutual.com
links to newspaper articles and industry links
Florida agricultural links from this site

http://www.floridaplants.com
information on sustainable agriculture and an online search
brittanica.com search from this site

Florida Department of Citrus
PO Box 148
Lakeland, Fl. 33802
http://www.floridajuice.com
citrus related links, market and research information, scientific research, news and information
Research Paper Outline

I. Introduction
A. Hook sentence (An interesting quote, fact, or statement that grabs the interest of the reader)

_______________________________________________________________________
_______________________________________________________________________

B. Thesis statement (A general statement that gives an overview of the paper.)
Ex: Everyone needs water, but the phosphate industry has some unique usages for this important natural resource. DO NOT write, “I am going to tell you about...” or “in this paper I will write about...”

_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________

C. Map sentence (State the three topics you have chosen to write about in the body of paper)

_______________________________________________________________________
_______________________________________________________________________

II. Body (For each paragraph follow the TREEES format. Do not write complete sentences for the outline. Use abbreviations and fragments.)
A. Write topic
1. Topic sentence________________________________________________________
2. Reason _____________________________________________________________
3. Elaboration/Explanation_______________________________________________
4. Example _____________________________________________________________
5. Elaboration of example________________________________________________
6. Summary statement____________________________________________________
B. Write topic
1. Topic sentence________________________________________________________
2. Reason _____________________________________________________________
3. Elaboration/Explanation_______________________________________________
4. Example _____________________________________________________________
5. Elaboration of example________________________________________________
6. Summary statement____________________________________________________
C. Write topic
1. Topic sentence________________________________________________________
2. Reason _____________________________________________________________
3. Elaboration/Explanation

4. Example

5. Elaboration of example

6. Summary statement

III. Conclusion (Suggested endings: personal reflection, recapping of thesis statement or quote)
Research Paper Directions

1. Choose a company to research.

2. Research the company and its use of water, for example, the amount of water it uses, methods of conserving water, is water usage a top priority of the company, etc.
Due date_________________________

3. Complete the outline - use format given by teacher.
Due Date_________________________

4. Write a draft.
Due Date_________________________

5. Peer editing - use form given by teacher.
Due Date_________________________

6. Rewrite the paper making changes based on your peer editing. Use blue/black ink or type using double spacing. Write on one side of the paper only.

7. Turn in the outline, draft, and final copy. Put a cover sheet on top that has the following elements:

Due Date_________________________

Title:
Student Name:
Date:
Block: