4 Chambered Heart & Circulatory System

Closed Circulatory System: Transport efficiency is increased when there is a closed route for the transport of the blood back to the heart
Heart (Pump)
Blood Vessels (Tube network)
Blood (Circulating fluid)
Leaves heart through arteries - Passes into arterioles - Forced through capillaries
Passes to venules - Flows to veins & back to heart
Capillaries: Exchange oxygen and food from blood to body's cells and pick up waste carbon dioxide. Thin walls allow gas diffusion
Venules: Smaller in diameter than veins
Veins: Return blood to heart. Thin layers of muscles and elastic fibers
Four-chambered heart - two separate pumping circuits - unidirectional valves
Oxygenated blood from lungs empties into left atrium through pulmonary veins
From left atrium, blood pumped into left ventricle
Ventricle contracts and forces blood out in a single strong pulse
AV valve prevents back-flow into atrium
Semi-lunar valve prevents back-flow into ventricles