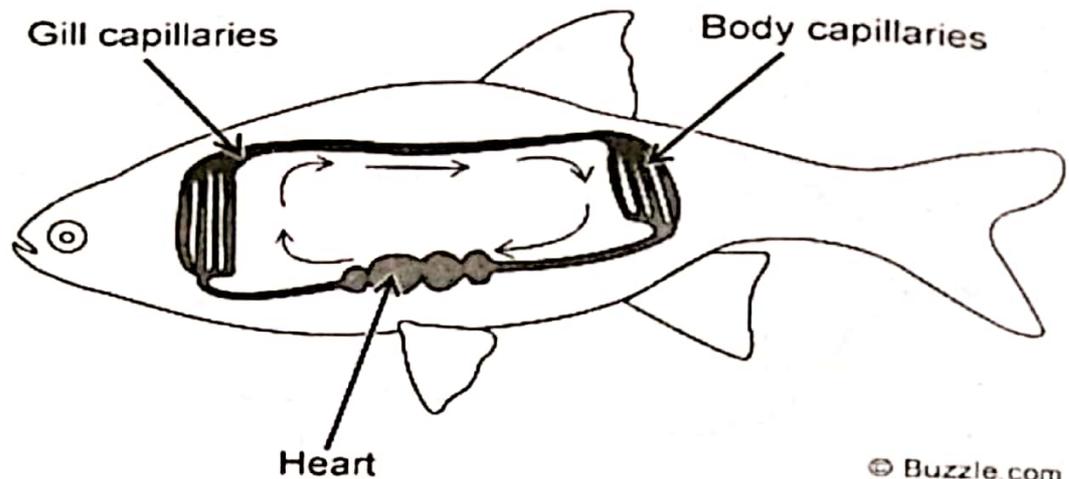


➤ **Single Circulatory System**

Fish have single circulatory systems in which blood passes through the heart only once each time it completes a full circuit around the fish's body, including through its gills and all other organs and tissues. The main difference between **single circulatory systems** and double circulatory systems is that in the case of single circulatory systems, blood passes through the heart only once on each circuit around the whole of the blood circulation system of the animal. (Conversely, in the case of double circulatory systems, blood passes through the heart twice during one complete circuit around the blood system through the body of the animal.)

Single Circulatory System



➤ Double circulation

Double circulatory systems is systems in which blood flows through the heart twice in a cycle.

In the case of double circulation, pulmonary circulation - i.e. blood flow between the heart and lungs, is separate from systemic circulation - i.e. movement of blood from the heart through the rest of the body (excluding the lungs), then back to the heart. In a **double circulatory system** there are two circuits for blood passing through the heart:

- **Pulmonary Circulation**

Definition: The circuit or rout which circulates the blood through lungs or between lungs and heart is called pulmonary circuit.

Path of blood flow:

Deoxygenated blood is pumped from the heart to the lungs, oxygenated blood returns to the heart from the lungs.

Deoxygenated blood of body → Right atrium → Right ventricle → Pulmonary artery

Lung → Pulmonary vein → Left atrium → Left ventricle → Aorta → Body

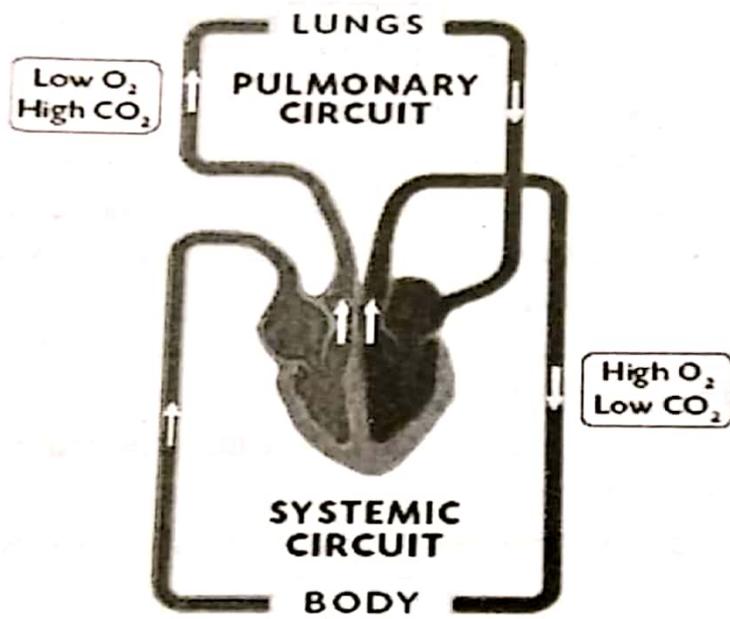
- **Systemic Circulation**

Definition: The circuit which carries oxygenated blood form heart to all parts of body and brings deoxygenated blood back to heart is called systemic circuit.

Path of blood flow:

Oxygenated blood is pumped from the heart around the body (including all the organs). That blood returns to the heart deoxygenated (more accurately 'oxygen poor') because much of the oxygen it contained when it left the heart has been supplied to tissues in the body.

Capillaries → Venules → Vein → Venacava → Right atrium → Right Ventricle → Lungs
 Left atrium → Left ventricle → Aorta → Body



Human double circuit plan