Student Debate:
Population Growth as an Underlying Cause of Environmental Degradation

Current projections suggest that the human population may reach more than 10 billion people sometime in the next century before finally leveling off. Many people believe that the unprecedented numbers of people inhabiting the Earth represent a grave threat to the environment while others believe that the relationship between population growth and environmental problems is more complicated. This debate will familiarize students with the major arguments concerning population growth and its relationship to economic development, resource use, and environmental degradation.

HYPOTHESIS:
Human population growth is directly responsible for environmental degradation.

Primary Learning Outcome:

- Gain a better understanding of the causes and consequences of a rapid population growth and the importance of this growth in transforming the environment.

- Explore the following questions: Is population growth really something about which we should be concerned if we care about the environment? Or does it simply distract us from the real causes of environmental degradation and shift blame to poorer people? How can we feed the increasingly large population in a sustainable fashion? How can we develop our economy and improve people's livelihood in a sustainable fashion?

Additional Learning Outcomes:

- Research techniques will be reinforced through use of internet and library resources
- Public speaking skills will be improved
- Students will develop better comprehension and communication skills

Georgia Performance Standards:

SCSh1. Students will evaluate the importance of curiosity, honesty, openness, and skepticism in science.
SCSh3. Students will identify and investigate problems scientifically.
SCSh6. Students will communicate scientific investigations and information clearly.
SEV4. Students will understand and describe availability, allocation and conservation of energy and other resources
SEV5. Students will recognize that human beings are part of the global ecosystem and will evaluate the effects of human activities and technology on ecosystems.

Total Duration:

- **One half hour lecture** (introduce terms such as carrying capacity, mortality, natality (birthrate), etc. as well as outline the debate format)
- **One hour library/internet time** (allow students to pursue their own research; optional)
- **One hour forum**

Materials and Equipment:

- *None*

Technology Connection:

- Internet access

Procedures:

Step One

The attached articles should be distributed to students for reading. It is optional for students to search for additional materials online that relate to the population growth debate. They should seek articles that are within their reading level and read them thoroughly. All articles should be approved by the instructor.

Estimated Time:

Depending upon the amount of time available, this step can take from one to several hours.

Lesson Materials to be Attached:

Attached are several articles pertaining to human population growth.

Step Two

Articles obtained by the instructor (attached) should be copied and distributed. Students should read them thoroughly enough to cite them if asked, i.e., students should be able to relate an author to a main idea. Also, if they provide a specific fact (such as a numerical value) they should be required to cite the source. For example, John Smith in 1989 stated…

Step Three

On the day of the debate/forum, students should be divided into two groups. Each person in each group will be expected to answer at least one question posed by the instructor. Groups should decide upon a leader to help structure the individual response, if necessary. The instructor will pose a referenced question (consider what John Smith said in his1989 paper…) based upon the required reading to the student and students will be given a minute or so to prepare a response. A point is awarded for the first correct response. If the full time allotted is required and both teams answer correctly, both teams score a point (a tie is possible). The team with the most points at the end of the forum is declared the winner.

Assessment:

Each student could compose a brief position paper about the topic, "Human population growth is directly responsible for environmental degradation" using the reading material as reference. Although the debate is conducted as a group activity, each individual student is responsible for reading the material and preparing his or her own paper.

Extension:

Additional debates or forums could be conducted with more specific topics regarding human population growth. For example, students could consider one specific aspect of the problem, such as China's solution of placing a limit on the number of children each family could have. Students could also set the topic of their own choosing based upon what they have read.