Biology 12 **Respiration Learning Goals:** (Chapter 15 p281-299)

By the end of this chapter you should be able to:

* Label and explain the function of the following structures: nasal cavity, pharynx, larynx, trachea, bronchi, bronchioles, alveoli, diaphragm and ribs, pleura membranes, thoracic cavity
* Compare and contrast inhalation and exhalation
* Trace the pathway of oxygen into the respiratory system

Explain the roles of cilia and mucus in the respiratory tract

* describe how the structure of the alveoli allow their unique function
* Explain the movement of the diaphragm and the ribs during inspiration and expiration
* Explain the function of the pleural membrane in the lungs
* Know the difference between trachea and esophagus
* Know the difference between the primary, secondary bronchi and the bronchioles (shape, thickness, and cartilage amount)
* Locate and describe the part of the brain responsible for controlling respiration
* Explain the roles of CO2 and H+ ions in stimulating the respiratory center of the medulla oblongata
* Explain the roles of O2, CO2 and H+ ions in stimulating the carotid and aortic bodies
* Explain what happens to oxygen once it is in the alveoli
* Describe the process of internal and external respiration (exchange of O2 and CO2)
* Explain the different mechanisms of breathing (tidal volume, vital capacity, inspiratory reserved, expiratory reserved, and residual)
* Compare and contrast among the different mechanisms of breathing
* Interpret a graph that depicts mechanisms of breathing
* Explain the roles of oxyhemoglobin, carbaminohemoglobin, reduced haemoglobin, bicarbonate ions, and carbonic anhydrase in the transport of carbon dioxide in the blood
* Write and explain the chemical equations for internal and external respiration
* Explain the term binding capacity, and how it relates to hemoglobin



* Interpret a diagram that depicts gas exchange in the body
* Describe in detail one type of upper respiratory tract infection
* Describe in detail one type of lower respiratory tract infection
* Explain why smoking has negative consequences