

Forest Academy. Upper Key Stage Two.
Science Knowledge Organiser: Animals including Humans.

I am learning to:

- identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood
- recognise the impact of diet, exercise, drugs and lifestyle on the way my body functions
- describe the ways in which nutrients and water are transported within animals, including humans.



Key Vocabulary:

Word	Definition:
arteries	tubes in your body that carry oxygenated blood from your heart to the rest of your body.
blood	red liquid that circulates in arteries and veins, carrying oxygen to and carbon dioxide from tissues in the body.
blood vessel	narrow tubes that your blood flows through.
carbon dioxide	a gas produced by animals and people breathing out.
circulatory system	the system responsible for circulating blood through the body, that supplies nutrients and oxygen to the body and removes waste products such as carbon dioxide.
cycle	a series of events that are regularly repeated in the same order.
drugs	a drug is a substance that has an effect on the body: medicines are drugs that help people suffering from pain or disease. Some drugs can have a bad effect on the body.
heart	the organ in your body that pumps blood around the body.
heart rate	your heart rate is how many times your heart beats in one minute.
lifestyle	the way in which a person chooses to live for example a healthy lifestyle.
lungs	two organs in your chest which fill with air when you breathe in. They oxygenate the blood and remove carbon dioxide from it.
muscles	a band of fibrous tissue that can contract and produce movement in the body.
nutrients	substances that help animals and plants grow.
oxygen	a colourless gas that plants and animals need to survive.
pumps	the act of forcing gas or liquid into something.
transported	when something is moved from one place to another.

The Circulatory System:

The circulatory system allows blood to circulate and transport nutrients, oxygen, hormones and blood cells to and from the cells in the body to provide nourishment and help fight diseases.

Diagram: The Circulatory System

The circulatory system is made up of the heart, lungs and blood vessels.

Arteries carry oxygenated blood from the heart to the rest of the body.

Veins carry deoxygenated blood from the body to the heart.

Nutrients, oxygen and carbon dioxide are exchanged via the capillaries.

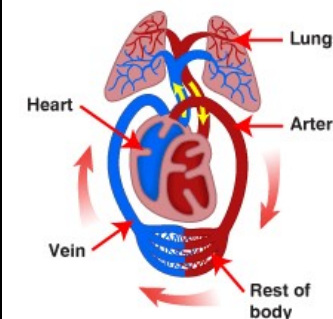
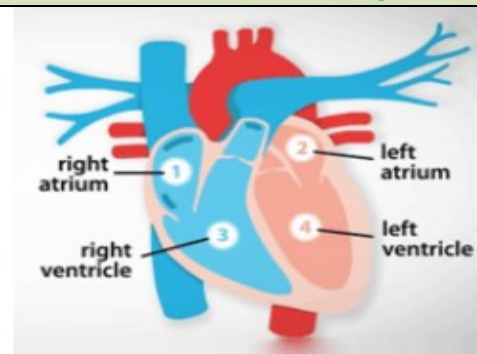


Diagram: The Heart

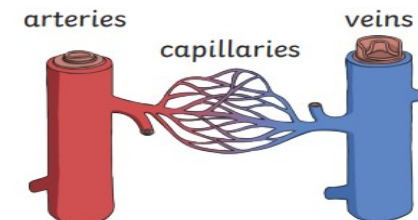


■ Deoxygenated
■ Oxygenated

The heart is composed of four chambers; the right atrium, the right ventricle, the left atrium and the left ventricle. The rate that your heart pumps is called your pulse.

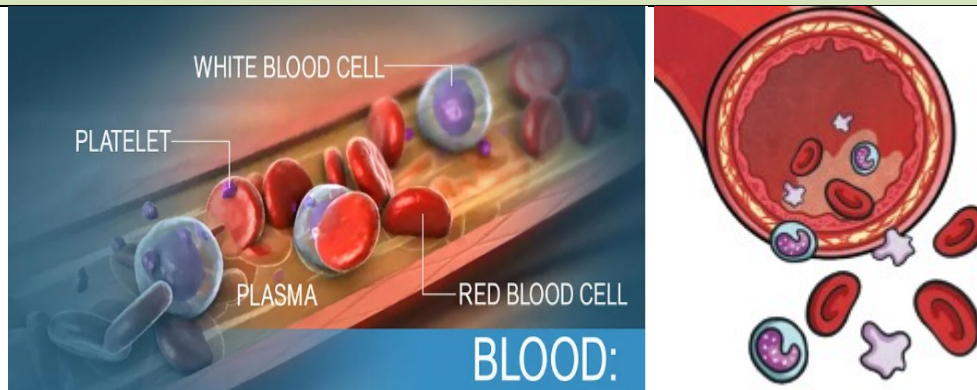
What is the heart? The heart is a muscle. It pumps blood all around the body.

What are blood vessels?



Blood vessels are a series of tubes inside your body. They move blood to and from your heart.

Diagram: The Blood



Blood transports materials around the body and protects against disease. It transports gases (mostly oxygen and carbon dioxide), nutrients – including water and waste products. It contains:

- Red blood cells which transport oxygen.
 - White blood cells which protect against disease.
 - Blood platelets which help the blood to clot and repair a cut.
- Plasma which is a liquid that carries these cells. It also transports important nutrients.

Key Scientist: Barbara Casadei



- Is a Professor of Cardiovascular Medicine at the University of Oxford.
- She works for the British Heart Foundation researching cures for many different heart conditions.
- Barbara a passionate supporter of the career of women in science.

Maintaining a healthy Circulatory System.

Things that can maintain a healthy circulatory system and healthy body:

Exercise.



Regular exercise helps to improve health by:

- Removing fatty deposits from the body.
- Toning muscles and reducing fat.
- Increasing fitness (ability to do high intensity activities for longer).
- strengthens muscles including the heart muscle;
- improves circulation;
- increases the amount of oxygen around the body;
- releases brain chemicals which help you feel calm and relaxed;
- helps you sleep more easily.

Things that can maintain a healthy circulatory system and healthy body: Diet.

A healthy diet involves eating the right types of nutrients in the right amounts.



Eating the right foods provide the nutrients we need for our bodies to function well.

Things that can harm the circulatory system:

Drugs, alcohol and smoking have negative effects on the body.



*Smoking and drinking alcohol can be harmful to our health.

- Tobacco can cause short-term effects such as shortness of breath and loss of taste and long term effects such as lung disease and cancer.
- Alcohol can cause short term effects such as addiction and long term effects such as organ damage and cancer.

