

# The Knowledge

## Supporting the National Curriculum



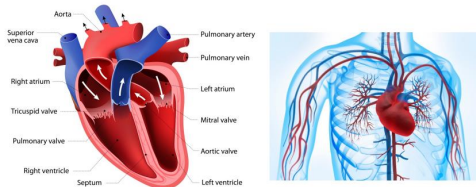
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# Animals Including Humans

**ARDLEIGH GREEN**  
JUNIOR SCHOOL

Year 6  
Science

## The Human Heart



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

The heart has **4 main tubes**, called **vessels**. **Deoxygenated** blood enters the heart from the body via the **vena cava**. The heart **pumps** this deoxygenated blood to the **lungs**, via the **pulmonary artery**, where it becomes **oxygenated**.

**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.



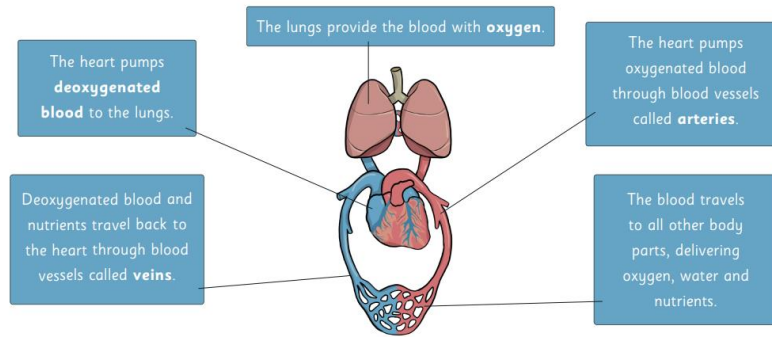
### To keep our heart and body healthy, we need to:

- 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**.

**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.

## The Circulatory System

The body's **circulatory system** is responsible for transporting **nutrients**, **water** and **oxygen** to the billions of **cells** all around your body. It also carries away waste, such as **carbon dioxide**, that the cells produce. It is an amazing system that travels through your entire body **connecting** all your body cells.



## Absorbing Water and Nutrients

We **absorb water** and **nutrients** through the **food** we eat. The **small intestine** is lined with villi. Villi have **veins** and **arteries** running through them. The **blood** in the arteries **delivers oxygen** to the intestine. **Nutrients** are absorbed into the **blood**, which are then taken away to other parts of the body. **Water** is also absorbed in this way. The **blood carries** the **water** and **nutrients** to the parts of the body that need it.



## Key Vocabulary

- organ** - a group of tissues that perform a specific function in the body
- Circulatory system** - the heart along with arteries and blood vessels which transport blood around the body
- Respiratory system** - the set of organs which allows a person to breathe and exchange oxygen and carbon dioxide
- blood vessels** - the tubes that carry blood around the body (veins, arteries and capillaries)
- veins** - the tubes that carry deoxygenated blood back to the heart
- deoxygenated** - refers to blood that is not carrying oxygen
- oxygenated** - containing oxygen
- arteries** - the tubes that carry oxygenated blood around the body
- diet** - the food and drink that a person/animal consumes
- drug** - any substance which changes how we think or feel
- nicotine** - a chemical found in tobacco which is highly addictive
- addiction** - an urge to do something which is difficult to control or stop

## Test Yourself

- What is the circulatory system?
- How does our heart work?
- How does exercise affect my heart rate?
- How can I measure my own pulse?
- How does the body transport water and nutrients?
- What makes up our blood?
- What makes up our blood vessels?
- What can damage our health?