How Big and How Much: Comparing Florida’s Rivers

Grade Level: upper elementary/middle school

Time: 1-2 class period

Selected Concepts:
Discharge
Runoff
Drainage Basin
Water Management Districts

Objectives: Students will:
1. examine and understand the size of Florida’s Rivers on a world scale.
2. recognize the importance of our rivers.
3. understand the importance of managing our rivers.
4. examine the role runoff plays in the health of our fresh water supplies.

Content:
If you look across the St. Johns River as it discharges (water flows out into) to the Atlantic Ocean, you may perceive it to be a large river. If you compare its discharge to the discharge of the major rivers of the world, you realize just how small it is. (see graphic on the poster or blackline masters) Although the rivers in Florida may only have a fraction of the flow of the world’s largest rivers, they are very important resources for our human and wildlife populations. The rivers of Florida are vital for transportation, fresh water, irrigation, etc.

Runoff is an important concept to understand when studying rivers. Runoff is calculated by subtracting the amount of water that soaks into the ground, the amount retained in the soil and used by plants, and the amount that evaporates from the total rainfall. Climate, slope, geology, and land use all influence runoff.

Materials:
2001 Rivers Poster (specifically the large Florida map and the two graphics on comparison and runoff)
Blackline master of Comparison
Blackline master of Runoff
Blackline master of blank map of Florida

Procedures:
Initiating Activity: Make an overhead transparency of each of the graphs on Comparison and Runoff in the blackline masters. Show them to the class and ask them to give their opinions about the graphs and make a list of questions they might ask in order to better understand them.
**Strategies:**

1. Using the river poster map of Florida, have the students discuss the location and size of the rivers mentioned on the graphs.

2. Have students label the blank map of Florida (found in the blackline masters) showing each of the rivers mentioned on the graph. Have students locate, shade and label the major areas of human populations. Then discuss the use of this physical region. Include: recreation, transportation, esthetic activities, and tourism. Include any others the students might suggest. Ask students to examine the Runoff graph and their maps. Pose the question of what would the Northwest need to do differently than the other drainage basins? Which drainage basin has the most human activity? Which one has the most agricultural activity? Which one has the most industrial activity? (Remind them to think about land use and where the populations are found and that different human activities use the rivers in different ways.)

3. Discuss the size of these rivers as compared to the World’s largest rivers. Keep in mind that it is important to realize that although the rivers are small on a world scale they are extremely important when it comes to providing fresh water resources and must be protected.

**Culminating Activity:**

Pose the following question to the students: What is the percentage of cubic feet per seconds (cfs) would the Suwannee River be of the world’s largest river, the Amazon? How much does the percentage decrease when looking at the discharge of the St. Johns River? (Students will have to first calculate the percentage for the Suwannee first then the St. Johns and then subtract that amount from the Suwannee percentage to get the percentage decrease.) Then have the students discuss why it is so important to keep a small main river clean than a large discharge river. (Have students think about less water flowing, means less water to dilute the pollutants)

**Evaluation:**

Student discussion, charts and finally their maps.

**National Geography Standards:**

Standard 1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.

Standard 7: The physical processes that shape the patterns of the Earth’s surface.

Standard 8: The characteristics and spatial distribution of ecosystems on Earth’s surface.

Standard 15: How physical systems affect human systems.

**Sunshine State Standards:**

SS.B.1.3: The student understands the world in spatial terms.

SS.B.2.3: The student understands the interactions of people and the physical environment.