Science – Year 6

Spring 1	Animals including humans					
Prior learning	Year 1 - fish, amphibians, reptiles, birds and mammals. Parts of body and senses. Year 2 – offspring grow into adults, basic needs for survival, exercise, diet, hygiene. Year 3 - nutrition, skeleton, muscles. Year 4 – digestive system, food chains. Year 5 – change in humans to old age.					
Lesson objective	Understand the function of the heart and its role in the circulatory system	Identify and compare blood vessels	Explore blood	Learn how the body transports water and nutrients	Investigate what affects your heart rate	Learn about the impact of drugs and alcohol on the body
Key vocabulary	circulatory system atrium ventricle vessel valves	vessel artery vein capillary microscope	blood plasma platelet white blood cell red blood cell	absorb diffusion osmosis concentration nutrients	diet exercise heart rate BPM pulse	drug painkiller stimulant depressant hallucinogens
Creative context						
Substantive knowledge	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 human circulatory system, and describe the functions of the heart, blood vessels and blood	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	Describe the ways in which nutrients and water are transported within animals, including humans	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function	Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function
Disciplinary knowledge	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Taking measurements, using a range of Scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Identifying scientific evidence that has been used to support or refute ideas or arguments	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 and a degree of trust in results, in oral and written forms such

Science – Year 6

						as displays and other presentations
Recorded learning	Label and colour a diagram of the heart, showing oxygenated blood in red and deoxygenated blood in blue. Describe the function of the heart and how it pumps blood around the body. Challenge Task: Describe, in detail, how the blood moves around the heart via specific vessels and how it keeps oxygenated and deoxygenated blood separate.	Restricted blood flow experiment – details in Developing Experts. Challenge Task: Complete a flow chart to show the movement of blood through the heart and blood vessels. Explain why arteries have a thicker muscular wall.	Describe the functions of red blood cells, white blood cells, platelets and plasma. Create a pie chart showing the percentage of each component by volume in a typical sample of blood. Could use computers to create these pie charts. Challenge Task: Describe what happens to your blood when you graze your knee.	Experiment to explore how soaking gummy sweets in different liquids will affect the size of the sweets. Write a conclusion to explain the results of the experiment, linking it to diffusion and osmosis.	Design and conduct an investigation associated with heart rate, diet and exercise. Pose a questions and plan the investigation to answer it, identifying their variable, control variables, prediction and method. Gather and record data and then write a conclusion.	Describe the uses and effects of different drugs. Produce a poster to promote a healthy lifestyle and highlight the negative impact of some drugs and alcohol on health. Challenge Task: Include information about medical drugs which are used to support the circulatory system.
Future learning						