

Respiration



**ASSIGN
BUSTER**

Respiration §The act or process of inhaling and exhaling §Functions of Respiratory System §Gas exchange between blood and air §Move air to and from exchange surfaces §Protect exchange surfaces from environmental variations and pathogens §Produce sound §Detect olfactory stimuli Types of respiratory organ §1. Aquatic respiration §A. cell membrane — amoeba, paramecium §C. gills — mollusks and arthropods §1. papulae — finger-like dermal branchiae §Eg. Starfish §2. gills exposed to the water §Absence of operculum §Shark, salamander larvae and tadpoles §3. gills covered with operculum §Bony fishes §4. external gills §Necturus (mud puppy) §D. skin §Salamander §Eels (absorb oxygen thru skin) §frogs §2. AERIAL RESPIRATION §1. epidermis §Annelids §2. booklung §Spider §3. trachea or tracheal tubes §Spiracles §Insects, centipedes, millipedes §4. lungs §Lungfish — swimbladder (dry season) Respiration in frog §Jaws (closed)–glottis closed — larynx — lungs — muscle of abdomen expand (exchange of gases)

Respiratory System Organization §Components of the Respiratory System §Nose, nasal cavity, and paranasal sinuses §Pharynx §Larynx §Trachea, bronchi §Lungs §Bronchioles §Alveoli (gas exchange) Characteristics of a good respiratory organ §1. thin §2. moist §3. impregnated with blood vessel §4. elastic and highly distensible §5. large surface area §Respiratory Mucosa §Respiratory epithelium plus supporting connective tissue with mucous glands §Lines nasal cavity and most of airways §Goblet and gland cells secrete mucus §Mucus traps inhaled dirt, pathogens, etc. §Ciliated cells sweep the mucus out of the airways into pharynx §Irritants stimulate secretion §Causes “runny nose” Respiratory Physiology §Three Integrated Processes §Pulmonary ventilation–Moving air into and out of the respiratory tract; breathing §Gas exchange –Diffusion between alveoli and circulating

<https://assignbuster.com/respiration/>

blood, and between blood and interstitial fluids §Gas transport–Movement of oxygen from alveoli to cells, and carbon dioxide from cells to alveoli §Gas Exchange §External respiration–Diffusion of gases between alveolar air and pulmonary capillary blood across the respiratory membrane §Internal respiration–Diffusion of gases between blood and interstitial fluids across the capillary endothelium