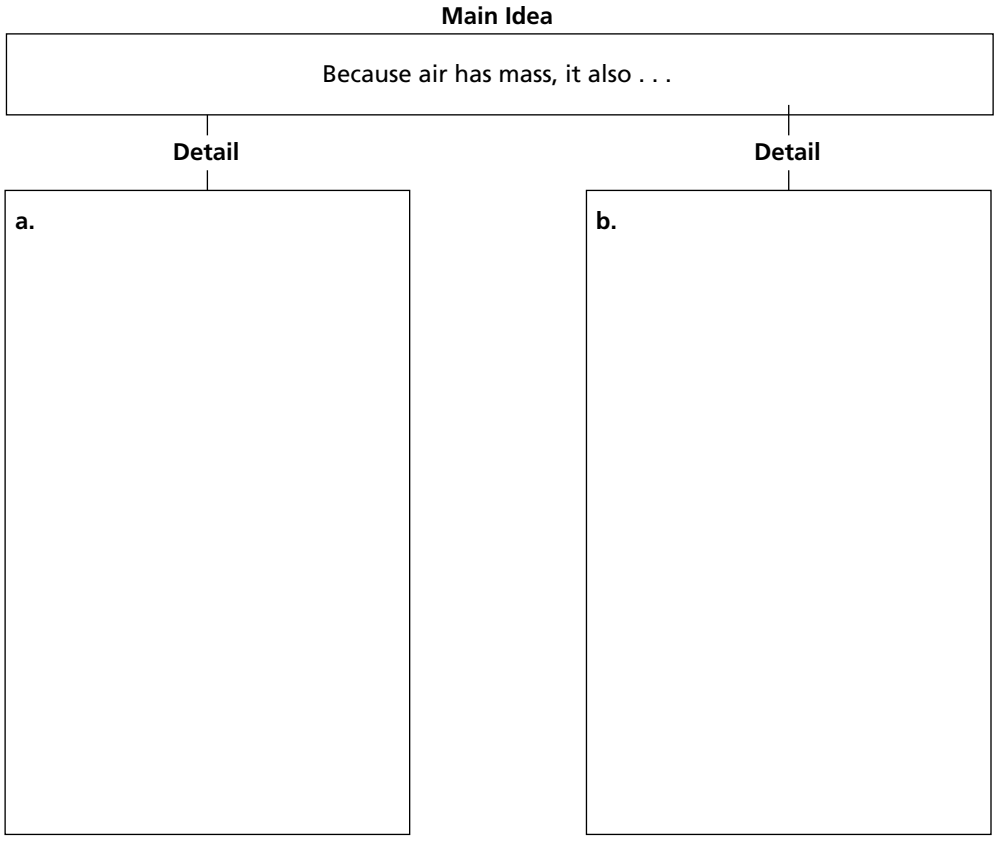
Air Pressure

This section describes several properties of air, including density and air pressure. The section also explains how air pressure is measured and how it changes with altitude.

Use Target Reading Skills

As you read about the properties of air, fill in the detail boxes that explain the main idea in the graphic organizer below.



Introduction

1. Suppose that you are not carrying anything on your back. Why do your shoulders still have pressure on them?

_____

_____

Properties of Air

2. Circle the letter of each sentence that is true about air.

a. Air has mass because it is composed of atoms and molecules.
b. Because air has mass, it has density and pressure.
c. The more molecules in a given volume of air, the greater its density.
d. The greater the density of air, the less pressure it exerts.

3. Complete the cause-and-effect table to show the relationship among mass, volume, and density.

CAUSE		EFFECT
If mass	**and volume**	**then density**
increases	stays the same,	**a.**
b.	stays the same,	decreases.
stays the same	decreases,	**c.**
stays the same	**d.**	decreases.

e. Use the information in the table to write one or two sentences about the relationship among mass, volume, and density.

_____

_____

_____

_____

_____

Measuring Air Pressure

4. An instrument that is used to measure air pressure is a(n) _____.

5. What is the difference between how air pressure is indicated in a mercury barometer and an aneroid barometer?

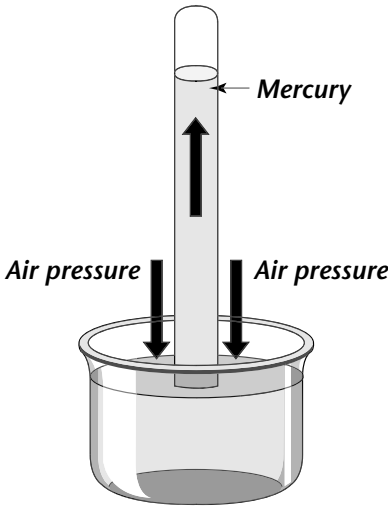
_____

_____

_____

_____

6. Draw a line on the glass tube to show where the level of the mercury might be if the air pressure fell.



7. Two different units used to measure air pressure are _____ and _____.

8. If the air pressure is 30 inches, how many millibars of air pressure are there?

_____

_____

Altitude and the Properties of Air

9. Another word for elevation, or distance above sea level, is _____.

10. Is the following sentence true or false? Air pressure increases as altitude increases. _____

11. Is the following sentence true or false? As air pressure decreases, so does air density. _____

12. Why is air pressure greater at sea level than at the top of a mountain?

_____

_____

_____

13. Is the following sentence true or false? As altitude increases, so does air density. _____

14. Explain why mountain climbers sometimes bring tanks of oxygen along with them on their climbs.

_____

_____

_____

15. Circle the letter of the sentence that helps explain why you would have more difficulty breathing at high altitudes than at sea level.

a. Air pressure is higher at high altitudes.
b. Density of the air is greater at high altitudes.
c. The percentage of oxygen in the air is lower at high altitudes.
d. The amount of oxygen in each breath is less at high altitudes.