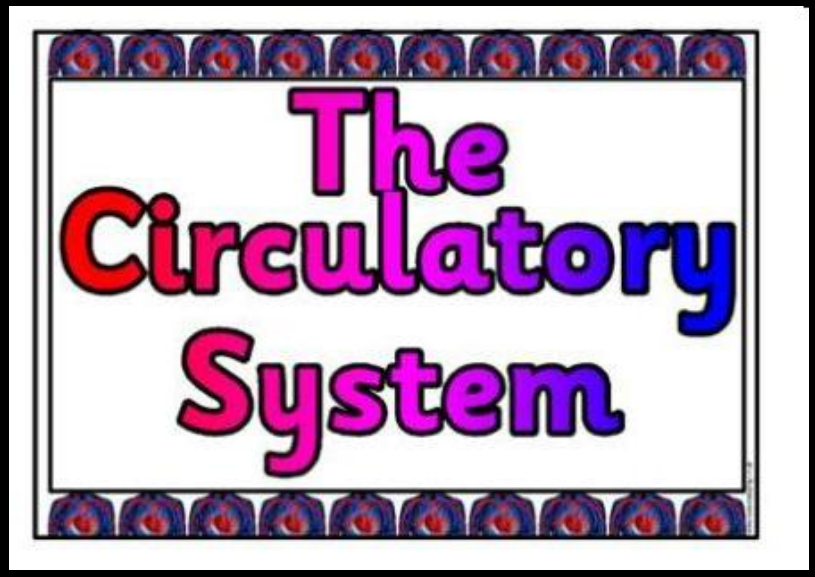
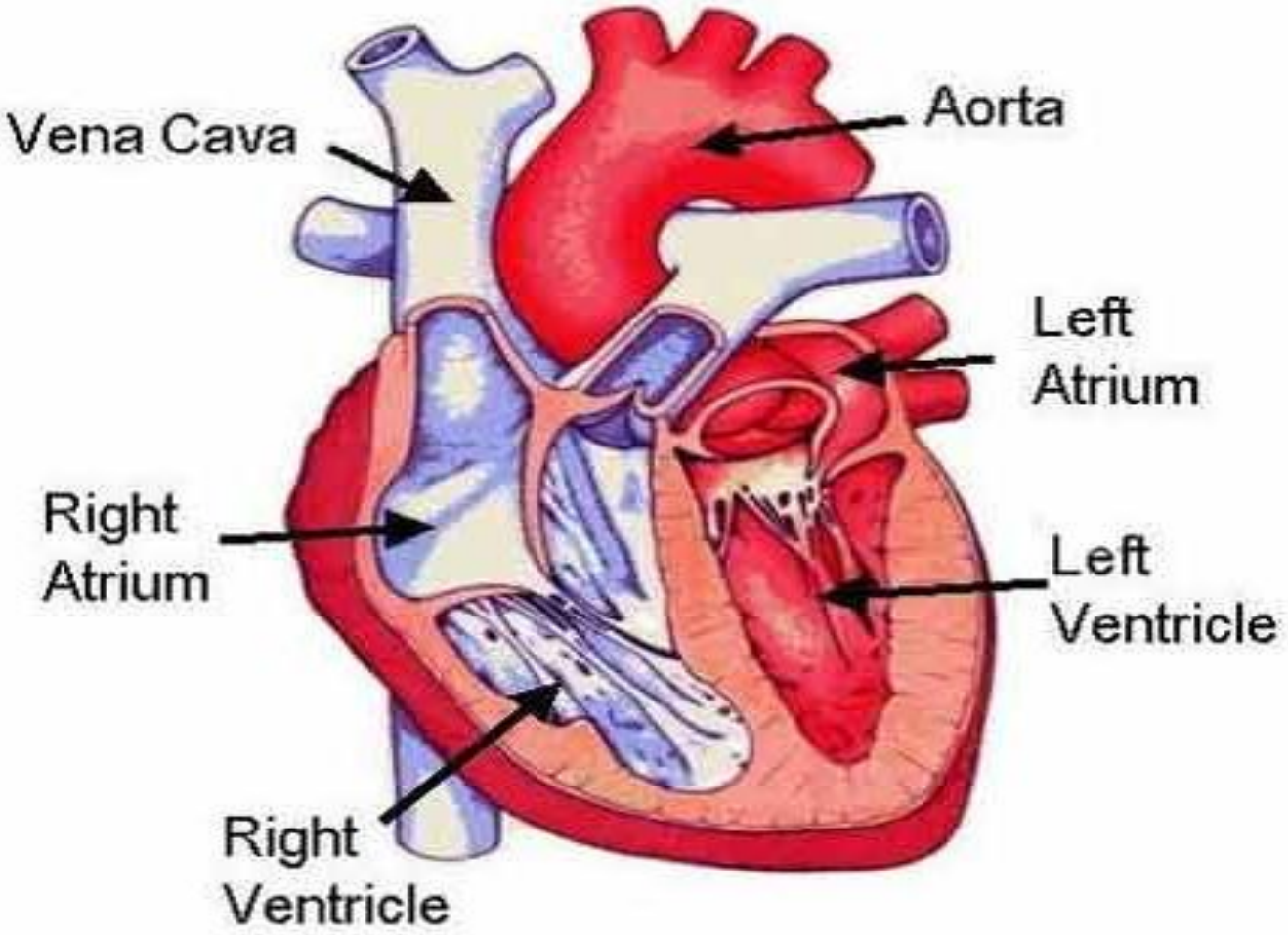
The structure of the heart & the human Circulation



