

4.4 Earth’s Atmosphere

Name: _____ Class: _____ Date: _____ **Total: 10 marks**

KEY WORDS ozone layer 臭氧层 • stratosphere 平流层 • troposphere 对流层
• atmosphere 大气层

Objective

Build the skills to answer exam questions on **Earth’s atmosphere**.

You must be able to:

- name the atmospheric **layers** 大气层 (troposphere, stratosphere)
- state the main gases
- locate the **ozone layer** 臭氧层 and weather

1 Worked examples

Study these first. Each one shows the method for a question type used later — follow the steps and you can do the Practice and Exam-style questions yourself.

■ Composition

The atmosphere is about **78% nitrogen**, **21% oxygen**, and small amounts of argon, CO₂, and water vapor.

■ The layers (bottom to top)

- **Troposphere** — lowest; where **weather** happens and we live; temperature falls with height.
- **Stratosphere** — above it; contains the **ozone layer**, which absorbs harmful UV; temperature rises with height here.
- (Higher: mesosphere, thermosphere.)

■ The ozone layer

The **ozone layer** in the stratosphere absorbs most of the Sun’s harmful **ultraviolet (UV)** radiation, protecting life.

■ A worked identification

Weather and clouds occur in the **troposphere**; the protective ozone layer sits in the **stratosphere** above.

2 Practice

Now apply the methods above.

2.1 What are the two most abundant gases in the atmosphere? [2]

2.2 In which layer does weather occur? [1]

2.3 In which layer is the ozone layer found? [1]

3 Exam-style questions

3.1 The ozone layer protects life by absorbing [1]

- | | |
|---|---|
| A | B |
| C | D |
- A** visible light
B ultraviolet (UV) radiation
C carbon dioxide
D oxygen

3.2 A weather balloon rises from the ground into the stratosphere.

(a) Name the two layers it passes through. [2]

(b) State what important feature it reaches in the stratosphere. [1]

3.3 Explain why the ozone layer is important for living things. [2]