Adult Guidance

Circulatory System: Parts

This is the first lesson in the Year 6 Animals Including Humans Unit. It is advised that children who have not covered either the Year 3 and or the Year 4 Animals Including Humans units should be pre-taught about the main parts of the skeletal, muscular and digestive system before starting on this unit. This is important as the interaction between the systems will be focused on in later lessons.

The Human Circulatory System

This lesson focusses on naming and labelling the parts of the circulatory system as well as looking at the specific parts of the heart, lungs and the types of blood vessels. The functions of these parts will be focused on in lesson 2.

Blood Vessels

There are three main groups of blood vessels – arteries, veins and capillaries. The table below shows the main types of blood vessels:

Arteries Carry oxygenated blood away from the heart except for the pulmonary and umbilical arteries, which carry de-oxygenated blood.	**Veins:** Carry de-oxygenated blood toward the heart except for the pulmonary and umbilical veins which carry oxygenated blood to the heart. Veins are less muscular than arteries and are often closer to the skin. Most veins contain valves to prevent back-flow.
Elastic Arteries: Elastic arteries contain filaments of collagen and elastin which gives them the ability to stretch in response to a pulse. The pulmonary arteries and the aorta are examples of elastic arteries. They receive their own blood supply unlike smaller vessels which are supplied by diffusion.	**Venae Cavae:** These are the two largest veins in the body and which carry blood into the heart.
Distributing Arteries: Distributing arteries are medium sized arteries that draw blood from an elastic artery. They branch into resistance vessels including small arteries and arterioles. These arteries are made of smooth muscle. The splenic artery which supplies oxygenated blood to the spleen is an example of this type of artery.	**Large collecting blood vessels:** Examples of these types of veins include the jugular and renal vein. The jugular veins bring de-oxygenated blood from the head back to the heart. The renal veins carry out a similar function for the kidneys.

Arterioles: These small blood vessels extend from the artery to the capillary.	**Capillaries:** These are the smallest blood vessels in the body and it is here that the exchange between water, nutrients, oxygen and carbon dioxide takes place.	**Venules:** Are the opposite of arterioles – they branch out from the capillary bed to drain into veins. Venules unite to form a vein.