



## Year 6 Science

### Spring 2

## The Circulatory System

### Diet, drugs and lifestyle

### Science strand -

### Biology

#### Key Facts

#### THE CIRCULATORY SYSTEM –

A group of organs and vessels which transport blood around the body. It consists of:

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.

**Blood**

- Transports oxygen and nutrients to the lungs and tissues
- Forms blood clots to prevent blood loss
- Carries cells to fight infection
- Brings waste products to organs
- Regulates body temperature

**The heart**

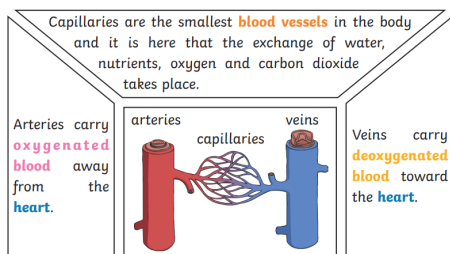
The heart pumps oxygen-rich blood to every cell in the body.

**Blood vessels**

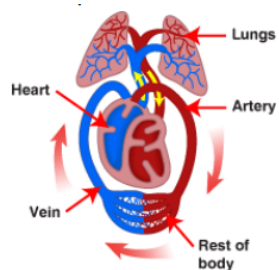
A network of arteries and veins that provide the pathway for blood to travel.

#### BLOOD VESSELS

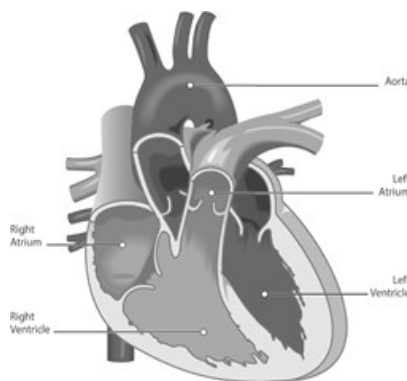
These are the tubes that carry blood around the body. There are three main types:



#### THE HEART



The heart pumps blood to the lungs to get oxygen. The oxygenated blood is then pumped around the body. Arteries carry oxygenated blood away from the heart. Veins carry de-oxygenated blood towards the heart.



#### BLOOD

Plasma is liquid. The other parts of your blood are solid.



Red blood cells carry oxygen through your body.

Platelets help you stop bleeding when you get hurt.



White blood cells fight infection when you're sick.

#### Vocabulary

Word	Definition
Arteries	Muscular-walled tubes which carry blood from the heart to the rest of the body.
Atrium	Each of the two upper cavities of the heart from which blood is passed to the ventricles.
Capillaries	Thin blood vessels that connect arteries to veins.
Circulatory system	It is made up of the blood, heart and blood vessels. It <b>delivers nutrients, water, and oxygen</b> to the body cells and <b>carries away wastes</b> such as carbon dioxide that body cells produce.
Plasma	Blood is made up of blood cells and plasma. It is a yellowish liquid that has nutrients, proteins, hormones and waste products.
Pulse	A rhythmical throbbing of the arteries as blood is propelled through them, typically as felt in the wrists or neck.
Red blood cells	Red blood cells carry fresh oxygen throughout the body using a protein called haemoglobin. They also carry carbon dioxide to the lungs for removal.
Veins	Muscular-walled tubes which carry blood from the body to the heart.
Balanced diet	A diet consisting of a variety of different types of food and providing adequate amounts of the nutrients necessary for good health.
Calories	A unit for measuring an amount of energy produced by food.

### Knowledge and Understanding:

#### Children will learn:

- Building on learning about the human body from Key Stage 1 and also during lower Key Stage 2.
- The human circulatory system and how it enables their bodies to function.
- The main parts of the circulatory system: the heart, blood vessels (arteries, veins and capillaries) and blood, and how these work together to deliver oxygen and nutrients to every part of the body.
- How the heart works, the main components of blood and the function of the different types of blood vessels.
- How water is transported through the body and develop their understanding of the importance of water to human health.

### Key skills and concepts:

#### Children will be able to:

- Use **secondary sources** of information with increasing independence in order to find answers to questions about the functions of different parts of the circulatory system that they cannot investigate first hand. This should involve them using quality non-fiction books, web-based material and health education publications.
- Children will **report and present findings** from their enquiries in a variety of ways, both orally and in written forms including labelling diagrams, drawing conclusions, identifying causal relationships and explaining their thinking.
- They can carry out a range of pulse rate **investigations** such as fair tests to investigate the effect of different activities on their pulse rate.
- **Identify patterns** - exploring which groups of people may have higher or lower resting pulse rates
- **Make Observation over time** - how long does it take my pulse rate to return to my resting pulse rate (recovery rate)

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



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



### Key Questions

- What is the circulatory system?
- What is blood?
- What are the functions of the heart?
- How does blood flow to the heart?
- What is oxygenated and deoxygenated blood?
- How can we dissect the heart?
- What is diet?
- What are drugs and how do they affect the body?
- What are cigarettes?
- How can I plan a fair test about heart rate and exercise?
- How can I conduct a fair test about heart rate and exercise?
- How can I evaluate a fair test about heart rate and exercise?

**LIFESTYLE** - exercise is important to help keep our bodies healthy. Regular exercise:

- Strengthens muscles, including the heart.
- 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
- Strengthens bones.

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