

Subject Knowledge Organiser - Animals Including Humans - Year 6

What I have already learnt (Year 5)

- describe the changes as humans develop to old age

What I will have learnt by the end of my Key Stage

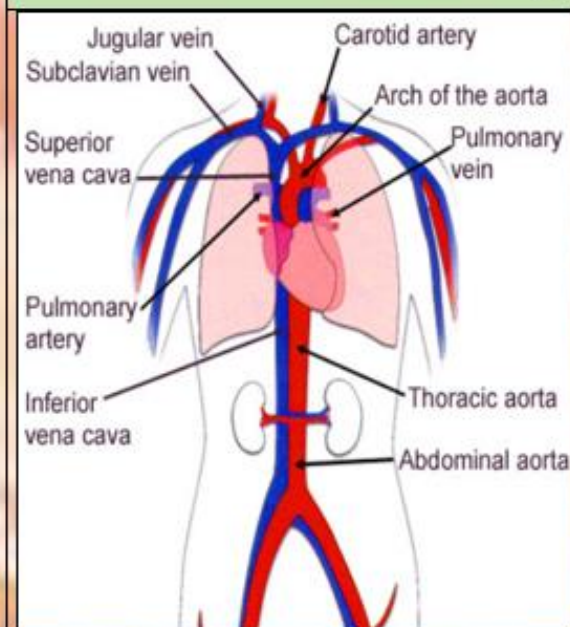
- describe the simple functions of the basic parts of the digestive system in humans
- identify the different types of teeth in humans and their simple functions
- construct and interpret a variety of food chains, identifying producers, predators and prey
- describe the changes as humans develop to old age
- 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

What I will have learnt by the end of the unit

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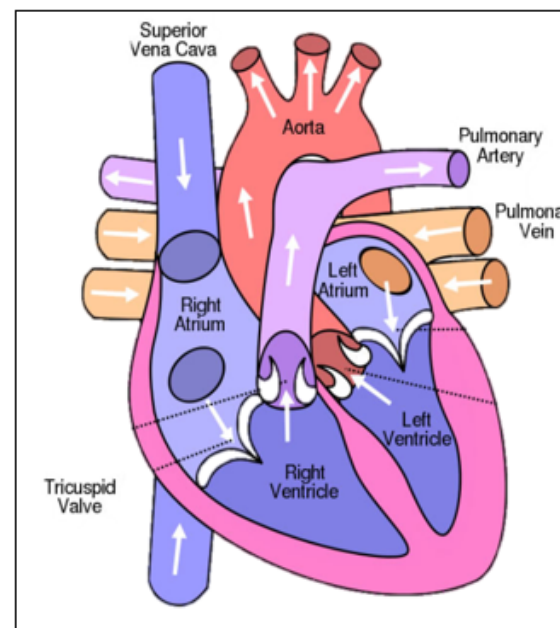
Key Knowledge

The Circulatory System



- The circulatory system is your body's delivery system. It is made up of your heart, blood and blood vessels.
- The human body needs a constant supply of blood to keep working. Blood delivers oxygen to all of the body's cells - without this, cells would die. The circulatory system gets blood (and the oxygen) all around your body.
- The heart pumps blood to the lungs via the pulmonary artery, where it picks up oxygen. It is then returned to the heart through the pulmonary vein.
- The heart then pumps the oxygenated blood to the rest of the body through the aorta and the other arteries.
- Veins are vessels that bring blood back to the heart.

The Heart



- The circulatory system is centred on the heart, an organ that works constantly to pump blood around the body.
- The heart is made up of four sections, called chambers. There are two sides to the heart (right and left) each of which have an atrium (at the top) and a ventricle (at the bottom).
- The job of the 'atria' (the word for the two atriums) is to fill with the blood returning to the heart before pushing it to the ventricles.
- The left atrium receives blood from the lungs and the right atrium receives it from the rest of the body.
- The job of the ventricles is to push the blood out of the heart. The left ventricle pushes blood to the lungs and the right ventricle pushes blood to the rest of the body.

Key Skills I Will Learn/Use

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments

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KEY VOCABULARY

Arteries - tubes in your body that carry oxygenated blood from the heart to the rest of your body.

Atrium - the part of the heart that receives blood from the veins.

Blood Vessels - narrow tubes that your blood flows through.

Carbon Dioxide - a gas produced by animals and people breathing out.

Circulatory System - the system responsible for circulating blood through the body, that supplies nutrients and oxygen to the body and removes waste products such as carbon dioxide.

Deoxygenated - blood that does not contain oxygen.

Oxygenated - blood that contains oxygen.

Heart - the organ in your body that pumps blood around.

Lungs - two organs in your chest which fill with air when you breathe in. They oxygenate the blood and remove carbon dioxide from it.

Nutrients - substances that help animals and plants grow.

Organ - a part of the body that has a particular purpose and performs specific functions.

Oxygen - a colourless gas that plants and animals need to survive.

Respiration - inhaling oxygen and exhaling carbon dioxide. Another word for breathing.

Veins - a tube in your body that carries deoxygenated blood through your body.

My Skills and Knowledge that I may use from other subjects

Literacy- I can use my literacy knowledge to write about my findings

Mathematics- I can use my measuring skills to carry out simple tests and record my findings using diagrams and graphs

Geography- I can use my knowledge about animals and their habitats in different countries around the world.

Opportunities for teaching Diversity, Equality (including protected characteristics) and expanding Cultural Capital

Get to meet a scientist!
Explore people who use science in their jobs.

- I'm a Scientist, Get me out of here! - A super-curricular science outreach education & engagement activity (imascientist.org.uk)
- Science for Everyone (science4everyone.org)

Impact of Diet, Exercise, and Drugs



Diet

-A healthy, balanced diet can have a huge effect on a person's health. People who eat the right balance of fresh, healthy foods are less prone to chronic illnesses and diseases.

-Carbohydrates are used by the body to create glucose, the body's main energy source. Fat is also helpful for energy, but too much fat in a person's diet causes them to gain weight. Protein helps to build and repair muscles, but too much can cause indigestion and intestinal problems.

Exercise



-As we exercise, our muscles need more oxygen. So, we breathe quicker, helping our lungs to take in more oxygen.

-Our heart needs to pump blood more quickly to get all of the oxygen around the body. In order to do this, our heart rate increases.

-Regular exercise helps our bones and muscles to become stronger. It also helps the heart and lungs to become healthier.

Drugs



-A drug is a chemical that has an effect on your body.

-Some drugs are prescribed by doctors to make people healthy. Other, illegal drugs can have a dangerous effect on our health.

-Alcohol is a depressant. Alcohol can cause damage to the liver and brain. Cigarettes contain nicotine, which is a stimulant, and is addictive. Cigarettes cause damage to the lungs and heart.

Key Questions

What are saturated fats?
How greasy are some foods?
What are the important food groups? What is a healthy meal?
What do we mean by Five-a-day?
Why is exercise important?

Key Concepts/Strands

- Biology
- Chemistry
- Physics
- Scientific Enquiry
- Science for the future

Transportation of Water in the Body

Rehydration - water is drunk through the mouth.



Absorption - water is absorbed by the intestines and is carried in the bloodstream.



Transportation - water is taken in blood to different parts of the body.



Excretion - waste water is passed out as urine.