**Respiratory System – Objective 63**

Functions of the Respiratory System:

* Taking in \_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-The process in which oxygen and glucose undergo a complex series of chemical reactions inside cells.
* Removes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Path**

As air travels from the outside environment to the lungs, it passes through the following structures:

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* It takes air only a few \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to complete the route from the nose to the lungs.

**The Nose**

* Cells lining the nasal cavities produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**-tiny hairlike extensions sweep the mucus into the throat, where you swallow it. Stomach acid destroys the mucus.
* Sneezing keeps out bacteria, dirt, etc.

**The Pharynx (The Throat)**

* Only part of the respiratory system that is shared with another system—the digestive system.
* Both the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_connect to the pharynx.

**The Trachea (The Windpipe)**

* Rings of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_that strengthen the trachea and keep it open.
* The trachea, like the nose, is lined with \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Cough to keep out bacteria, dirt,etc.
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (a small flap of tissue that folds over the trachea) seals off the trachea while you swallow.

**The Bronchi and Lungs**

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**(singular *bronchus*), the passages that direct air into the lungs.
* The\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the main organs of the respiratory system.
* The left bronchus leads into the left lung, and the right bronchus leads into the right lung.
* Each bronchus divides into smaller and smaller tubes in a pattern that resembles the branches of a tree.

**Alveoli**

* Located at the end of the branchi.
* Look like bunches of grapes.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**(singular *alveolus*)- Tiny sacs of lung tissue specialized to move gases between air and blood.
* Surrounded by a network of capillaries.
* Site where \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ picks up \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the air.
* Increase the surface area of the lungs to a whole TENNIS COURT!!!!

How You Breath

* In an average day, you breathe about 20,000 times.
* Depends on your need for oxygen.
* Controlled by muscles.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ moves down and rib cage moves out, air fills that space.

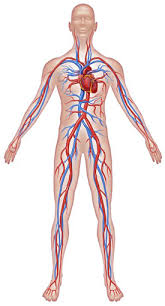
The\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or voice box located at the top part of the trachea.

Two **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,** (connective tissue) stretch across the larynx to produce your voice.

Throat muscles make the vocal cords contract, narrowing the opening. Air rushes the opening making the air molecules vibrate. This vibration creates a sound—your voice.

Ex. Like a squeaky balloon!

**The Circulatory System – Objective 64**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_system by which oxygen and nutrients reach the body's cells, and waste materials are carried away.
* Also carries substances called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which control body processes, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to fight invading germs.

**Parts of the Circulatory System**

* Divided into three major parts:
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, the \_\_\_\_\_\_\_\_\_\_\_\_\_, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ work together to form the circle part of the circulatory system.

**Circulation**

* Two parts – oxygen rich side and the oxygen poor side
* Heart acts as double \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Blood from the right side pump is dark red and low in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(oxygen-poor) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_blood.
* Blood travels through pulmonary arteries to lungs where it gets fresh oxygen and becomes bright red \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ blood.
* Blood from lungs through pulmonary veins back to the heart's left side pump

**Three Kinds of Blood Vessels**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - carry blood AWAY from the heart
* Main artery is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The aorta divides and braches into many smaller arteries
* Each region of your body has system of arteries supplying it with fresh, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Tough on the outside, Smooth on the inside
* Muscular wall helps the heart pump blood

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Only one cell thick
* Connects \_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Food and oxygen released to the body cells
* Carbon dioxide and other waste products returned to the bloodstream

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - carry blood toward the heart

* Receive blood from the capillaries
* Transport waste-rich/ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ blood back to the lungs and heart
* Valves are located inside the veins
* Allow blood to move in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Heart**

* Size of your \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , made of thick muscular walls
* Divided into \_\_\_\_\_\_\_\_\_\_\_\_\_ pumps
* Each pump has \_\_\_\_\_\_\_\_\_\_\_\_\_\_ chambers
* Upper chamber - **\_\_\_\_\_\_\_\_\_\_**receives blood coming in from the veins
* Lower chamber - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**squeezes blood out into the arteries

**Blood**

* Pumped by your heart.
* Travels through \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of miles of blood vessels
* Carries
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to and from your body cells.
* Made up of liquids, solids and small amounts of oxygen and carbon dioxide.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ carry oxygen from the lungs to all the cells of the body.
* Takes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and transports it back to the lungs
* About **5,000,000** Red Blood Cells in ONE drop of blood.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ protect the body from germs
  + Attack and destroy germs when they enter the body
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**are fragments of cells that help stop bleeding
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is the liquid part of the blood
* About half of your blood is made of plasma
* The plasma carries the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ throughout the body
* Plasma is made in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.