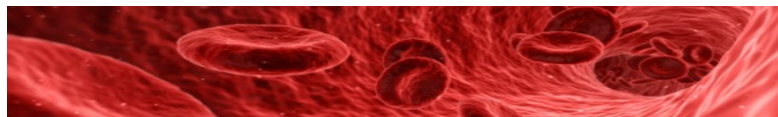


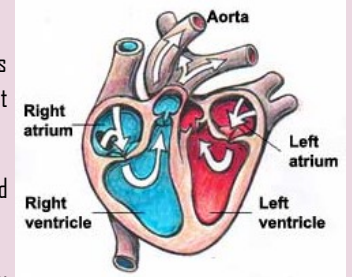
Animals including Humans Class 4 Science Knowledge Organiser Summer 1 2021

Key vocabulary	
circulatory system	A system which includes the heart, veins, arteries and blood transporting substances around the body.
heart	An organ which constantly pumps blood around the circulatory system.
blood vessels	The tube-like structures that carry blood through the tissues and organs. Veins, arteries and capillaries are the three types of blood vessels.
capillaries	Capillaries are the smallest blood vessels in the body, and it is here that the exchange of water, nutrients, oxygen and carbon dioxide takes place.
arteries	Arteries carry oxygenated blood away from the heart.
veins	Veins carry deoxygenated blood towards the heart.
plasma	The liquid part of blood contains water and protein. This is called plasma.
red blood cells	Red blood cells carry oxygen through your body.
white blood cells	White blood cells fight infection when you're sick.
platelets	Platelets help you stop bleeding when you get hurt.
drug	A substance containing natural or man-made chemicals that has an effect on your body when it enters your system.
alcohol	A drug produced from grains, fruits or vegetables when they are put through a process called fermentation.
nutrients	Substances that animals need to stay alive and healthy.



Key Knowledge:

- Mammals have **hearts** with four chambers. Notice how 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; we just show it like that on a diagram.
- The **heart** pumps blood to the lungs to get oxygen. It then pumps this **oxygenated blood** around the body.
- If you linked up all of the body's blood vessels, including arteries, capillaries, and veins, they would measure over **60,000** miles.
- Plasma is liquid. The other parts of your blood are solid.
- Blood transports gases (mostly oxygen and carbon dioxide); **nutrients** (including water); and waste products.
- Regular exercise 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; and strengthens bones. It can even help to stop us from getting ill.
- Drugs, alcohol** and **smoking** have negative effects on the body.



William Harvey (1578-1657)



William Harvey is recognised as the man who discovered and published the first accurate description of the human circulatory system, based on his many years of experiments and observations as a scientist

Dame Harriette Chick

(1875 – 1976)



Dame Harriette Chick lived in Victorian England, and she focused on studying soldiers' rations in order to prevent vitamin C and thiamine deficiency, and ultimately scurvy and beriberi. At the end of the war, Harriette travelled to Vienna to share her knowledge on vitamins, in a country where there was a serious public health problem.