**(AP) ENVIRONMENTAL SCIENCE 2022-23 March 27, 2023**

**Today’s Agenda (Day 132)**

1. Housekeeping Items

🡪 BRING:

1. Homework Check:

🡪 Chapter 15 Reading Guide

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1. Class Activity:

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🡪BEGIN: Chapter 16 PPT Review

1. **Section 16.1 – The Atmosphere**
2. **Section 16.2 – Pollution of the Atmosphere**
3. Section 16.3 – Categories of Air Pollutants
4. Section 16.4 – Photochemical Smog
5. Section 16.5 - Acid Deposition
6. Section 16.6 – Ozone Depletion
7. Section 16.7 – Control of Air Pollution
8. Section 16.8 – Air Pollution in the Developing World
9. Section 16.9 – Indoor Pollution
10. Section 16.10 – Noise Pollution

HOMEWORK:

* READ: Chapter 16 – Air Quality Issues
* COMPLETE:
* **STUDY**: Chapter 15 & 16 Vocabulary and Ch 16 Test

REMINDER**~~:~~**

* QUIZ: Ch 15 & 16 Vocabulary 🡪Mar. 30
* **TEST: Ch 16 & 17 🡪 April 4**
* **TEST: Ch 18 🡪 April 11**
* QUIZ: Ch 17 - 19 Vocabulary 🡪April 13
* **TEST: Ch 19 🡪 April 18**

Chapter 15 Vocabulary

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| --- | --- | --- | --- | --- | --- |
| Activated-sludge sewage treatment | Aquiclude | Aquifer | Aquitard | Artesian wells | Biochemical oxygen demand (BOD) |
| Confined aquifer | Domestic water | Eutrophication | Evapotranspiration | Fecal coliform bacteria | Groundwater |
| Groundwater mining | Hydrologic cycle | In-stream water use | Industrial water use | Irrigation | Limiting factor |
| Nonpoint sources | Point source | Porosity | Potable water | Primary sewage treatment | Runoff |
| Salinization | Saltwater intrusion | Secondary sewage treatment | Semiconfined aquifer | Sewage sludge | Stormwater runoff |
| Tertiary sewage treatment | Thermal pollution | Trickling filter system | Unconfined aquifer | Vadose zone | Water diversion |
| Water table |  |  |  |  |  |

Chapter 16 Vocabulary

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| --- | --- | --- | --- | --- | --- |
| Acid deposition | Acid rain | Carbon monoxide | Criteria air pollutants | Decibels | Hazardous air pollutants (air toxics) |
| Hydrocarbons | Nitrogen dioxide | Nitrogen monoxide | Nitrogen oxides | Ozone | Particulate matter |
| Photochemical smog | Primary air pollutants | Radon | Secondary air pollutants | Sulfur dioxide | Thermal inversion |
| Volatile organic compounds (VOCs) |  |  |  |  |  |

**(AP) ENVIRONMENTAL SCIENCE 2022-23 READING GUIDE**

**CHAPTER 16**

**Review Questions**

1. Name the two primary gases in the atmosphere.

2. Describe two ways the gases in the troposphere differ from those in the stratosphere.

3. Describe two ways the atmosphere can get rid of pollutants.

4. List the five primary air pollutants commonly released into the atmosphere and their sources.

5. List the six criteria air pollutants, their sources, and their effects.

6. Define secondary air pollutants and give an example.

7. How is each of the following involved in the production of photochemical smog: volatile organic compounds, nitrogen oxides, thermal inversions, sunlight, automobiles, and ozone?

8. Why do some cities have greater problems with smog than others?

9. Describe three regulatory actions of the EPA that have significantly improved air quality and why they improved air quality.

10. What molecules produce acid rain and how are they produced?

11. What are the primary effects of acid rain on terrestrial and aquatic ecosystems?

12. Why is stratospheric ozone important?

13. What was done to protect stratospheric ozone?

14. What are the National Ambient Air Quality Standards?

15. Give an example of a hazardous air pollutant.

16. Explain why air pollution problems in economically developing countries are different from those in developed countries.

17. How does radon enter a home?

18. Why do buildings often have poor air quality?

19. Define noise.

**Critical Thinking Questions**

1. Why do you think air pollution is so much worse in developing countries than in developed countries? What should developed countries do about this, if anything?

2. What common indoor air pollutants are you exposed to? What can you do to limit this exposure?

3. Is it possible to have zero emissions of pollutants? What level of risk are you willing to live with?

**(AP) ENVIRONMENTAL SCIENCE 2022-23 READING GUIDE**

**CHAPTER 17 - Review Questions**

1. Why are geologic studies important to the understanding of climate change?

2. How does each of the following help us understand climate change?

a. studies of the flowering times of plants

b. measurements of the pH of the ocean

c. satellite photos of the amount of snow in an area

d. sea level measurements

e. gas bubbles trapped in glaciers

f. migration patterns of birds

3. What are the primary greenhouse gases and how do human activities affect their concentrations?

4. How do greenhouse gases cause a warming of the Earth

5. List five changes that are likely to occur to Earth and its ecosystems as a result of global warming.

6. List three actions humans could take to reduce the release of additional greenhouse gases.

7. Describe how increased carbon dioxide in the atmosphere will alter the oceans.

8. How will climate change affect human health?

9. How effective have human efforts been at controlling carbon dioxide release?

10. List five changes likely to occur to the hydrologic cycle as a result of a warmer climate.

11. Why does a warming climate cause sea level to rise?

**Critical Thinking Questions**

1. Some developing countries argue that they should be exempt from limits on the production of greenhouse gases and that developed countries should bear the brunt of the changes that appear to be necessary to curb global climate change. What values, beliefs, and perspectives underlie this argument? What do you think about this argument?

2. China and the United States are the top two countries in terms of greenhouse gas releases. Why is this true? What could be done to change this situation?