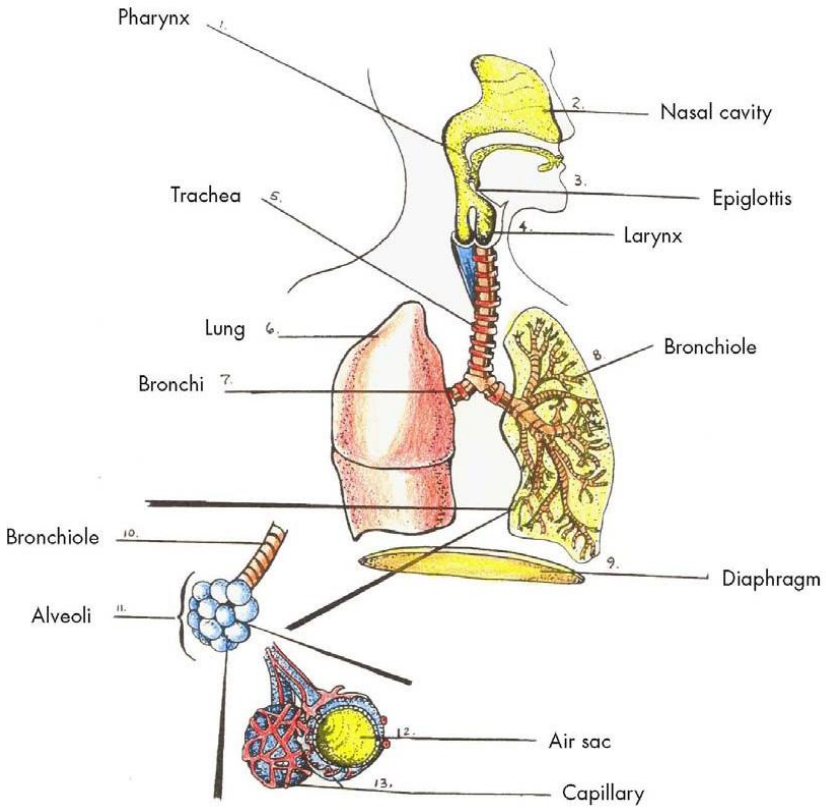
THE RESPIRATORY SYSTEM

The purpose of respiration is to obtain oxygen for cell metabolism and to rid the body of by-products such as carbon dioxide. Breathing is an involuntary action kept constant by the medulla oblongata at the base of the brain. On average, adults breathe 12 to 20 times per minute while at rest. Adult lungs average 12 inches in length from tip to tip and are able to breathe in and out 500 milliliters of air during relaxed respiration.

Our atmosphere consists of many more gases than just oxygen. We breathe in 78 percent nitrogen, 20 percent oxygen and two percent trace elements such as helium, hydrogen, neon and argon. During respiration, we inhale more oxygen than we are able to use during one breath, so the remaining oxygen is exhaled along with the other unusable gases.

The 300 million alveoli in each lung are the site of oxygen-carbon dioxide gas exchange. Each alveolus is composed of a thin wall of elastic fibers and a layer of fluid that keeps the air sac from collapsing. When a breath of atmospheric gases finally reaches an alveolus, oxygen diffuses through the alveolar wall and attaches to a red blood cell for transport. Carbon dioxide, however, enters the alveolus after separating from the red blood cell and will travel out of the respiratory system.



THE PATH OF AIR UPON ENTERING THE BODY

Organs of Respiration	**Location**	**Function**
NOSE/MOUTH	Face	Cleans, warms, and moistens the air
PHARYNX	Open space behind nose and mouth and above larynx	Connects nose/mouth to larynx
EPIGLOTTIS	Flap located at base of tongue, above larynx	Snaps shut during swallowing to prevent food from going down trachea
LARYNX	Directly above trachea	Houses and protects vocal cords
VOCAL CORDS	Lay within larynx	Cords vibrate together upon exhalation to produce voice sounds
TRACHEA	Lays in front of esophagus	Passageway that connects pharynx to the lungs
BRONCHI	At the base of the trachea, two main branches of bronchial tree	Air passageway
BRONCHIOLES	Many small supporting branches of bronchial tree	Air passageway
ALVEOLI	Terminal ends of bronchioles	Place where oxygen, carbon dioxide gas exchange occurs
DIAPHRAGM	Base of lungs, muscle that separates chest cavity from abdomen	Contracts during respiration, causing less pressure in chest cavity to allow easier breathing
PLEURA	Continuous membrane that surrounds each lung and chest cavity	Fluid-filled membrane aids in lung expansion and contraction

CREDITS AND MORE INFORMATION:

http://www.peakhealthfitness.net/

http://www.medscape.com/viewarticle/498035_6