Birch Copse Primary School – Knowledge Organiser			
Science Topic:	**Animals Including Humans**	**Year 6**	**Term: Spring**

What should I already know and when did I learn this?

- I know the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals including humans)
- I know that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. (Y3 - Animals including humans)
- I know the simple functions of the basic parts of the digestive system in humans. (Y4 - Animals including humans)
- I know the different types of teeth in humans and their simple functions. (Y4 - Animals including humans)

What will I know by the end of the unit?

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

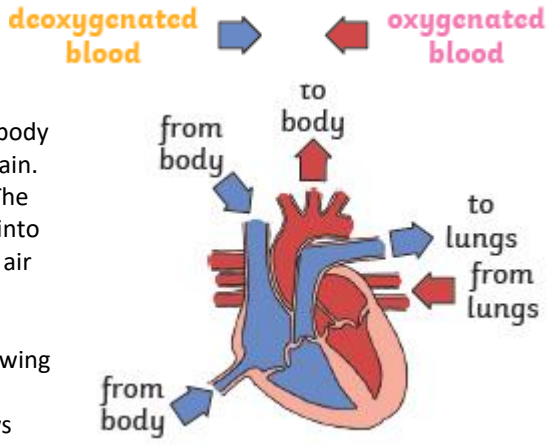
Key Vocabulary

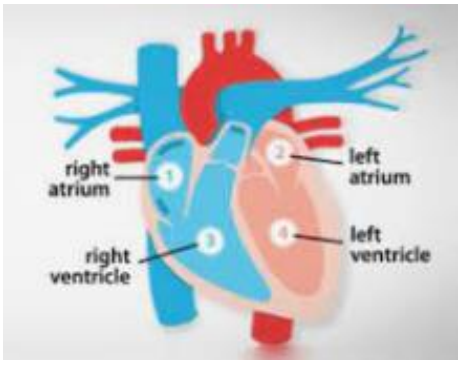
Circulatory System	A system which includes the heart, veins, arteries and blood transporting substances around the body.	Heart	A muscular organ that pumps the blood through the circulatory system. In humans, there are four chambers with two atria and two ventricles.
Blood vessel	A tube through which the blood circulates in the body. Blood vessels include a network of arteries, capillaries and veins.	Lungs	The lungs are a pair of breathing organs located with the chest which remove carbon dioxide from and bring oxygen to the blood.
Arteries	A tube carrying oxygenated blood away from the heart and around the body.	Oxygenated	Blood that contains oxygen. The blood picks up the oxygen in the lungs before travelling back to the heart to be pumped around the body.
Capillaries	A small blood vessel which connects the arteries and veins.	Deoxygenated	Blood that is depleted (lacking) of oxygen.
Veins	A tube carrying deoxygenated blood from the body to the heart.	Nutrients	Substances that animals need to stay alive and healthy.

Key Knowledge - The Circulatory System

The circulatory system is the system that circulates blood through the body. The heart is a powerful muscle that is situated between your lungs, protected by the ribcage. The heart pumps blood to the lungs to get oxygen. The heart pumps the oxygenated blood to the rest of the body.

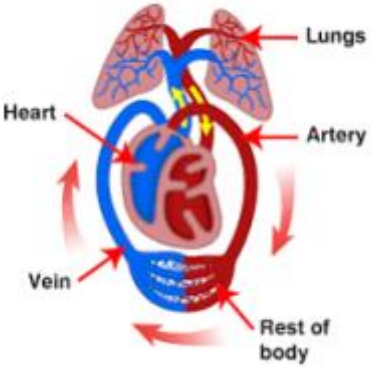
Mammals have hearts with four chambers. The blood that has come from the body is deoxygenated, and the blood that has come from the lungs is oxygenated again. (The blood isn't actually red and blue; it is just shown this way on a diagram.) The main functions of your lungs are to transport oxygen from the air you breathe into your bloodstream while taking away carbon dioxide, which is released into the air when you breathe out.





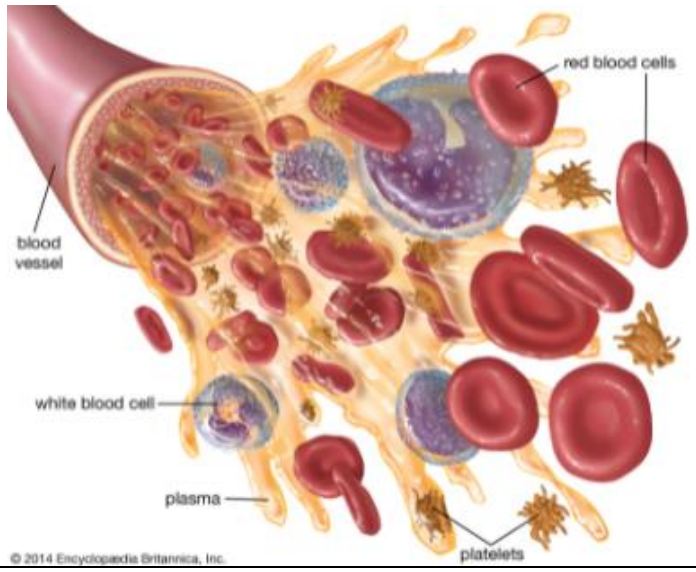
The circulatory system has the following steps-

1. Deoxygenated blood flows into the heart from the body through the veins.
2. This blood is pumped out to the lungs through the pulmonary artery.
3. Blood is then oxygenated in the lungs.
4. Blood returns to the heart through the pulmonary vein.
5. The oxygenated blood is then pumped out of the heart through the aorta.
6. The blood travels around the body delivering oxygen and nutrients to the organs.



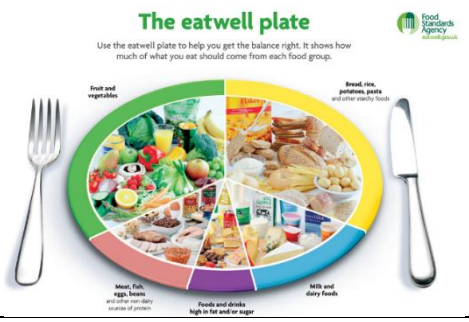
Blood cells make up about half the amount of blood. There are three main types of blood cell: red cells, white cells, and platelets.

Red blood cells main job is to transport oxygen.
White blood cells help to keep the body healthy.
Platelets are the smallest of the blood cells. They are able to stick to one another and form blood clots. Clots plug holes that may develop in the walls of blood vessels. This helps stop bleeding.
The watery part of the blood is the plasma. Most of the plasma is water. Plasma also contains nutrients, chemicals, hormones, and wastes.



The effect of diet, exercise and lifestyle

- A healthy and balanced diet is important as fatty rich foods can clog arteries and veins, preventing blood from delivering what is needed.
- A healthy diet involves eating the right types of nutrients in the right amounts.
- Regular exercise can also improve the health of a person by removing fatty deposits from the body and will help to strengthen the organs and pulse rate.
- Drugs, alcohol and smoking have negative effects on the body.



Investigate

- Produce a piece of writing that demonstrates the key knowledge e.g. explanation text, job description of the heart.
- Explain both the positive and negative effects of diet, exercise, drugs and lifestyle on the body.
- Present information e.g. in a health leaflet describing impact of drugs and lifestyle on the body.