

## Environmental Science Chapter 11, Biofuels and Green Consumerism: Study Guide

### Section 3

- Definitions

Solar energy

Solar water heating

Geothermal energy

Passive solar heating

Solar cells

- Know at least three ways in which you personally can conserve/save energy
- Know the ten types of energy sources (including nuclear and fossil fuels) – advantages and disadvantages and technology available
- Know the differences between passive solar heating, active solar heating and solar cells as well as the advantages and disadvantages of each
- Know the Case Study *A Super-Efficient Structure*

### Section 2

- Definitions

Nuclear energy

Nuclear fission

Nuclear fusion

- Know what nuclear energy is and what the difference between nuclear fission and fusion is
- Know how nuclear fission works and what it results in
- Know an example of nuclear fission
- Know how nuclear fission can be controlled to create usable energy
- Know the advantages and disadvantages of nuclear energy
- Know the three main nuclear disasters (two in the former Soviet Union, and one in the US)
- Know the advantages and disadvantages of nuclear fusion

### **It's Scary. It's Expensive. It Could Save the Earth. Nuclear Power Risking a Comeback article**

- Know the main points of the article
- Know what led to the dismantling of nuclear energy power plants in the 1970s and 1980s in the US
- Know why some environmentalists are praising nuclear energy as an eco-friendly alternative to fossil fuels
- Know the main disadvantages of nuclear energy
- Know what nations besides the US are looking into/ already have nuclear power plants in operation
- Know what some of the concerns are in allowing certain countries to have nuclear power plants
- Know what the generation IV machines are and what could they possibly do

### **Green Dreams article**

- Know the main points of the article
- Know what biofuels are as well as their purported advantages and disadvantages
- Know what biofuels can be made from and advantages and disadvantages of each

- Know how the ethanol/biofuel industry has fared over the last century starting with Henry Ford
- Know what E85 is
- Know how ethanol is used
- Know how the burning of fossil fuels is required for the production of biofuel
- Know what biogas is and how it is being used to circumvent some use of fossil fuels in the production of biofuel
- Know what is so important about Brazil in terms of biofuels and fossil fuel usage
- Know what the VW TotalFlex is and how it could revolutionize the industry
- Know what agricultural product Brazil's cars run on and its advantages and disadvantages
- Know how making of biofuels can not affect the food supply
- Know how algae may be the answer to our growing need for fuel

### **The Coal Paradox article**

- Know the main points of the article
- Know the advantages and disadvantages of burning coal
- Know why coal burning plants are being built in demand for energy
- Know what the mining of coal can do the US landscape
- Know the advantages and disadvantages of installing a carbon-capturing device on a coal-burning device
- Know what syngas is and how burning it is different than burning coal
- Know the advantages and disadvantages of gasification technology

### **Ten Simple Things You Can Do to Go Green Article**

- Know the main points of the article
- Be able to list at least three examples as to what you can do to go green and why they help curb global warming

### **Group's Rejection of Consumerism Is Catching On**

- Know the main points of the article
- Know what the purpose of the Compact was and why it was created
- Be able to describe some of the items that Compact members are allowed to purchase

### **Making a Difference: Environmental Activist article (pages 300-301)**

- Know the main points of the article
- Know how people, such as Bob Geyer get involved in environmental activism
- Know what environmental activists do
- Know some of the problems that environmental activists may face