

# HEAP BRIDGE VILLAGE PRIMARY SCHOOL

## Knowledge Organiser: Science – Animals and Humans

### Key objectives:

Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood

Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function

Describe the ways in which nutrients and water are transported within animals, including humans

### Scientific vocabulary:

#### Challenge vocabulary:

**Artery** – Carries blood away from the heart to the rest of the body.

**Veins** – Carry blood back to the heart.

**Capillaries** – transfer oxygen and other nutrients from the bloodstream to other tissues in the body; they also collect carbon dioxide.

**Carbon dioxide** – waste product that we breathe out.

**Blood vessels** – a tube like structure carrying blood through the tissues and organs

**Valves** – flaps that open and close to let the blood travel through in one direction

**Solvents** – a certain kind of chemical

**Villi** -small, finger-like structures in the small intestine. They help to absorb digested food.

#### Subject Specific vocabulary:

**Organs** – parts of the body with a special job to do

**Nutrients** – a substance that is needed for healthy growth and development.

**Calories** - a unit of measurement of energy.

**Protein** – an essential nutrient for the human body. One of the building blocks of body tissue.

**Fibre** – a definition

**Carbohydrates** – Carbohydrates are the sugars and fibres found in fruits, vegetables and milk products.

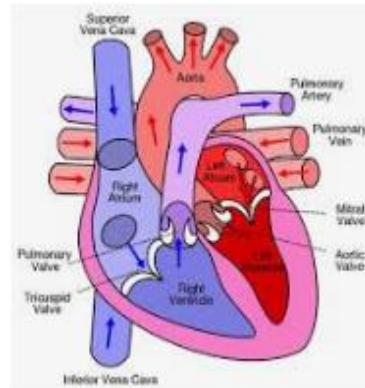
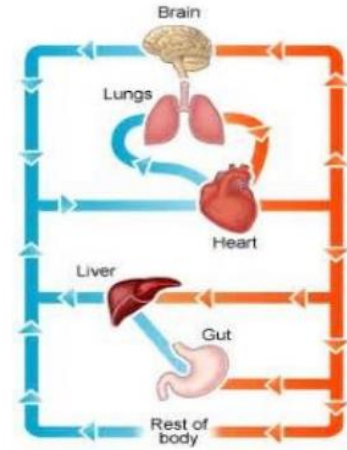
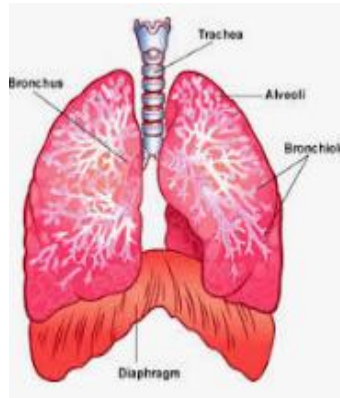
**Obese** – To be heavily overweight.

**Oxygen** – Gas needed to survive.

*Heart, pumps, lungs, liver, stomach, diet, exercise, drugs, alcohol, fitness, smoking, muscle, blood, oxygen, balanced diet, hygienic, fluids, addictive, disease, cancer, addictive, lifestyle, nutrients, absorbed,*

### Scientific knowledge:

Can use a diagram to explain how the circulatory system works and the functions of the heart, blood vessels and blood.



### What? (Key Knowledge)

#### The Human Circulatory System

The main parts of the human circulatory system	Heart Blood vessels Blood
What does the heart do?	<ul style="list-style-type: none"> <li>The heart pumps the blood through the blood vessels so that food and oxygen can get to all the parts of the body</li> </ul>
What do the blood vessels do?	<ul style="list-style-type: none"> <li>The blood vessels carry the blood around the body</li> </ul>
There are three main types of blood vessels	<ul style="list-style-type: none"> <li><b>The arteries</b>, which carry the blood away from the heart</li> <li><b>The capillaries</b>, which enable the actual exchange of energy between the blood and the tissues</li> <li><b>The veins</b>, which carry blood from the capillaries back toward the heart</li> </ul>
What does the blood do?	<ul style="list-style-type: none"> <li>Blood moves food and oxygen around the body.</li> </ul>

