Science Year 6 – Animals including humans

National Curriculum Objectives:

- 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 ways in which nutrients and water are transported within animals, including humans.

Prior Objectives:

- Describe the changes as humans develop to old age.

Lesson 1	Lesson 2	Lesson 3	Lesson 4	Lesson 5	Lesson 6
Skill – Explain Knowledge – red - carry oxygen, white - fight infection, platelets - prevent bleeding	Skill - Describe Knowledge – Know the parts of the circulatory system	Skill – Describe Knowledge – nutrients are absorbed through walls of our intestines into the blood	Skill – Explain Knowledge - A healthy diet involves eating the right types of nutrients in the right amounts.	Skill – Investigate Knowledge – Heart rate depends on activity type or factors such as fitness level	Skill – Find out Knowledge – Drugs are substances that cause a chemical reaction to the body.
<u>WALT: Describe the functions of blood.</u> WILF: -Recall body parts. - Name the parts of the circulatory system. -Explain the importance of blood What would you like to learn about the human body? Chn use different shapes to show what they think inside of their body looks like. Show chn a picture of the circulatory system. What happens when you cut your finger? What is blood? Which places of the body is blood pumped to? Look at microscopic images of blood cells. **Recording:** Role play the role of white and red blood cells.	<u>WALT: Describe the functions of the heart.</u> WILF: -Use role play. -Create a diagram. -Describe the circulatory system. Jigsaw of the heart. Look at the veins in your arm. Why do we have veins? Why are they blue? Role play: 2 chn (the heart) sit in the middle of the classroom with oxygenated blood cells (red paper). 4 other chn pick 4 organs in the body with deoxygenated blood cells (blue). Chn run from heart to organs swapping blood cells as they go. Chn sequence images of the circulatory system. **Recording:** Draw a diagram using the game they played. HAPs write an explanation.	<u>WALT: Describe how water and nutrients are transported through the body.</u> WILF: -Explain what nutrients are. -Show how water travels. -Explain importance of water. Previous day place gummy worm in a plate with 100ml of water. Next day the worm should have grown. This represents the water in our bodies. Coloured skittles in a plate, add water. Skittle represent nutrients in our bodies. Recap digestive system. Explain nutrients are absorbed through walls of our intestines into the blood - (like Skittles experiment) Hunt for water facts **Recording:** Poster on why water is important for our bodies.	<u>WALT: Explain the impact of diet to our bodies.</u> WILF: - Sort foods. - Explain the benefits of healthy eating. - Explain the negative impact of junk food. Class venn diagram using big hoops and pictures of sugary food, white bread, chocolates, pop. (include a tv, football). Sort into healthy & unhealthy. Could we live off this? What nutrients would you get from this? What is the difference between nutrients and food? Chn learn about the benefits of healthy eating and the negative of unhealthy eating. **Recording:** Make a news report in pairs to persuade and educate people on a balanced diet.	<u>WALT: Investigate the impact of exercise on our bodies.</u> WILF: -Experiment fairly. -Measure the heart rate. -Make a line graph. What is exercise? What can we do to investigate how exercising can affect our bodies? What can we do to measure the effects? How can we record our findings? HAPs come up with their own investigation. LAPS think of an investigation as a class. **Recording:** Record results in a table and line graph.	<u>WALT: Explain the impact of drugs on our bodies.</u> WILF: -Sort legal and illegal drugs. -Write the impact of smoking. -Write the impact of alcohol. Can you think of e.g of drugs Truth and false statements Chn sort pictures of legal and illegal drugs. Look at how cigarettes and alcohol can be harmful. **Recording:** Create a poster to raise awareness of the dangers of alcohol and smoking

Assessment: Use the vocabulary mat to assess the children's prior knowledge and use the mats again to assess what the children have learnt.

Key Vocabulary: Oxygenated, Deoxygenated, Valve, Exercise, Respiration, circulatory system, heart, lungs, blood vessels, blood, artery, vein, digestive, transport, gas exchange, nutrients, oxygen, alcohol, drugs, tobacco.

