

Earth Science Chapter 15: The Air Around You

*Answer the following questions. Answers that cannot be read will be counted as incorrect.*

1. What is weather? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. What is Earth's atmosphere? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. What are the six gases and particles that the book mentions are in the atmosphere?

A.

B.

C.

D.

E.

F.

## Earth Science Chapter 15: Air Pressure

*Answer the following questions by circling the correct answer. Answers that cannot be read will be counted as incorrect.*

1. What is density?
  - a. the result of the weight of a column of air pushing down on an area
  - b. length divided by width
  - c. the amount of mass in a given volume of air
  - d. the force pushing on an area or surface
  
2. What instrument consists of a glass tube open at the bottom end and partially filled with mercury?
  - a. mercury barometer
  - b. aneroid barometer
  - c. mercury compass
  - d. aneroid compass
  
3. What is altitude?
  - a. the wingspan of a hawk
  - b. the distance above sea level
  - c. an instrument that measures air pressure
  - d. mass divided by density
  
4. What happens to altitude and density as air pressure decreases?
  - a. altitude and density both increase
  - b. altitude and density both decrease
  - c. altitude decreases, density increases
  - d. altitude increases, density decreases
  
5. Why is it harder to breathe at the top of a mountain?
  - a. the mountain takes up too much space, leaving none for oxygen
  - b. since the air is less dense, there are fewer oxygen molecules in each breath
  - c. your lungs get smaller so it is harder to breathe
  - d. your muscles expand and demand more oxygen than you can possibly breathe

Earth Science Chapter 15: Layers of the Atmosphere

Fill in the following table. Answers that cannot be read will be counted as incorrect.

| Name of the sphere | Location  | Description  |
|--------------------|---|--|
| Troposphere        | 16 km above the equator<br>9 km above the poles       |  |
|                    |   | “ <i>Strato</i> ” means “layer” or “spread out”<br>Contains the ozone layer which protects the earth’s living things from UV radiation |
|                    | Begins 50 km above Earth’s surface and ends at 80 km  |  |
|                    |   | Outermost layer of Earth’s atmosphere<br><i>Thermo-</i> means “heat”<br>Very hot because sunlight strikes it first                     |
| Ionosphere         |   | Ions are electrically charged so radio waves bounce off of them back to Earth<br>Aurora borealis occur here                            |
|                    | Extends from about 400 km outward for thousands of km |  |

## Earth Science Chapter 15: Air Quality

*Draw a poster for the Department of Health describing three air pollutants and what their effects on health can be. Be sure to describe their sources and what the public can do to decrease their amounts.*

## Earth Science Chapter 15: Study Guide

### Section 1

- Vocabulary

Weather

Ozone

Atmosphere

Water vapor

- Know how weather relates to the atmosphere
- Know the composition of the atmosphere and the importance of those components
- Know how the atmosphere is important to life on Earth

### Section 2

- Vocabulary

Density

Barometer

Altitude

Pressure

Mercury barometer

Air pressure

Aneroid barometer

- Know the properties of air and why air has those properties
- Know the instruments used to measure air pressure and how they work
- Know the two measuring units of air pressure
- Know what happens to altitude and density as air pressure changes
- Know why it is hard to breathe at the top of a mountain

### Section 3

- Vocabulary

Troposphere

Mesosphere

Ionosphere

Stratosphere

Thermosphere

Exosphere

- Know the four main layers of the atmosphere, their location and their conditions
- Know how the thermosphere is broken up
- Know how the brilliant light displays in the ionosphere are created
- Know the timeline on page 524 and 525

### Section 4

- Vocabulary

Pollutants

Photochemical smog

Acid rain

- Know the five type of pollutants in Figure 12 and their effects on health
- Know the major sources of air pollution
- Know what smog and acid rain are and what their effects are
- Know how the United States is trying to improve air quality and some problems with improving air quality