Year 6 Science Curriculum

Working scientifically links Rubric/PCMD opp. Key Vocabulary

Animals Including Humans

What's the big picture? Recap knowledge and vocabulary from year 5 and 4 - knowledge and retrieval. *"I know how to ask simple scientific questions"*

Prior learning:
Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans)
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. (Y3 - Animals, including humans)
Describe the simple functions of the basic parts of the digestive system in humans. (Y4 - Animals, including humans)
Identify the different types of teeth in humans and their simple functions. (Y4 - Animals, including humans)

National Curriculum Principles	Objectives	Knowledge and key Vocabulary	Reading opportunities	Technology
Identify and name the main parts of the human circulatory system and describe the functions of the heart, blood vessels and blood.	Identify and name the main parts of the humans circulatory system I know the function of the heart, blood vessels and blood	Children to draw what they think the heart looks like. Compare to a real picture - identify similarities and differences. Can children locate the heart in the body. Teach vocabulary - **heart, arteries, veins, capillaries, double loop circulatory system, blood vessels, lungs, pump, oxygen, carbon dioxide, nutrients, water** Label and draw the circulatory system with name and functions - explain the double loop system . 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. Double page spread	Pig-Heart Boy (Malorie Blackman) Skellig (David Almond) A Heart Pumping Adventure (Heather Manley)	

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		Create a role play model for the circulatory system		
Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	I know the impact of diet, exercise, drugs and life style on health	Research how much sleep humans need at different ages - present findings and record data SOLE session - Are all drugs bad for you? Link to lifestyle, caffeine, medicine etc.. Report and present findings How can you stay healthy? Research and SOLE sessions Links to PSHE		
Describe the ways in which nutrients and water are transported within animals clouding humans	I know ways in which nutrients and water are transported in animals, including humans	Make blood to show the function of different components. - **red blood cells** (red jelly beans) transport oxygen - **White blood cells** (White marshmallows) protect against disease - **Platelets** (teaspoon of rice) repair cuts and clot blood - **Plasma** (cooking oil) Liquid that carries cells and dissolved nutrients. Measure out quantities using spoon and scales Heart rate investigations - how does exercise effect heart rate? Set up a comparative test - focus on skill of independently planning, taking measurements, record readings, present findings		

Famous scientists

Claudius Galen - anatomy

Leonardo Da Vinci - anatomy

Santorio Santorio - made an instrument to measure pulse rate, leading to the modern fitness tracker.

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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.

Enquiry ideas

Comparative tests	Identify and classify	Observations over time	Pattern seeking	Research
How does the length of time we exercise for affect our heart rate?	Which organs of the body make up the circulation system and where are they found?	How does my heart rate change over the day?	Is there a pattern between what we eat for breakfast and how fast we can run?	How have our ideas about disease and medicine changed over time?
Which type of exercise has the greatest effect on her heart rate				