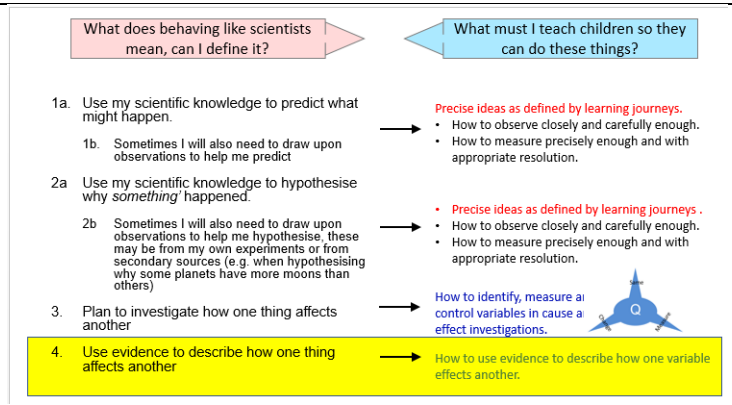
Learning Journey	Science	Animals including Humans (Circulation)	Year 6 Summer	

Building on prior learning	Theme overview	Preparing for future learning	Vocabulary
In Y4 the children will have learnt about digestion and how the body gets nutrients into the blood.	• Getting oxygen into the blood • The blood circulation model	In KS3 children will learn more about **The skeletal and muscular systems** ⍰ the structure and functions of the human skeleton, to include support, protection, movement and making blood cells ⍰ biomechanics – the interaction between skeleton and muscles, including the measurement of force exerted by different muscles ⍰ the function of muscles and examples of antagonistic muscles. **Nutrition and digestion** ⍰ content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed ⍰ calculations of energy requirements in a healthy daily diet ⍰ the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases ⍰ the tissues and organs of the human digestive system, including adaptations to function and how the digestive system digests food (enzymes simply as biological catalysts) ⍰ the importance of bacteria in the human digestive system ⍰ plants making carbohydrates in their leaves by photosynthesis and gaining mineral nutrients and water from the soil via their roots. **Gas exchange systems**	• Muscles, energy, oxygen, carbohydrates, sugar glucose, intestines • Blood, heart, circulation, nutrients, dissolve, pulse rate, blood vessels, blood pressure • Lungs, breathing, oxygen, dissolve, circulation

		⍰ 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, using a pressure model to explain the movement of gases, including simple measurements of lung volume ⍰ the impact of exercise, asthma and smoking on the human gas exchange system ⍰ the role of leaf stomata in gas exchange in plants.	

NC coverage and HWJS skills development	Knowledge organisers
National Curriculum: • 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 **<u>HWJS skills development</u>** Details of the skills that will be taught within the unit. These should match up with the skills progression documentation	**Chapter 1: Getting oxygen into the blood.** All animals need oxygen to survive. Air is breathed into the lungs where the oxygen in the air is passed into the blood. Every part of animals bodies need oxygen, especially muscles Muscles need a supply of oxygen and sugar to make them work, they are supplied this by the blood. **Chapter 2: The blood circulation model.** The blood circulates around the body in a way that ensures all muscles in the body get a supply of oxygen and sugar. The heart pumps blood to every muscle in the body. The circulatory route must allow the blood to collect oxygen from the lungs, sugar from the intestines and visit muscles. The blood then returns to the heart where it is pumped again.



A Model of Skills Progression.

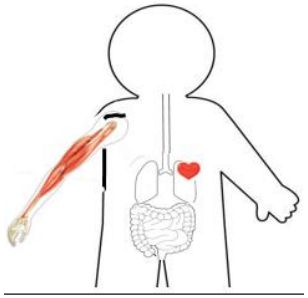
1. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

2. Identifying scientific evidence that has been used to support or refute ideas or arguments

3. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

In Year 5 &6, using evidence to describe how one thing affects another is key. Children should be taught how to describe patterns and give a ***judgement*** on how sure they are. Key features of this are:

- Recognise that conclusions may be uncertain due to difficulties controlling and measuring variables accurately.
- That measurement always introduces some error. Understand that repeating experiments helps to identify what the true value is and that data points far from the mean are likely to be inaccurate and should be discounted.
- Adapting experiments to produce more precise conclusions when the question requires it, especially when seeking to find maximum, minimum or specific values



Connections / deepening understanding How is the understanding of this area deepened in other areas of the curriculum? What inks are there in the other subjects in the curriculum?	**RADE** Are the rights of the child relevant in this area of study - do they get referred to in the work?	**Assessment** By the end of the unit the children will be able to … Details of the objectives that they will have covered within this unit of work			
English – Report writing. Maths – recording data related to breathing rates and heartbeats.	Healthy lifestyle choices in terms of food, exercise and drugs.	Muscles need oxygen to release the energy from food to do work.	Oxygen is breathed into the lungs and taken into the blood.	The heart pumps blood through blood vessels around the body including to muscles.	The muscles take oxygen and nutrients from the blood.

Assessment recording for the unit - checking the level of pitch of the work

Key skill(s)/ knowledge to be assessed by the end of the unit	**Lower attaining**	**Middle attaining**	**Higher attaining**
• Muscles need oxygen to release the energy from food to do work. • Oxygen is breathed into the lungs and taken into the blood. • The heart pumps blood through blood vessels around the body including to muscles. • The muscles take oxygen and nutrients from the blood.	Muscles take in oxygen from the blood. Oxygen is a gas in the air that is breathed into the lungs. The heart is a muscle that pumps blood around the body Muscles take oxygen from the blood.	Muscles take in oxygen from the blood. This travels in the blood in a circular (circulatory) system via the lungs and heart. Oxygen is a gas in the air that is breathed into the lungs. Here it is taken into the blood and transported around the body. The heart is a muscle that pumps blood around the body through blood vessels. Arteries carry blood away from the heart and veins towards heart. Muscles need a supply of oxygen and sugar (glucose) to make them work, they are supplied by the blood	Muscles take in oxygen from the blood. This travels in the blood in a circular (circulatory) system via the lungs and heart. The circulatory route must allow the blood to collect oxygen from the lungs, sugar from the intestines and visit muscles. Oxygen is a gas in the air that is breathed into the lungs. Here it is taken into the blood and transported around the body. Every part of animals' bodies need oxygen, especially muscles. The heart is a muscle that pumps blood around the body through blood vessels. Arteries carry blood away from the heart and veins towards heart. Muscles need a supply of oxygen and sugar (glucose) to make them work, they are supplied by the blood.