STUDY GUIDE FOR CHAPTER 13
(see also the chapter summary on pages 404-406)

Lungs - the major respiratory organs in land vertebrates, including mammals.
Nasal passages - airways separated from the mouth cavity by the palate; air is moistened and warmed here.
Paranasal sinuses - air-filled pouches branching off the nasal passages, responsible for adding the greatest amount of moisture and warmth to the inspired air.
Pharynx - throat region behind the nasal passages, where food and air pathways cross.
Glottis - the entrance from the pharynx into the larynx, guarded by the epiglottis.
Epiglottis - a flap guarding the glottis and preventing food from entering it.
Larynx - the "voice box" at the upper end of the trachea, containing the vocal cords.
Vocal cords or ligaments - a pair of ligaments that vibrate to produce sounds, including speech.
Trachea - the "windpipe," a tube, surrounded by C-shaped rings of cartilage, supplying air to the lungs.
Bronchi (or primary bronchi) - the two primary branches arising from the bottom of the trachea.
Bronchioles - the branches and sub-branches (about three levels in all) arising from the bronchi.
Alveoli - the box-like spaces within the lung, in which nearly all gas exchange takes place.
Diaphragm - a large, flat muscle between the thorax and abdomen, responsible for breathing movements.
Bicarbonate ion (hydrogen carbonate ion) - HCO_3^-, the form in which CO_2 wastes are transported through the blood.
Breathing (inspiratory) center - a nerve center in the medulla that stimulates inspiration of air.
Ventilation - breathing, or emptying and filling of the lungs.
Inspiration - intake (breathing in) of air into the lungs.
Expiration - outflow (breathing out) of air from the lungs.
Oxyhemoglobin - an oxygenated form of hemoglobin, responsible for most of the oxygen transported through the bloodstream.
Pleural cavity - the cavity that contains the lungs. Its linings are called **pleura**: the **parietal pleura** makes up the (outer) walls of the pleural cavity; the **visceral pleura** coat the surface of the lungs.
Mediastinum - the region between the right and left pleural cavities, containing the heart, esophagus, etc.
Surfactant - anything that decreases surface tension and surface stickiness.
Tidal volume - the volume of air that moves in and out of the lungs during quiet, relaxed breathing.
Inspiratory reserve - additional volume of air that can be forcibly inhaled ("take a deep breath").
Expiratory reserve - additional volume of air that can be forcibly emptied from the lungs.
Vital capacity - maximum volume of air that can be exhaled all at once following a deep breath.
Residual volume - the "dead space" volume of air remaining in the lungs after maximal forced expiration.
Cilia - hair-like cell processes whose beating movements causes mucus to keep moving across surfaces.
Chronic condition - any condition that lasts for many years or for the rest of a person's life.
Bronchitis - an inflammation, often chronic, of the bronchi and other respiratory passages.
Emphysema - a fibrosis (loss of elasticity due to collagen deposition) of the alveoli, resulting in great difficulty in breathing, enlarged lungs, and a barrel-shaped chest.
COPD - Chronic Obstructive Pulmonary Disease, smoking-related conditions (including emphysema and bronchitis) that result in difficult, labored breathing, frequent coughing and lung infections, poor oxygenation ("shortness of breath"), and death.
Cystic fibrosis - a lung disorder characterized by oversecretion of thick mucus, caused by a defect in membrane chloride channels. It is the most common genetic disease in the U.S.
Asthma - a chronic disorder charactized by swelling of the bronchial linings, wheezing, gasping for air.
Pneumonia - an acute infection (bacterial, viral, or other) of the lungs or lower bronchi.