



Year 6 - The Human Body: Circulation Reading Booklet

Lesson Series:

1. The Heart: Circulation of the Blood
2. Blood Vessels and Transport
3. Components of Human Blood.
4. Blood Pressure and Heart Rate.
5. Heart Rate- an Investigation
6. Assessment

Name: _____

Class: _____

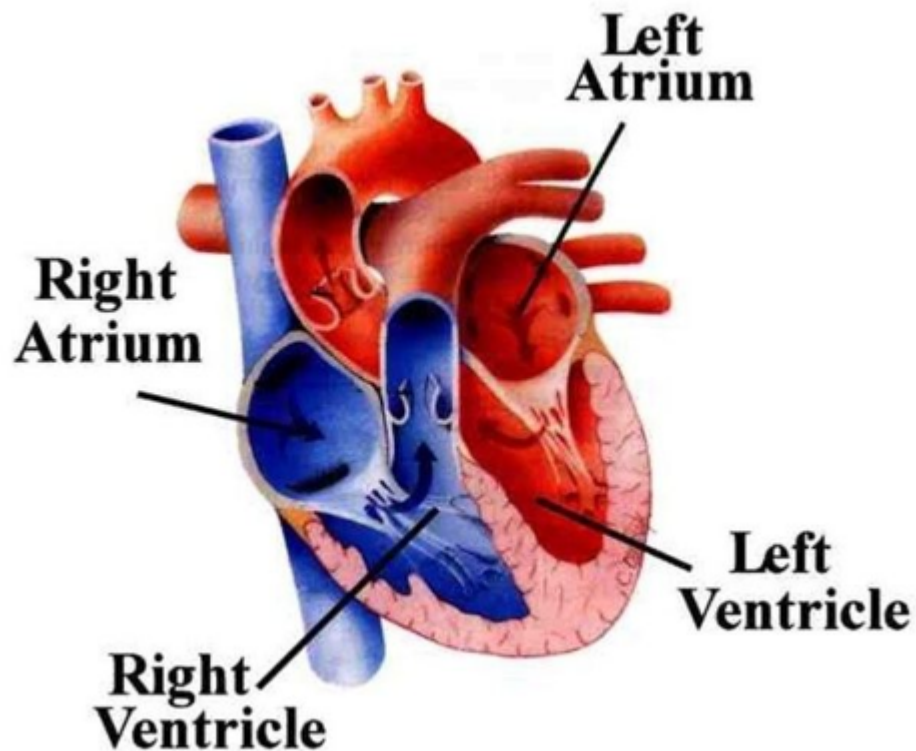
Lesson 1 - The Heart: Circulation of Blood

Every time your heart beats, blood is pumped through a network of blood vessels from the heart to all parts of your body. As you breathe in, air fills your lungs and the oxygen in that air travels from your lungs into your bloodstream, ready to refresh the cells in your body. The heart and blood vessels are parts of your body's circulatory system. The lungs and windpipe are part of your respiratory system, together these two systems keep you alive.

Read this

The heart is a muscle and is about the size of your fist. It is divided into four chambers. The top two chambers are referred to as the atria (each one is called atrium), and the bottom two are called ventricles. Valves are found between the atria and ventricles, they open and close to allow the blood to flow through the heart.

Blood needing oxygen (deoxygenated blood) enters the heart through the right atrium, is squeezed through the valve into the right ventricle. As the heart beats, it pumps the blood out to the lungs for a new supply of oxygen. Oxygenated blood travels from the lungs, into the left atrium, squeezes through the valve into the left ventricle. It is then pumped through the aorta, the biggest blood vessel of all, and the blood travels to different parts of the body. William Harvey (1578-1657), an English doctor, was the first to suggest that the heart was at the centre of a blood circulating system.






Lesson 2 - The Blood Vessels

Blood vessels, called arteries, carry oxygen-rich blood away from the heart. Blood vessels, called veins, carry blood back to your heart for more oxygen. Smaller blood vessels, called capillaries, branch off from the arteries and veins and bring the blood in contact with the cells in the body. Capillary walls are so thin that nutrients, oxygen and waste products pass back and forth through them easily. Capillaries connect arteries and veins. They are the end point of arteries, through which oxygen and nutrients are delivered, and the starting point of veins, which pick up and carry waste materials away. Backflow of blood is prevented by small valves in the blood vessels and by the constant beating of the heart.