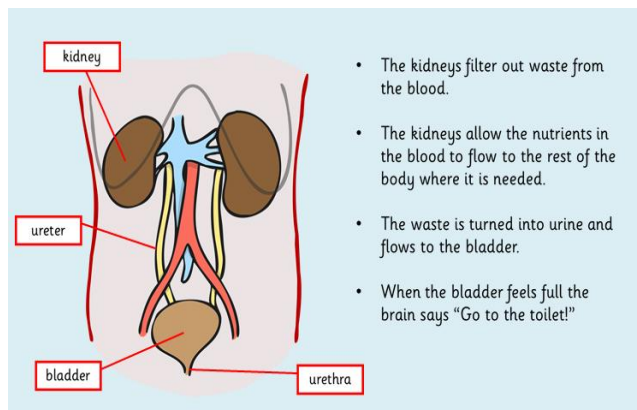
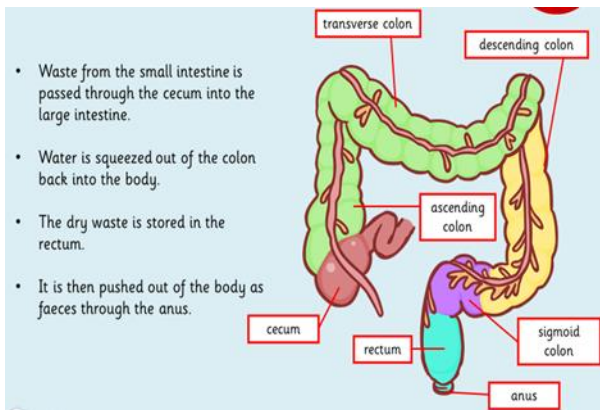
**Scientific knowledge:**

Can recognise the impact of diet, exercise, drugs and lifestyle on the way my body functions.



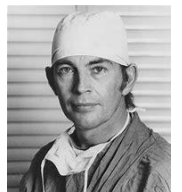
Healthy Lifestyle	
Things humans need to be healthy	<ul style="list-style-type: none"> <li>To have a balanced diet of the right amount of different types of food and drink</li> <li>To exercise regularly</li> <li>To be hygienic</li> </ul>
What is a balanced diet?	<ul style="list-style-type: none"> <li>See the Eatwell guide: (<a href="http://www.nhs.uk/Livewell/Goodfood/Documents/The-Eatwell-Guide-2016.pdf">http://www.nhs.uk/Livewell/Goodfood/Documents/The-Eatwell-Guide-2016.pdf</a>)</li> <li>Drink 6-8 cups/glasses of fluids each day</li> </ul>
Health risks that can damage the body	<ul style="list-style-type: none"> <li>Smoking</li> <li>Drugs</li> <li>Alcohol</li> <li>Obesity</li> </ul>
Dangers of smoking	<ul style="list-style-type: none"> <li>Addictive</li> <li>Can cause heart disease and cancer</li> </ul>
Dangers of drugs	<ul style="list-style-type: none"> <li>Addictive</li> <li>Can damage the brain or cause death</li> </ul>
Dangers of alcohol	<ul style="list-style-type: none"> <li>Ok in small amounts for adults</li> <li>Can damage the liver, heart and stomach</li> </ul>
Dangers of obesity	<ul style="list-style-type: none"> <li>Can cause heart disease</li> <li>Can lead to cancer</li> </ul>

- Nutrients are absorbed into the blood in the small intestine.
- There are tiny hair-like villi that help this process happen.
- The nutrients are carried in the blood to the different parts of the body that need them.



**Famous people/jobs**

**Dr Chris Barnard** performed the world's first human heart transplant. On 3 December 1967, South African doctor, Dr Christiaan (Chris) Barnard, performed the world's first human to human heart transplant at Groote Schuur Hospital in Cape Town (South Africa).



**Homework challenges:**

- I can present my understanding of the circulatory system by creating a model using materials such as wool, straws etc.
- I can explore my own lifestyle through a diet and exercise diary and consider changes I could make. Finding out what causes the heart to work harder/maximum heart rates.
- I can present my understanding of the topic through our class assembly.