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Science: Animals including Humans Year 6

Definition: Animal (noun) a living organism that feeds on organic matter, typically having specialized sense organs and nervous system and able to respond rapidly to stimuli.
"wild animals adapt badly to a caged life"

Biology definition: The word **biology** is derived from the greek words /bios/ **meaning** /life/ and /logos/ **meaning** /study/ and is **defined** as the science of life and living organisms. An organism is a living entity consisting of one cell e.g. bacteria, or several cells e.g. animals, plants and fungi.

POS:

- 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 body functions
- describe the ways in which nutrients and water are transported within animals, including humans.

Prior learning :
describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene
identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
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

Links to other science topics:
Year 6 Evolution and inheritance – how animals adapt to their environment

Disciplinary concepts:
Structure: How is the circulatory system arranged?
Function: what is the function of the heart, blood vessels and blood?
Process: how are water and nutrients transported around the body?

Common misconceptions:
It is a **common myth** that veins are **blue** because they carry deoxygenated **blood**. **Blood** in the human body is red regardless of how oxygen-rich it is, but the shade of red may vary. The level or amount of oxygen in the **blood** determines the hue of red.

Core Knowledge:
The heart pumps blood in the blood vessels around to the lungs.
Oxygen goes into the blood and carbon dioxide is removed.
The blood goes back to the heart and is then pumped around the body.
Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed. As they are used, they produce carbon dioxide and other waste products.
Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. This is the human circulatory system.
Diet, exercise, drugs and lifestyle have an impact on the way our body functions. They can affect how well out heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think, and generally how fit and well we feel.
Some conditions are caused by deficiencies in our diet e.g. lack of vitamins.

Wider Knowledge:
Humans have been studying the workings of the body since ancient times. The Greek physician Galen was cutting up animals to study circulation and other body functions around 160 AD.
The first successful heart transplant was carried out by South African surgeon Christiaan Barnard in 1967. In the preceding years, Barnard had experimented extensively on animal hearts, carrying out more than 50 dog heart transplants before attempting the procedure on a human.
https://www.reachoutcpd.com/courses/upper-primary/body-systems/body-systems-big-questions/objectives/

Working scientifically: 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 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.

End Goals:
Describe the functions of the heart.
To know how blood transports nutrients, water, gases and waste around the body.
Identify aspects of a diet that are healthy and unhealthy and the impact diet can have on the body, using scientific evidence.

CPD: Reach out CPD
Science Association / STEM website