Useful link: <https://www.bbc.co.uk/bitesize/guides/zhnk7ty/revision/3>


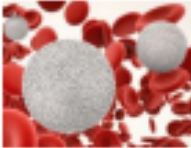

Arteries	Veins	Capillaries
<ul style="list-style-type: none"> Carry blood away from the heart Oxygenated blood 	<ul style="list-style-type: none"> Carry blood back to the heart Deoxygenated blood 	<ul style="list-style-type: none"> Transfers oxygen from the blood stream to other tissues in the body 

Lesson 3 - Components of Human Blood

Blood is made up of different components. The main liquid is called plasma. There are over 25 trillion (25,000,000,000,000) red blood cells in one person's body. Red blood cells contain a substance called haemoglobin which carries the oxygen and carbon dioxide. White blood cells attack and destroy bacteria.

Platelets are responsible for clotting the blood when a wound appears, so a scab develops protecting the wound while it heals. Blood never stops moving through your body. It delivers nutrients from food and oxygen to the cells in the organs, muscle, bones and nerves. It picks up waste materials from the cells in your body and carries that waste to organs that can process it. Cells give off a gas called carbon dioxide, which the blood carries to the lungs. When you breathe out you release carbon dioxide. The liver, your body's largest organ, removes dead blood cells and reuses what it can as nutrients. The spleen, another cleansing organ, helps to filter your blood and remove harmful waste.

Useful link: <https://www.funkidslive.com/learn/hallux/heart-beat/blood/#>

Red Blood Cells	White Blood Cells	Platelets
<p>Haemoglobin is the red protein found in red blood cells that transport oxygen around the body</p> 	<p>A part of our immune system. Helps the body to fight infections</p> 	<p>Tiny blood cells that help your body to form clots to stop bleeding</p> 

Lesson 4 - Blood Pressure and Heart Rate

As the heart pumps, the stretchy blood vessels swell and shrink as the blood flows through them. The pushing force, caused by the pumping heart that moves blood through the body is called blood pressure.

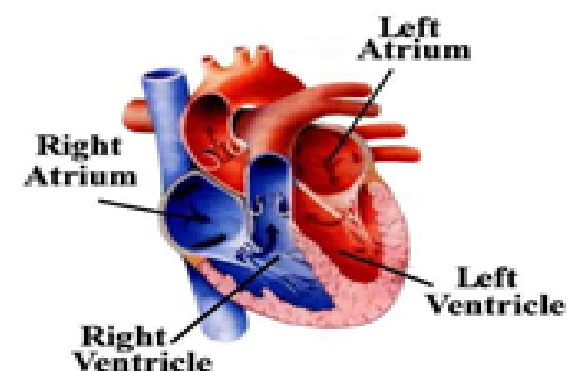
A GP will check your blood pressure to ensure your circulatory system is working properly. Your heart rate, or pulse, indicates how often your heart squeezes to pump blood through your body. You can measure your heart rate by pressing your fingertips on the pulse point in your wrist.

The average human heart rate is 90 pulses a minute. When you exercise your cells use lots of oxygen and soon need more. That's why exercise makes you breathe harder and makes your heart pump faster.






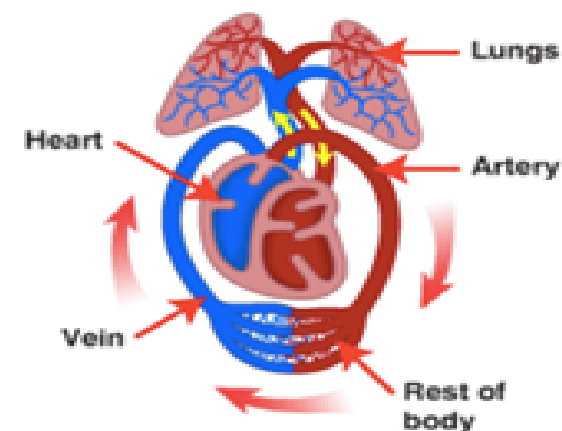
Key Vocabulary	Definition
Circulatory system	Bodily system made up of the heart, blood vessels and blood that delivers essential materials to cells whilst removing waste products
Transport	The circulatory system transports nutrients (from digested food) and water to every cell as well as oxygen
Atria	The plural of 'atrium'. The upper chambers of the heart
Ventricles	The lower chambers of the heart
Valves	Found between the atria and ventricles they open and close to allow the blood to flow through the heart
Aorta	The largest artery supplying oxygenated blood to the rest of the body
Arteries	Carry blood with oxygen from heart
Veins	Carry blood depleted of oxygen back to heart
Capillaries	Tiny vessels where oxygen gets transferred to cells
Pulse rate	The number of heart beats per minute

Knowledge Organiser- Science Year 6- Circulation





Blood Vessels

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Components of Human Blood

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