

The Atmosphere ▪ *Guided Reading and Study*

Layers of the Atmosphere

This section describes the four main layers of the atmosphere.

Use Target Reading Skills

As you preview Figure 9 in your textbook, write questions in the appropriate spaces in the graphic organizer. As you read, fill in the answers under the questions.

Layers of the Atmosphere

Q. Where is the ozone layer?
A.
Q.
A.



Introduction

1. The four main layers of the atmosphere are classified according to changes in _____.

The Troposphere

2. Circle the letter of each sentence that is true about the troposphere.
 - a. It is the lowest layer of Earth’s atmosphere.
 - b. It has less variable conditions than other layers.
 - c. It is where Earth’s weather occurs.
 - d. It is the shallowest layer of the atmosphere.
3. Is the following sentence true or false? The troposphere contains almost all of the mass of the atmosphere. _____
4. Is the following sentence true or false? As altitude increases in the troposphere, temperature also increases. _____

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Layers of the Atmosphere *(continued)*

5. How does the depth of the troposphere vary?

6. Is the following sentence true or false? At the top of the troposphere, the temperature stops decreasing. _____

The Stratosphere

7. How far does the stratosphere extend above Earth's surface?

8. Circle the letter of each sentence that is true about the stratosphere.

- a. The temperature of the lower stratosphere is about -60°C .
- b. The upper stratosphere is colder than the lower stratosphere.
- c. The middle portion of the stratosphere contains a layer of ozone.
- d. The ozone in the stratosphere reflects energy from the sun.

The Mesosphere

9. Where does the mesosphere begin?

10. Circle the letter of each sentence that is true about the mesosphere.

- a. It contains the ozone layer.
- b. It contains the coldest part of the atmosphere.
- c. It protects Earth's surface from being hit by most meteoroids.
- d. It ends at 320 kilometers above sea level.

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The Thermosphere

11. Circle the letter of each sentence that is true about the thermosphere.
- a. It is the outermost layer of the atmosphere.
 - b. Its air is very thin.
 - c. It has no definite outer limit.
 - d. It starts at 320 kilometers above sea level.

12. Why is the thermosphere so hot?

13. Why would an ordinary thermometer show a low temperature in the thermosphere?

14. List the layers of the thermosphere, and describe where each begins above Earth's surface.

a. _____

b. _____

15. Brilliant light displays that occur in the ionosphere are called the _____.

