

## 4.1 Energy and Mineral Resources

### A. Renewable and Nonrenewable Resources

1. What makes a resource 'renewable'?
2. List three renewable resources.
3. What are some 'nonrenewable' resources?
4. What propaganda statement is made in this section regarding the United States? What does this statement ignore about God?

### B. Fossil Fuels

#### 1. Coal

Where are the largest bituminous coal deposits on the United States?

What general 'tone' is presented in the text regarding the use of coal as a fuel?  
Use an example to support your statement

#### 2. Petroleum and Natural Gas

What is thought to be the source of petroleum and natural gas?

What is an oil trap?

### C. Tar Sands and Oil Shale

What propaganda statement is made about world petroleum supplies?

What is tar sand?

How are tar sands treated to release oil?

What are bitumen and kerogen?

#### D. Formation of Mineral Deposits

##### 1. Mineral Resources and Igneous Processes

What makes something an 'ore'?

What are some valuable metallic mineral resources?

Where do mineral deposits form by igneous processes?

##### 2. Hydrothermal Solutions

What is a 'hydrothermal solution'?

What are some important hydrothermal deposits in the United States?

##### 3. Placer Deposits

How do placer deposits form?

Which metal is commonly found as a placer deposit?

When and where was the Welcome Stranger Nugget found?

#### E. Nonmetallic Mineral Resources

List three uses of limestone.

Which mineral is used in paints and cosmetics?

## 4.2 Alternate Energy Sources

### A. Solar Energy

1. What is the name of our star?
2. Why is solar energy thought to be advantageous?
3. List some of the weaknesses in using solar energy.

### B. Nuclear Energy

1. What is fission?
2. How is fission used to generate usable power?
3. Why has nuclear power not been developed in recent years?

### C. Wind Energy

1. Why is wind power controversial?
2. What are the two main factors required for reliable wind power?

### D. Hydroelectric Power

1. How is most hydroelectric power produced?
2. How is sediment a problem for hydroelectric power?

E. Geothermal Energy

1. How is electricity produced using geothermal energy sources?
  
  
  
  
  
  
  
  
  
  
2. Why is geothermal energy not used extensively throughout the world?
  
  
  
  
  
  
  
  
  
  
3. Name a location in the United States that generates power using geothermal energy.

F. Tidal Power

1. How can a tide produce usable energy?
  
  
  
  
  
  
  
  
  
  
2. What are the physical requirements for efficient use of tides for energy?

Summary Questions

1. Which alternate energy resources are renewable?
  
  
  
  
  
  
  
  
  
  
2. Which alternate energy resources are available in southern Minnesota?
  
  
  
  
  
  
  
  
  
  
3. Why are alternate energy resources not used more extensively?

### 4.3 Water, Air, and Land Resources

#### A. The Water Planet

1. What are common uses that people have for 'fresh' water?
2. What is point source pollution?
3. How does runoff affect freshwater supplies?
4. How can fish concentrate poisons?

#### B. Earth's Blanket of Air

1. What is the chemical composition of air in the atmosphere?
2. What are 'greenhouse' gases?
3. Which gas has the biggest greenhouse effect?
4. What does ozone do for the earth, and what is the big concern?
5. How does carbon dioxide recycle in the atmosphere?
6. What is 'global warming'? What causes it?
7. What are CFC's, and how are they thought to affect ozone?

C. Land Resources

1. What are four land resources?
2. How has mining affected land resources? (Good and bad)
3. What is salinization and how can it be caused?
4. Describe clear-cutting and its potential negative effects

Summary Questions

1. If the earth is almost  $3/4$  covered with water, why is a supply of fresh water a concern?
2. How long has the 'ozone hole' been a concern to scientists?
3. Why do many people panic at the thought of 'global warming', 'ozone depletion', the 'loss of forests', etc.?

#### 4.4 Protecting Resources

##### A. Conservation of Resources

1. Why do we conserve our natural resources?

2. List points of propaganda from page 113.

##### B. Keeping Water Clean and Safe

1. What is the CWA and when was it passed?

2. What is the SDWA and when was it passed?

##### C. Protecting the Air

1. What are the NAAQS?

2. Which gases are regulated by the NAAQS?

3. Give an example of a misleading idea relating reducing pollution and conservation.

### C. Caring for Land Resources

1. What farming methods are used to conserve soil and reduce pollution?
2. What advantages exist for selective cutting in a forest?
3. What is compost?
4. What products are commonly recycled in Minnesota?
5. Why might conservation not automatically translate into less pollution?  
Give an example.