Recreational Irrigation

Grade Level: Secondary

Time: 90 minute block or two 45 minute blocks

Concept: Do we have ample water to use for recreational irrigation?

Generalization: The term recreational irrigation is limited to the water used to irrigate golf courses, nonresidential lawns, cemeteries and playing fields.

Objectives: Students will:
1) research the issue of recreational irrigation and to debate the issue.
2) demonstrate ability to work cooperatively within a team.

Materials:
Water Management District materials on water usage
Florida DEP water usage materials

Background Information:
Recreational irrigation water use includes withdrawals for the artificial application of water on lands to assist in the growing of turf grass or shrubbery. Turf grass includes golf courses, nonresidential lawns, cemeteries, and parks or playing fields. Water withdrawal amounts for this category are estimated based on acreage irrigated multiplied by a crop coefficient generated by selected irrigation models. A small percentage of the water use estimates for this category were derived directly from measured (metered) data.

Recreational irrigation is a new water use category for 1995. In previous years, recreational irrigation was accounted for under the agricultural self-supplied category. Prior to 1985 water withdrawals and acres irrigated for turf grass were included under other crops, but for 1985 and 1990 turf grass values were specifically identified under agricultural self-supplied.

In 1995, 281 mgd (million gallons per day) of freshwater was withdrawn for recreational irrigation with an additional 154 mgd being obtained from reclaimed water. Withdrawals increased 54 percent from 1985, but decreased 9 percent from 1990. Nearly 70 percent of the water withdrawn for recreational irrigation was groundwater, while 30 percent was surface water.

An estimated 93,000 acres were irrigated at nearly 1,100 golf courses throughout Florida in 1995. This is an increase in acreage of about 26 percent from the 74,000 acres irrigated in 1985. The average 18-hole golf course in Florida irrigated about 80 acres or about 4.5 acres per hole in 1995.

Golf course irrigation is the largest user of water in this category, accounting for 67 percent of the withdrawals and 64 percent of the reclaimed wastewater used.

The largest amount of water withdrawn for recreational irrigation in 1995 was in Palm Beach (67 mgd) and Broward (53 mgd) counties. Pinellas County used 40 mgd of reclaimed water for recreational irrigation purposes in 1995.

Monthly withdrawals for recreational irrigation had a large seasonal variation in 1995. Withdrawals were greatest in March through October and lowest in December through February.
Procedure:

Initiating Activity:
1. Introduce the concept of recreational irrigation.
2. Select a student who likes to golf and is in favor of building a new golf course for a new upscale development in your town.
3. Select one student who is the mayor of your town who has worked hard to encouraged the developer to choose your town.
4. Select one student who is from the local water management district.
5. Finally, select one student who is an ardent conservationist/environmentalist.
6. Assign them to research the topic and discuss the need for this development with a golf course.

Strategies:
1. Students will create the rubric to determine the grade for the participants in the discussion/debate.
2. Students will have access to water management district and Florida DEP information regarding water usage rates in your area.
3. Students will research and plan for a debate/discussion where they will put forth their proposals and defend them from opposing views.

Culminating Activity:
Students will present their portion of the discussion, and defend their views.

Evaluation:
Class will vote on the most persuasive presentation and grade the participants using the rubric created by the class.

National Geography Standards:
Standard 1: The student knows how to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.
Standard 2: The student knows how to use mental maps to organize information about people, places, and environments in a spatial context.
Standard 12: The student knows the process, patterns, and functions of human settlement.
Standard 14: The student knows how human actions modify the physical environment.
Standard 18: The student knows how to apply geography to interpret the present and plan for the future.

Sunshine State Standards:
SS.B.2.4.1: The student understands how social, cultural, economic and environmental factors contribute to the dynamic nature of regions.
SS.B.2.4.5: The student knows how humans overcome “limits to growth” imposed by physical systems.
SS.B.2.4.6: The student understands the concept of suitable development.