8th Grade Louisiana History Lesson Plan

Baton Rouge Ground Water

Essential Question: Can Baton Rouge water be conserved or sustained rather than saved?

Objectives:

1. Students will list the sources for available drinking water.

2. Students will describe the water cycle and its impact on Baton Rouge drinking water.

3. Students will explain the impact of saltwater intrusion on the availability of drinking water in the Baton Rouge area.

4. Students will create a unique solution to the problems facing Baton Rouge's drinking water supply.

Louisiana History GLEs:

7. Explain how or why specific regions are changing as a result of physical phenomenon

15. Analyze the benefits and challenges of the LA physical environment on its inhabitants

17. Identify a contemporary LA geographic issue and research possible solutions

Vocabulary:

ground water, saltwater intrusion, aquifer, water cycle

Anticipatory Set:

Ask students to list as many ways as they can think of that they use water daily. Allow students to share their list with a shoulder partner. Have volunteers share responses with the class and create a class list on the board. Next, have students hypothesize what life would be like if there was no easy access to clean drinking water (it was hard to obtain or in short supply). Have students share their hypothesis with a shoulder partner and then discuss as a class.

Additional information for discussion:

· At least 11% of the world's population—783 million people—are still without access to safe drinking water.

· 1.4 billion people live without clean drinking water, Only 20% of the world population enjoys access to running water!

· At least 1 billion people must walk 3 hours or more to obtain drinking water.

· More than one-third of Africa, population lacks access to safe drinking water

· More than 130 million people in Latin America and the Caribbean lack access to safe drinking water

· Dirty water kills more children than war, malaria, HIV/AIDS and traffic accidents combined.

· Despite being the most common substance on earth, 97% is seawater and unfit for human use. Two thirds of the fresh water is locked up in glaciers leaving only 1% of the earth's water for human consumption.

Sources of information:

http://www.foodandwaterwatch.org/water/interesting-water-facts/

http://www.theworldwater.org/water_facts.php

Teacher Instruction:

PowerPoint to provide background information to students about the groundwater issues in Baton Rouge. Also, show students Office of Conservation Water-wise in BR website (http://waterwise.dnr.la.gov).

Student Activities:

1. Vocabulary awareness- Have students complete the vocabulary word map sheet prior to the start of the lesson. This sheet contains the key terms students will encounter during the lesson. Students will complete one word map for each of the four terms. This will make students think about the word in a variety of ways.

2. Water cycle and water supply RAFT– Place students into small groups. Provide each group with a copy of the water cycle (image from USGS provided), the Southern Hills aquifer system image (http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=1034&pnid=21&nid=27) and the article, "Groundwater Storage and the Water Cycle." Groups will create a list of the sources that could be used by Baton Rouge Water Company to make drinking water (they should determine drinking water can come from area rivers or from groundwater). Groups will also hypothesize the impact of the Baton Rouge fault on salt water intrusion into the groundwater using the groundwater distribution image and the Louisiana Geographical Society information provided. Have the group complete a RAFT (see attached RAFT assignment sheet). The students will create an illustrated story showing the life of a drop of water as it moves through the water cycle and the water supply in the Southern Hills Aquifer. Allow students to present to the class.

3. Getting the salt out- Students will read and discuss the article, "New Tool Arrives to Fight Saltwater Intrusion." The article offers several possible solutions to the issues facing Baton Rouge drinking water. Have students discuss the pros and cons of these suggestions. Compare what the report said with the information on the Water-wise in BR website

(http://waterwise.dnr.la.gov). In small groups, have students look at various websites that deal with saltwater intrusion issues in Baton Rouge. To keep students focused, use the Trackstar (http://trackstar.4teachers.org/trackstar/ts/viewTrack.do?number=455080) and have students view in frames. This trackstar contains links to eight websites that will provide students with information about the issues surrounding the Southern Hills Aquifer. After completing their research, have the groups write a letter to the their state legislators and metro council members proposing action that needs to be taken to help solve the issues surrounding saltwater intrusion into Baton Rouge drinking water. Students should create a rubric to evaluate the letters (this may include grammar, how realistic the proposed solution is, etc…). NOTE: The letter should be written only as an activity and does not need to be sent to state legislators or metro council members.

Closure:
Have each student draw a political cartoon to describing the challenges facing Baton Rouge drinking water and the impact on the residents