

Grade Eight Social Studies

1.2 Composition and Structures of the Earth's Atmosphere

1.2.1 Composition of the Earth's Atmosphere

The air that surrounds the earth is called the atmosphere. It is an envelope of transparent, colorless, tasteless and odorless gases found above the earth's surface.

The earth's atmosphere is composed of gases, suspended dust particles and condensed moisture droplets which are collectively known as aerosols. It extends outwards several thousand kilometers. The gases are different in their volume.

Nitrogen and oxygen are major gases of the earth's atmosphere while argon and carbon dioxide are minor gases. The remaining gases are often referred to as trace gases.

Nitrogen is the most abundant gas in the earth's atmosphere. It makes up 78 percent of the Earth's atmosphere. It enters the atmosphere when volcanoes erupt and when dead plants and animals decay. Oxygen, the second most abundant gas in Earth's atmosphere, is primarily produced by plants.

Among gases of the earth's atmosphere, oxygen is the most important for living things to exist on planet earth.

Unit One Section 1.2.1

Worksheet One

Section A

1. What is the atmosphere?

- a) The soil layer under Earth's surface
- b) The water body surrounding Earth
- c) The air that surrounds the Earth
- d) The outer layer of the sun

2. Which of the following best describes the atmosphere?

- a) Opaque and solid
- b) Transparent, colorless, tasteless, and odorless
- c) Liquid and dense
- d) Dark and dusty

3. What are aerosols?

- a) Gases only
- b) Oxygen and nitrogen
- c) Dust, moisture droplets, and gases suspended in the air
- d) Water vapor and clouds only

4. Which gas is most abundant in Earth's atmosphere?

- a) Oxygen
- b) Argon
- c) Nitrogen
- d) Carbon dioxide

5. How does nitrogen enter the atmosphere?

- a) From plant photosynthesis
- b) From rainfall
- c) From volcanic eruptions and decay of dead organisms
- d) From cloud formation

6. What is the second most abundant gas in the atmosphere?

- a) Nitrogen
- b) Oxygen
- c) Argon
- d) Carbon dioxide

7. What is the source of oxygen in the atmosphere?

- a) Volcanoes
- b) Dust storms
- c) Plants
- d) Soil

8. Which gases are considered trace gases in the atmosphere?

- a) Nitrogen and oxygen
- b) Argon and oxygen
- c) Carbon dioxide and argon
- d) Water vapor and nitrogen

9. Why is oxygen important in the Earth's atmosphere?

- a) It cools the atmosphere
- b) It forms clouds
- c) It allows living things to survive
- d) It causes volcanic eruptions

10. How far does the Earth's atmosphere extend?

- a) A few hundred meters
- b) About 10 kilometers
- c) Several thousand kilometers
- d) Just above mountain peaks

Match the items in Column A with the correct description in Column B. Put the correct number from column "A" in the space provided of column "B".

Column A

Column B

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| 1. Atmosphere |A. Tiny particles and moisture suspended in the air |
| 2. Transparent |B. Makes up 78% of Earth's atmosphere |
| 3. Aerosols |C. Clear and allows light to pass through |
| 4. Nitrogen |D. Most important gas for supporting life |
| 5. Oxygen |E. The air surrounding the Earth |
| 6. Carbon dioxide |F. A minor gas and a greenhouse gas |
| 7. Argon |G. A minor gas found in small amounts in the atmosphere |
| 8. Trace gases |H. Gases that are present in very small amounts |
| 9. Plants |I. Main producers of oxygen in the atmosphere |
| 10. Volcanoes and decaying organisms |J. Natural sources of nitrogen in the atmosphere |
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