

**Lesson Outline****LESSON 1*****Describing Earth's Atmosphere*****A. Importance of Earth's Atmosphere**

1. The \_\_\_\_\_ is a thin layer of gases surrounding Earth.  
It is \_\_\_\_\_ of kilometers high.
2. Earth's atmosphere contains a layer of \_\_\_\_\_ that helps keep temperatures on Earth within a range that living organisms can survive.
3. Earth's atmosphere helps protect living organisms from some of the \_\_\_\_\_ harmful rays.
4. Friction within the atmosphere causes most \_\_\_\_\_ to burn up before striking Earth.

**B. Origins of Earth's Atmosphere**

1. Earth's ancient atmosphere formed from hot \_\_\_\_\_ that escaped from Earth's hardening surface.
2. Earth's ancient atmosphere consisted of water vapor with a little bit of \_\_\_\_\_.
3. \_\_\_\_\_ is water in its gaseous state.
4. As Earth's atmosphere cooled, the water vapor condensed into a(n) \_\_\_\_\_ that fell as rain. Over thousands of years, the rain formed Earth's \_\_\_\_\_.
5. \_\_\_\_\_ from the atmosphere dissolved in rainwater and fell into the oceans.
6. Organisms that use photosynthesis produced the \_\_\_\_\_ in today's atmosphere.

**C. Composition of the Atmosphere**

1. Nitrogen makes up about \_\_\_\_\_ percent of Earth's atmosphere.
2. Oxygen makes up about \_\_\_\_\_ percent of Earth's atmosphere.
3. The amounts of atmospheric \_\_\_\_\_, which include water vapor, carbon dioxide, and ozone, vary.
4. Volcanoes send \_\_\_\_\_ and liquid acids into the atmosphere.

**D. Layers of the Atmosphere**

1. The atmospheric layer closest to Earth is the \_\_\_\_\_.

## Lesson Outline continued

2. The warmest part of the troposphere is near \_\_\_\_\_.
3. The \_\_\_\_\_ is the atmospheric layer directly above the troposphere.
4. The area of the stratosphere that has a great amount of ozone gas is the \_\_\_\_\_.
5. \_\_\_\_\_, which can kill plants and animals, are absorbed more effectively by ozone than by oxygen gas.
6. Combined, the \_\_\_\_\_ and the \_\_\_\_\_ are layers of the atmosphere that are much broader than the troposphere and the stratosphere. They have a low \_\_\_\_\_ of gases.
7. The \_\_\_\_\_ is a region within the mesosphere and troposphere that contains ions. Displays of colored lights called \_\_\_\_\_ occur here.
8. In the \_\_\_\_\_, gas molecules rarely strike one another.

### E. Air Pressure and Altitude

1. \_\_\_\_\_ pulls gas particles in the atmosphere toward Earth's surface.
2. Air pressure is \_\_\_\_\_ near Earth's surface because all the molecules of the atmosphere push downward on the lowest layer of air.

### F. Temperature and Altitude

1. In the troposphere, temperature \_\_\_\_\_ as altitude increases. The opposite occurs in the next layer up, the \_\_\_\_\_.
2. In the mesosphere, temperature \_\_\_\_\_ as altitude increases. In the thermosphere and exosphere, the \_\_\_\_\_ happens.