Year 6 Biological Science: Animals Including Humans (Circulation) Unit 1

Scientific Model (KS2):

Bigger Picture Model

- Focuses on ensuring children see the bigger picture in order to understand why something happens. They need to see the purpose of a system to understand the importance of the parts of that system.
- Ensure the children understand the purpose and importance of the circulation system before you study the specific details of how the system works.

Science investigations:

- Observing Changes over Time
- Looking for Naturally- Occurring Patterns and Relationships
- Researching Using Secondary Sources
- Comparative and Fair Testing

Scientists:

- William Harvey (discovered circulatory of blood in early 17th century)

Scientific Skills Applied:

ASK
- To ask different kinds of questions
- To identify appropriate secondary sources to research ideas and ask questions
- To make predictions based on evidence

BREAKDOWN
- To recognise and control variables in tests
- To plan different enquiries to answer questions
- To recognise when to use comparative and fair tests
- To plan when to take repeat readings

CAPTURE
- To choose and use a range of equipment precisely
- To decide how to record data
- To decide what observations and measurements to make

DESCRIBE
- To use evidence from enquiry to support or refute ideas being tested
- To use varied ways to present data
- To explain how scientific ideas develop over time
- To identify and comment, using appropriate language, on patterns they notice
- To use relevant scientific language and illustrations in reports and when drawing conclusions

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)

Curriculum	Learning Intention	Knowledge and Key Vocabulary
Making links to learning and discuss the model (if needed) **Notes and guidance (non-statutory)** Pupils should build on their learning from years 3 and 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them	What are the functions of our body systems? • Recall prior knowledge of systems in the human body and labelling a diagram. • Identify the parts of the circulatory system. • Name the parts of the circulatory system.	**Knowledge:** - identify the role of the skeleton and its parts in protecting the heart and circulatory system, as well as enabling the circulatory cycle - name and identify the main organs of the circulatory system

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<td>to understand how the circulatory system enables the body to function.</td>
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<td><u>Vocabulary:</u>
System, human, body, circulatory, circulation, skeletal, muscular, digestive, organs, parts, heart, lungs, blood vessels, aorta, atrium, ventricle, artery, vein, pulmonary, superior vena cava, inferior, pulmonic, aortic valve, trachea, bronchus, bronchiole, diaphragms, air sacs, alveoli, capillary, intercostal muscles and ribs</td>
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<td rowspan="2"><u>Knowledge and skills through investigations</u>
Pupils should be taught to:
- 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
Notes and guidance (non-statutory):
- Pupils should learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body.
Pupils might work scientifically by:
- exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle, and health.</td>
<td rowspan="2">What is the function of the circulatory system?
• Explain the main functions of the heart, lungs, and blood vessels.
• Describe the functions of parts of the heart and lungs

How are water and nutrients transported around the body?
• Match nutrients to why the body needs them.
• Explain how the digestive system breaks down nutrients.
• Explain the role of circulatory system in transporting nutrients and water in the body.

What constitutes to having a healthy lifestyle?
• Identify what a healthy lifestyle consists of.
• Describe the effects of a healthy lifestyle.
• Describe the impact of diet and exercise on the human body.

What happens when we exercise?
• Decide on the most appropriate type of investigation.
• Explain which variables will be controlled.
• Write a report about findings that includes a conclusion.
• Report the degree of trust I have in my results.

What impact can drug, and alcohol have on the body?
• Describe the parts of the body affected by drugs.
• Describe the parts of the body affected by alcohol.
• Describe the parts of the body affected by smoking.
• Explain the impact of drugs and alcohol on the body.
• Describe how scientific evidence highlighted the dangers of smoking.</td>
<td><u>Knowledge:</u>
- Identify the role of the skeleton and its parts in protecting the heart and circulatory system, as well as enabling the circulatory cycle.
- Name and identify the main organs of the circulatory system.
- To know the function of the heart and that it is a muscle.
- To name the three types of blood vessels and their role.
- To name the three types of blood cells and their roles.
- Explain the need for a healthy lifestyle.
- Explain the effects of alcohol and tobacco.</td>
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<td><u>Vocabulary:</u>
- Human, circulatory, organs, parts, heart, lungs, blood vessels, aorta, atrium, ventricle, artery, vein, pulmonary, superior vena cava, inferior, pulmonic, aortic valve, trachea, bronchus, bronchiole, diaphragms, air sacs, alveoli, capillary, functions, intercostal muscles, and ribs
- Nutrients, nutrition, water, system, circulatory, digestive, skeletal, muscular, blood, blood vessels, heart, lungs, stomach, gall bladder, liver, small intestine, large intestine, pancreas, liver, kidneys, rectum, bladder.
- Healthy, lifestyle, diet, exercise, nutrition, nutrients, food, water, cells, body, human, organs, vitamins, minerals, protein, fats, carbohydrates, water, fibre
- Exercise, fitness, healthy, unhealthy, types, pulse, heart rate, investigation, results, record, table, graph, chart, report, degrees of trust.
- Human, body, impact, evidence, smoking, drugs, legal, illegal, alcohol, heart, stomach, liver, kidneys,</td>
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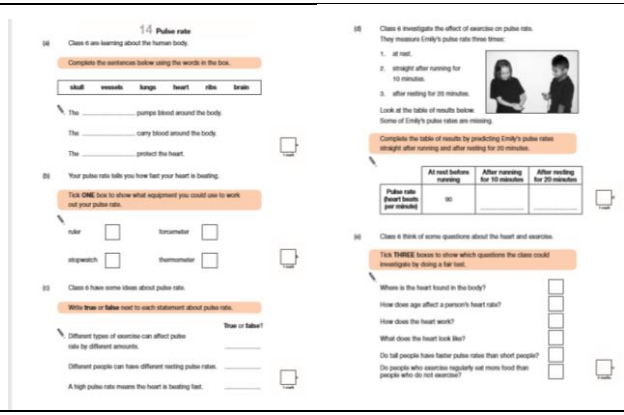
		lungs, air sacs (alveoli), brain, mouth, fingers, toes, blood vessels.
Application and Assessment Activity		

Thinking Deeper:
Children deliver a poster presentation about the composition of blood and the function of the different blood cells.

Links to other subjects:

- Subject Specific links –
  - Maths - measuring time and finding averages, display results in a table
- Personal Development – to encourage children to have a healthy lifestyle with a balanced diet and exercise.
- SMSC – discussing the need to give blood for our blood banks and how it can be used for those in need.
- Cultural Capital – developing confidence to speak to peers delivering presentations.
- Careers – nurses, cardiologists, engineers developing medical equipment.
- British Values – rules of law regarding the drinking of alcohol and smoking.

- Equality – fostering a respect for the differences between the children and how all may not be as active/sporty as each other but engage in what each enjoys.