Animals including humans: Healthy Bodies

Overview of unit / topic

Children will learn about historical health problems caused by poor diet, and how the work of scientists such as James Lind helped develop a better understanding of how diet affects health. They will then consider and describe how medical tests and trials might be conducted, or improved. Children will learn about the functions of the heart, lungs and circulatory system. Children will learn about what happens to the heart when we exercise, then conduct practical investigations where heart rate is measured. Children will learn about how muscles work, and how they work in groups to move the skeleton. They will then explore in greater depth how blood flow increases to different muscle groups during different types of exercise. Children will learn about what drugs are, how some are helpful and some are harmful. They will also consider ways in which drugs have side effects. Following this, children may explain differences between drugs, or their effects, in their own words.

Key Questions

Why is it important to have a healthy diet? What does it consist of?
How does our body transport oxygen and nutrients around the body?
What are the functions of the heart, lungs and circulatory system?
What happens to our heart when we exercise and why does this occur?
Can you identify some beneficial and/or harmful drugs? What could be the side effects of the drug?

Key Vocabulary

Scurvy	a disease caused by a deficiency of vitamin C, which particularly affected poorly nourished sailors until the end of the 18th century.	fibre	The main function of fibre is to keep the digestive system working properly
balanced diet	a diet consisting of a variety of different types of food and providing adequate amounts of the nutrients necessary for good health.	circulatory system	the system that circulates blood through the body, consisting of the heart, blood vessels and blood.
deficiencies	a lack of the essential nutrients for good health	oxygen (O2)	a colourless, odourless gas found in the air that is needed to support life
vitamins	essential for normal growth and are required in small quantities in the diet because they cannot be synthesized (made) by the body.	carbon dioxide (CO2)	a colourless, odourless gas produced by burning carbon and organic compounds and by respiration. It is naturally present in air and is absorbed by plants in photosynthesis.
protein	found in foods such as meat, fish, eggs, seeds, nuts, dairy products and lentils. Protein is very important for your body as it is protein that enables you to grow and to repair and maintain your body	Arteries	tubes forming part of the circulation system by which blood (mainly that which has been oxygenated) travels from the heart to all parts of the body.
fat	a source of energy which is used when blood sugar levels are low. They help to absorb certain vitamins your body needs. They provide insulation under the skin from the cold or the heat	veins	tubes forming part of the blood circulation system of the body, carrying in most cases oxygen-depleted (deoxygenated) blood towards the heart.
carbohydrates	There are two different types of carbohydrates. Simple carbohydrates are sugars. These can be the sugars found in sweets and in your sugar bowl but also the sugars in fruit and other foods. The other type of carbohydrates are starches. Starches are foods such as breads, rice, pasta, potatoes and cereals	capillaries	The tiny tubes, internal diameter of hair-like thinness, that transport blood to every part of the body.
pulse	a rhythmical throbbing of the arteries as blood is propelled through them.	Skeletal muscles	are attached to bones so that our bones can move.
heart	a organ that pumps the blood through the circulatory system	relax	Relaxing the muscles releases the bones again.

lungs	each of the pair of organs, which draws air in, so that oxygen can pass into the blood and carbon dioxide be removed	contract	becoming shorter and tighter in order to effect movement of part of the body
drugs	a medicine or other substance which has a physiological effect when ingested or otherwise introduced into the body.	nicotine	a toxic liquid which found in tobacco.

Key Knowledge and Understanding: What will we be learning about in this unit / topic?

To name the main parts of the human circulatory system (heart, lungs, blood vessels).
To investigate how muscles move the skeleton and how muscle activity requires increased blood flow.
To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.
To know ways in which nutrients and water are transported within animals, including humans.