Subject Knowledge (PoS) Substantive Knowledge	Working Scientifically (PoS+Ove Disciplinary Knowledge	rview)	Resources Data loggers
<ul> <li>The main parts of the human circulatory system are the heart, blood vessels, (arteries, veins capillaries) and blood.</li> <li>The heart pumps blood around the body.</li> <li>Blood is made up of 4 different cells, white blood cells, red blood cells, plasma and platelets.</li> <li>Blood carries water, gasses and nutrients.</li> <li>Arteries carry blood away from the heart.</li> <li>Veins carry blood towards the heart.</li> <li>Capillaries are tiny blood vessels that allow the exchange of nutrients and gasses from the blood into the body and vice versa.</li> <li>Diet, exercise, drugs and lifestyle affect the performance of the heart</li> </ul>	<ul> <li>During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content: <ul> <li>Select the most appropriate ways to answer science questions using different types of scientific enquiry, carrying out fair tests.</li> <li>planning different types of scientific enquiries to answer questions</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate (data loggers)</li> <li>recording data and results</li> <li>reporting and presenting findings from enquiries, including conclusions</li> <li>Draw conclusions based on their data and observations</li> </ul> </li> </ul>		
Prior learning:	I	Future learning:	
<ul> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans)</li> <li>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)</li> <li>Describe the simple functions of the basic parts of the digestive system in humans. (Y4 - Animals, including humans)</li> </ul>		<ul> <li>The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases. (KS3)</li> <li>The effects of recreational drugs (including substance misuse) on behaviour, health and life processes. (KS3)</li> <li>The structure and functions of the gas exchange system in humans, including adaptations to function. (KS3)</li> <li>The mechanism of breathing to move air in and out of the lungs. (KS3)</li> <li>The impact of everying and smoking on the human gas exchanges</li> </ul>	

## Science Project Overview Year 6 Animals including humans (Diet, Health, circulatory system)

- Animals, including humans)	system. (KS3)		
Vocabulary:			
Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs,			
lifestyle , disease, air, breathing			
Misconceptions:			
<ul> <li>Your heart is on the left side of your chest</li> </ul>			
The heart makes blood			
<ul> <li>The blood travels in one loop from the heart to the lungs and around the body</li> </ul>			
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			
<ul> <li>Protein is good for you, so you can eat as much as you want</li> </ul>			
Foods only contain fat if you can see it			
All drugs are bad for you			
Maths links:			
Measurement: When solving problems that require the calculation and conversion of units of measures, use decimal notation up to three decimal places- using			
datalogger to measure heart rates			
Statistics: Know how to construct a pie chart and line graph- creating graphs from results table			
Use pie charts and line graphs to solve problems- use results data to write/ discuss conclusions			
Understand the term mean as an average and be able to calculate it- calculate averages of readings from investigations			
Famous Scientists to possibly study:			
Marie Curie 1867 – 1934 (Radioactivity - First woman to win a Nobel prize and first person to win a Nobel prize in two sciences) Women in science book, Little			
people big dreams book			
Charles Drew: inventor of the blood bank			
Alexander Fleming Discovered penicillin https://royalsociety.org/about-us/programmes/people-of-science/sally-davies-fleming-florey/			
Edward Jenner			
William Harvey (1578 – 1657) Discovered the circulatory system. <u>http://www.bbc.co.uk/history/historic_tigures/harvey_william.shtml</u>			
Exploring links.			

## Possible careers/jobs:

Anaesthetist (a doctor whose role is to anesthetise patients) Cardiologist (a doctor specialising in the heart and circulatory system), Dentist (looks after teeth and gums), Doctor (works to keep people healthy and cure disease), Dietician (develops nutrition advice to improve people's diets), Exercise physiologist (a doctor who helps people improve their fitness), Geneticist (studies genes), Haematologist (studies blood and its diseases), Midwife (helps with the delivery of babies), Neurologist (a doctor specialising in the brain and nervous system), Nurse (cares for patients and has a broad spectrum of responsibilities), Nutritionist (studies nutrition in food and how it affects our bodies), Optician (a doctor specialising in vision and eye health), Orthodontist (a doctor who looks after people's teeth and gums), Paediatrician (a doctor specialising in children's medicine), Pathologist (a doctor who specialises in body fluids and tissues), Pharmacist (dispenses medicines and gives advice on medicines), Physiologist (a doctor specialising in feet and the way people walk), Psychiatrist (a doctor who specialises in mental health), Psychologist (a doctor who studies mental processes and human behaviour), Sport scientist (works with sportspeople to help them achieve the best possible performance), Obstetrician (a doctor who specialises in pregnancy and childbirth)

What sport makes you sweat the most? How do we stay fit as we get older?