

# Animals including Humans

Potential careers: cardiology physician, sports nutritionists, health physicist, vet

Biology

## Lesson Sequence

To understand the function of the heart and its role in the circulatory system

To identify and compare blood vessels

To explore blood

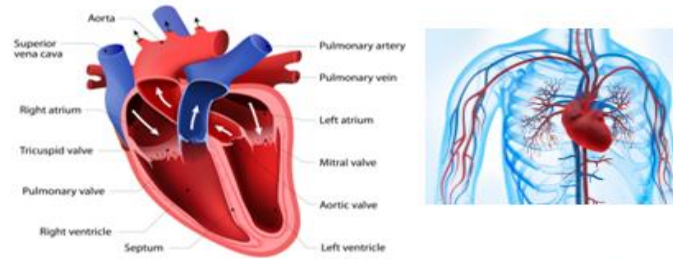
To learn how the body transports water and nutrients

To investigate what affects your heart rate

To learn about the impact of drugs and alcohol on the body

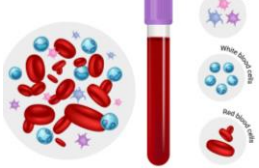
## The Heart

The heart pumps blood, carrying nutrients and oxygen, around every part of the body.



The red vessels are **arteries** and the blue vessels are **veins**. **Arteries** have thick, muscular walls and carry **oxygenated** blood from the heart to the rest of the body. **Veins** carry **deoxygenated** blood back to the heart and have thinner walls. **Capillaries** are microscopic vessels which link the veins and arteries together.

## COMPOSITION OF BLOOD



**Red blood cells** carry oxygen.

**White blood cells** fight infection as part of the immune system. **Platelets** help to clot (thicken) the blood and form a scab.

**Plasma** is the fluid part of the blood, which transports

## Vocabulary

	circulatory system	the system that controls the flow of blood around the body
	BPM	beats per minute measuring heart rate
	diet	the kind of food an animal usually eats
	pulse	the rhythmical throbbing of the arteries as blood is pumped through them
	oxygenated	containing oxygen
	deoxygenated	not containing oxygen
	atrium	the upper chambers of the heart
	ventricle	the lower chambers of the heart
	vessel	tube which circulates the blood through the body
	valve	flaps which open and close to allow blood flow
	diffusion	diffusion is the movement of all liquids and gases
	osmosis	osmosis is the movement of water only

## How to Check Your Pulse



## Significant Scientist

William Harvey discovered the nature of blood circulation and the function of the heart as a pump. Before this, people thought that blood travelled through the body by the contraction of the arteries.



## Science Skill Wheel



Drugs, including alcohol, can cause liver damage, poor sleep, high blood pressure, and different types of cancer. Drugs can be classified into four groups - painkillers, stimulants, depressants and hallucinogens.

## Prior Knowledge:

- Which things are living and which are not.
- Classification of animals (e.g. amphibians, reptiles, birds, fish, mammals, invertebrates)
- Animals that are carnivores, herbivores and omnivores.
- The basic needs of animals for survival (water, food, air)
- The importance of exercise, hygiene and a balanced diet.
- Animals get nutrition from what they eat.
- Some animals have skeletons for support, protection and movement.
- The basic parts of the digestive system.
- The different types of teeth in humans.
- Respiration is one of the seven life processes.

## Looking After Our Heart



To keep our heart and body healthy, we need to:

- eat a balanced diet (not too much sugar or fat);
- exercise regularly;
- drink approximately 2 litres of water a day;
- limit alcohol intake, in adults;
- get approximately 8 hours of sleep.