I. Structure of Heart

- A. Description
  1. Muscular organ (3 layers of muscle) located under sternum and between lungs
     - A. epicardium – surrounds heart
     - B. myocardium – thick layer made of cardiac muscle
     - C. endocardium – inner of heart containing specialized muscle fibers called purkinje fibers

The Human Heart



2. Heart is separated in half by interventricular septum

3. Heart is enclosed in a double layered sac called pericardium; sac is anchored to the sternum and diaphragm and is filled with a small amount of serous fluid

B. Parts

1. each side is divided into 2 chambers

a. top chambers: atria (atrium singular); thin walled; collect blood and send it to other set of chambers

b. bottom chambers: ventricles; thick walled; pumping chambers; right ventricle sends blood to lungs; left ventricle sends blood to the body.

2. chambers are separated by atrioventricular valves (A-V valves)

a. tricuspid valve is located between right atrium and right ventricle; closes with chordae tendinae attached to papillary muscle

b. Bicuspid valve (mitral) is located between left atrium and left ventricle

c. Valves control flow of blood through heart and prevent back flow

3. Blood leaves ventricles into lungs or body through semilunar valves

a. Pulmonary semilunar valve is a the entrance of the pulmonary artery (leads to lungs)

b. Aortic semilunar valve is at the entrance of the aorta (leads to heart and body)

II. Human Circulation (blood flow through the heart) …Remember L.O.R.D

A. Deoxygenated

1. deoxygenated blood from the superior vena cava (head) and inferior vena cava (body) empties into right atrium.

2. Blood moves from the right atrium through the tricuspid valve into the right ventricle.

3. Blood moves from the right ventricle through the pulmonary semilunar valve up the pulmonary trunk into the pulmonary arteries and into the lungs

B. Oxygenated blood

1. oxygenated blood returns to the heart through the pulmonary veins and empties into the left atrium.

2. Blood moves from the left atrium through the bicuspid valve into the left ventricle
3. Blood moves from the left ventricle through the aortic semilunar valve into the aorta where it travels to the rest of the body and the heart

a. 1st 2 branches of the aorta (coronary arteries) supply blood to the heart

b. Cardiac veins drain blood from the myocardial capillaries into the coronary sinus

Heart Diagram