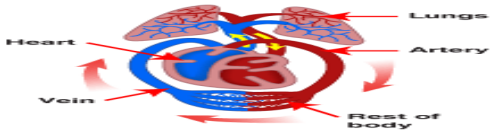
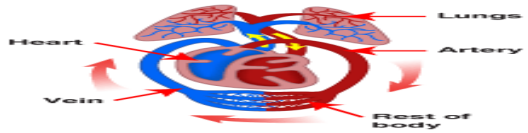


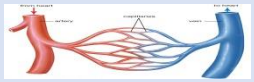
Body Pump



What are the key biological facts that I need to know?

Scientific Fact 1	Scientific Fact 2	Scientific Fact 3	Scientific Fact 4	Scientific Fact 5	Scientific Fact 6
If you were to lay out all of the arteries, capillaries and veins in one adult, end-to-end, they would stretch about **60,000 miles**.	It takes **20 seconds for blood to circulate the entire body**. Oxygenated blood leaves the aorta at about 1 mile an hour.	The power from the heart ranges from 1-5 watts per minute, which is the equivalent to the power used by a 60 watt bulb.	**Red blood cells** live for 4 months and make 250,000 trips around the body before returning to the bone marrow, to die.	Between 2.5 and 3 million red blood cells (called **erythrocytes**) are lost and replaced every second.	A blue whale's heart is about the size of a small car, and only beats five times per minute.

Key Scientific Vocabulary - words that are related to the topic you are investigating and that must be used in your work

Word	Definition
aorta 	The main artery carrying blood from the heart to other parts of the body.
arteries 	The thick tubes that carry blood from the heart to other parts of the body.
blood vessels 	The tubes through which the blood flows.
chambers 	A space in the heart which is separated from the rest.
circulatory system 	The system that moves blood through the body. It includes heart, arteries and veins.
deoxygenated blood 	When oxygen has been removed from the blood – it is carrying more carbon dioxide.
oxygenated blood 	Blood that contains more oxygen – straight from the lungs.
veins 	The tubes that carry blood from all parts of the body back towards the heart.

Sticky Knowledge- what we want you to know at the end of the unit
To know that our senses helps us explore the world around us.

To know how the circulatory system works
- the circulatory system is made up of three parts: the heart, blood vessels and the blood itself
- the heart keeps all the blood in your circulatory system flowing
- the blood travels through a network of blood vessels to everywhere in your body
- it carries useful materials like oxygen, water and nutrients and removes waste products like carbon dioxide

To know how the heart pumps blood around the body
- it is a muscle which functions as a really powerful **pump**

To know what the main functions of the heart are
- the **heart** takes in **blood** low in oxygen from the **body**
- it **pumps** it through the right side of the **heart** and on to the lungs
- In the lungs the **blood** passes through very small **blood** vessels and absorbs oxygen

To know the main functions of the blood
- it brings oxygen and **nutrients** to all the parts of the body so they can keep working
- blood carries carbon dioxide and other waste materials to the lungs, kidneys, and digestive system to be removed from the body
- blood also fights infections, and carries hormones around the body

To know how the blood transports gases around the body
- red **blood** cells **are** responsible for picking up the oxygen in the lungs and carry oxygen to the **body** cells
- the red **blood** cells then collect the carbon dioxide (waste **gas** product) produced by our cells and **transport** the carbon dioxide back to the lungs which we breathe out when we exhale

To know what the function of valves is
- the body has a network of **blood vessels** that carry blood around it
- clever doors called **valves** make sure that the blood cannot go the wrong way

The scientific skills that you will be learning to use to answer the scientific questions

What is science?
Science is the exciting study of the nature and behaviour of natural things and the knowledge that we obtain about them. We ask questions that need answers. In order to answer these questions successfully, you will lean to use all these skills.

Using secondary sources of information:
You will learn to develop your research enquiries help to develop your scientific literacy, since you will learn to compare and evaluate information from different sources.
As you learn to recognise the differences between fact and opinion, you will develop life skills that will support you in being citizens of the twenty-first century. You will be able to work collaboratively with your peers to ensure that you gain a greater understanding of the subject that we are studying.
How have our ideas about the human body changed over time?
How have our ideas about the diseases that affect the circulatory system changed over time?
Why do you think this has happened?
Can you explain your answer?