Walton on the Hill Primary School

Medium Term Plan: 2025-26 - Science Aut 1

Year 6	Class Teacher (s):	LL/KR	Subject:	Animals, Including Humans: Exercise, Health and The Circulatory System

Term	Substantive Knowledge Content	Disciplinary Knowledge Content	Key Vocabulary:	Cross Curricular opportunities
	▪ 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 (in the long term and short term). ▪ Describe the ways in which nutrients and water are transported within animals, including humans. ▫ The heart is a major organ and is made of muscle. ▫ The heart pumps blood around the body through vessels and this can be felt as a pulse. ▫ The heart pumps blood through the lungs in order to obtain a supply of oxygen. ▫ Blood carries oxygen/essential materials to different parts of the body. ▫ During exercise muscles need more oxygen so the heart beats faster and our breathing and pulse rates increase. ▫ Animals are alive; they move, feed, grow, use their senses, reproduce, breathe/respire and excrete. ▫ An adequate, varied and balanced diet is needed to help us grow and repair our bodies (proteins), provide us with energy (fats and carbohydrates) and maintain good health (vitamins and minerals). ▫ Tobacco, alcohol and other 'drugs' can be harmful. ▫ All medicines are drugs, not all drugs are medicines.	▪ Use correct scientific knowledge and understanding and relevant scientific language to discuss their observations and explorations. ▪ Explore more abstract systems / functions / changes / behaviours and record their understanding of these *(e.g. the relationship between diet, exercise, drugs, lifestyle and health)* ▪ Compare and contrast more complex processes, systems, functions ▪ Refine a scientific question to make it testable, *e.g. How would exercise affect the pulse rate?* ▪ Make / perform and use their own versions of simple models to describe and explain scientific ideas *(e.g. circulatory system* ▪ Research how scientific ideas have developed over time and had an impact on our lives ▪ Build on / add to someone else's idea to improve a plan or suggestion.	circulatory system, heart, blood, blood vessels, arteries, veins, capillaries, pumps, red blood cells, white blood cells, plasma, platelets, antigens, transfusion, oxygen, carbon dioxide, lungs, cardiovascular, nutrients, water, absorption, osmosis, diffusion, membranes, diet, exercise, lifestyle, health	Art – making a clay heart Outdoor learning – 'human circulatory system' Maths – line graphs to record bpm after exercise

Session	Key Objectives	Outcomes	Key Questions
1	To note and name the three types of blood vessel To identify the components of blood and describe their functions *WS: Identifying scientific evidence that has been used to support or refute ideas or arguments*	Children will: Identify and describe components of blood and their respective functions, noting the different blood groups Sketch magnified red and white blood cells	How would you describe 'blood'? Why is blood pumped around the body? What are the four components of blood? What is a blood transfusion and why do different blood types matter?

		Be able to name the three types of blood vessel: arteries, veins and capillaries	Do you think scientists will ever be able to make synthetic blood, and if so what would the benefits be?
2	To explore the structure and function of the human heart To investigate and understand that heart size and speed relates to age, fitness & activity and can be improved *WS: Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary* *Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of results*	Children will: Explore the structure and function of the human heart Investigate and recreate heartrates for varying levels of exertion, giving explanations for observations	How big is a human heart? Where do you think your heart is? What happens to your heart when you exercise? What can stop your heart being efficient? How can we help our heart stay healthy?
3	To use a range of techniques to create an anatomically accurate clay heart sculpture *WS: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas*	Children will: Use their knowledge to create anatomically correct sculptures of a heart	Which sculpting techniques are you choosing and why? Can you name and describe all the parts of your sculpture?
4	To describe the ways in which nutrients and water are transported within animals, including humans *WS*: *Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary*	Children will: Explain how nutrients and water are transported through the body Investigate diffusion and osmosis	What can you remember about the digestive system in Year 4? What is absorption? What's the difference between diffusion and osmosis?
5	To explore and demonstrate how the circulatory system works including the role of the heart *WS: Talk about how scientific ideas have developed over time* *Look for different causal relationships in their data and identify evidence that refutes or supports their ideas*	Children will: Explore how the circulatory system works and be able to identify the role blood has within this Understand that scientific theories changed over time. Accurately dramatise the processes of the circulatory system Record and edit their dramatization	Who was William Harvey and why was he significant? What is the cardiovascular system? Why is it called the 'double' circulatory system? What do your muscles need when you exercise? Why is the heart different from other muscles in your body?

6	To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function *WS: Use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas, using oral and written forms such as displays and other presentations to report conclusions, causal relationships and explanations*	Children will: Examine the impact of a heathy or unhealthy diet on the human body Examine the impact of exercise and lifestyle choices on the human body Create a poster that explores the impact of diet, exercise and lifestyle on the body	How do you define a 'healthy diet'? How much exercise should we get a week? What is the best kind of exercise? How do scientists know the long-term impact of diet, exercise and lifestyle?
Evaluation			