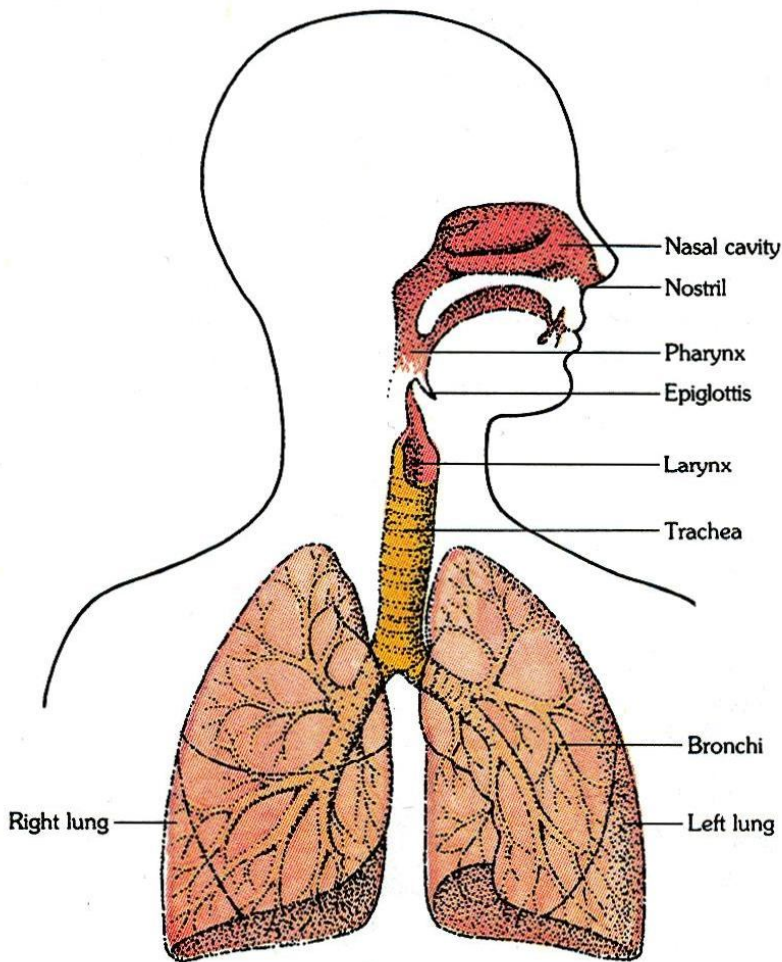


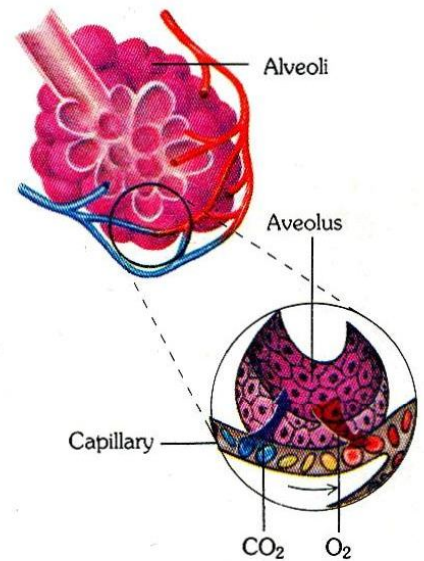
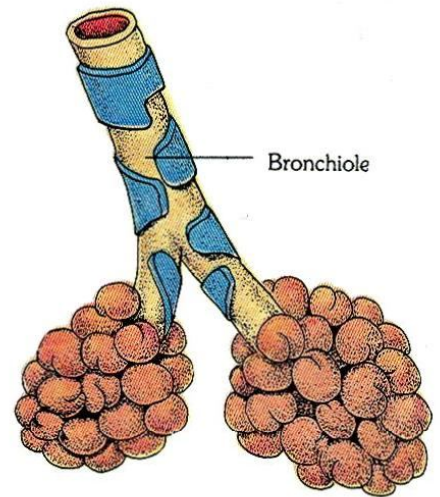
## Respiratory system



### Exchange of Gases in the Alveoli

Each alveolus is lined with a single layer of flat cells that are richly supplied with capillaries. Through these capillaries, gases pass into and out of the bloodstream. Oxygen and carbon dioxide easily cross the moist, living cell membranes. Large amounts of oxygen are carried to the body cells in combination with hemoglobin in red blood cells. Similarly, large amounts of carbon dioxide are carried from the body cells to the lungs. Blood flowing through capillaries near the alveoli picks up oxygen and carries it to body cells. Carbon dioxide diffuses from the capillaries into the air sacs. It is then removed from the body by exhaling.

## Alveoli and bronchioles



The chemical equation for respiration is  

$$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{energy}$$

If the alveoli of a lung were flattened out, they would cover about half a tennis court. Point out that surface area is important to gas exchange.