

Science Scheme of Work

Year 6 – Our Bodies (Animals Including Humans)											
Links made with other subjects	PE – Health and fitness (circuits) PHSE – Drugs and a healthy life style										
The BIG Question	How do our choices affect how our body works?										
The BIG Outcome	Create an informative text explaining how to maintain a healthy lifestyle with explicit reference to exercise and its link the circulatory system										
Science objectives (link to NC)	- 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.										
Prior knowledge What prior knowledge is needed for children to be successful in this unit?	Children already know: EYFS – Understanding the world - Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes. Yr 1 –Animals Including Humans (Types and Parts of Animals) Yr 2 - Animals Including Humans (Feeding & Exercise and Living Things) Yr 3 - Animals Including Humans (Movement and Feeding) Yr 4 - Animals Including Humans (Human Nutrition) Yr 5 - Animals Including Humans (Life Cycles)										
Future learning Consider the conceptual knowledge within a subject that pupils need for future learning not just the recall of facts but the importance of concepts	This unit gives prior knowledge to: KS3 - • Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta. • The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. • The effects of recreational drugs (including substance misuse) on behaviour, health and life processes. • The structure and functions of the gas exchange system in humans, including adaptations to function. • The mechanism of breathing to move air in and out of the lungs. • The impact of exercise, asthma and smoking on the human gas exchange system										
Science strands	<table><tr><td>Related Enquiry Questions</td></tr><tr><td>Classifying</td></tr><tr><td>Not relevant</td></tr><tr><td>Observing over time</td></tr><tr><td>Observe pulse rates before, during and after exercise.</td></tr><tr><td>Pattern Seeking</td></tr><tr><td>Children generate questions for investigation such as: - Do older people have lower pulse rates? -Do boys have higher pulse rates?</td></tr><tr><td>Comparative testing</td></tr><tr><td>Complete different activities to compare the impact on their own heart rate.</td></tr><tr><td>Researching</td></tr></table>	Related Enquiry Questions	Classifying	Not relevant	Observing over time	Observe pulse rates before, during and after exercise.	Pattern Seeking	Children generate questions for investigation such as: - Do older people have lower pulse rates? -Do boys have higher pulse rates?	Comparative testing	Complete different activities to compare the impact on their own heart rate.	Researching
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	- Generate questions to research about the human circulatory system. (Children present what they've learned in different ways: create a model, write a song, write a story, create a PPT, etc.)
Vocabulary/ Glossary	Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle
Knowledge (see italics for knowledge to remember)	The knowledge that children will learn and remember: The human circulatory system <i>The heart pumps blood in the blood vessels around to the lungs.</i> <i>Oxygen goes into the blood and carbon dioxide is removed.</i> <i>The blood goes back to the heart and is then pumped around the body.</i> <i>Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed.</i> <i>As they are used, they produce carbon dioxide and other waste products.</i> <i>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.</i> <i>Diet, exercise, drugs and lifestyle have an impact on the way our bodies function.</i> This content is also included in PSHE. The new statutory requirements for relationships and health education can be found below: https://www.gov.uk/government/publications/relationships-education-relationships-and-sex-education-rse-and-health-education/physical-health-and-mental-wellbeing-primary-and-secondary <i>They can affect how well our 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.</i> <i>Some conditions are caused by deficiencies in our diet e.g. lack of vitamins</i>
SEND expectations	The human circulatory system - The heart pumps blood 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. - 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. - Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. - Some conditions are caused by deficiencies in our diet e.g. lack of vitamins
Common misconceptions	Some children may think: - your heart is on the left side of your chest - the heart makes blood -the blood travels in one loop from the heart to the lungs and around the body - when we exercise, our heart beats faster to work the muscles more - some blood in our bodies is blue and some blood is red - we just eat food for energy - all fat is bad for you - all dairy is good for you - protein is good for you, so you can eat as much as you want - foods only contain fat if you can see it - all drugs are bad for you.