heart

oxygenated

de-oxygenated

valve

exercise

respire

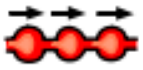
circulatory system

lungs

blood vessels

blood cells

blood



artery

vein

digestive

transport

gas

exchange

nutrients

oxygen

alcohol

drugs

smoking

tobacco

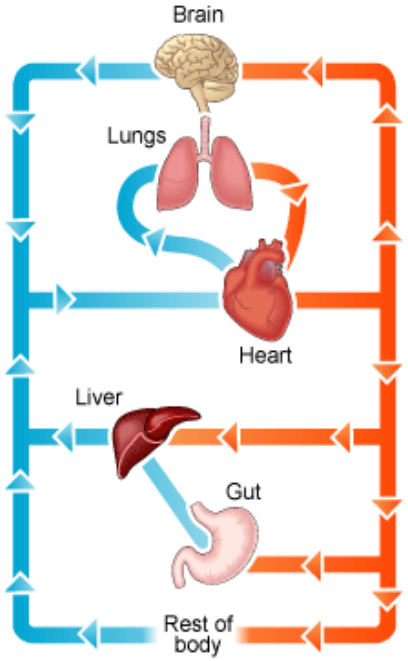
medicine

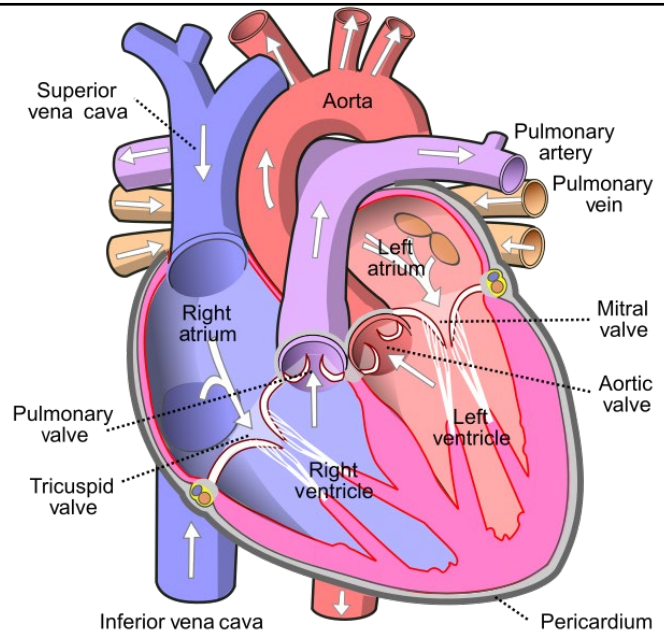
Year 6: Animals including humans

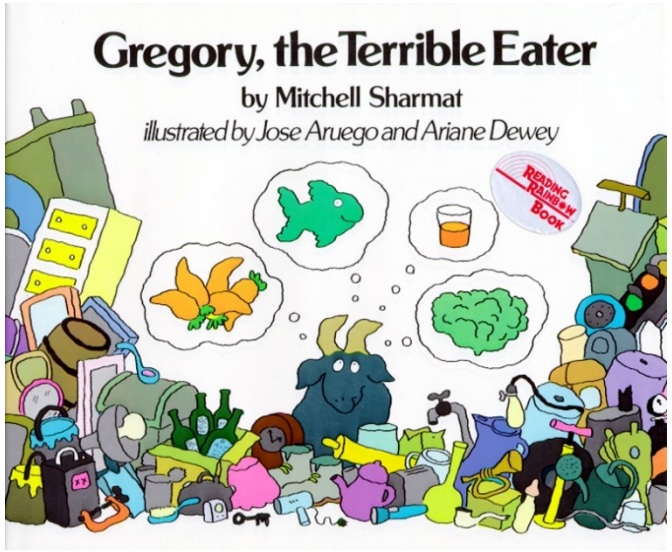
What should I already know?

Science - Asking questions about how the world works and finding the answers.	Describe the changes as humans develop to old age.

N/C -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 ways in which nutrients and water are transported within animals, including humans







Significant information

William Harvey
William Harvey was an English physician and the first person to correctly describe blood's circulation in the body. He showed that arteries and veins form a complete circuit.

Daniel Hale Williams
Black surgeon who performed world's first successful open heart surgery in 1893.

Interesting fact - If someone loses a lot of blood, they can have a transfusion when blood from others can be pumped in. There are 4 main blood groups: A, B, AB and O.

Glossary/Key Learning

Circulatory system.	This circulates blood through the body. It consists of the heart, blood and blood vessels.
Heart	Pumps blood around the body.
Blood	The red liquid pumped around the body by the heart. It transports oxygen, nutrients and water to all the parts of the body.
What is the role of blood vessels?	Red blood cells transport oxygen. White blood cells fight disease. Platelets cause the blood to clot when you have a cut.
How does the circulatory system work?	Blood is pumped to the lungs to pick up oxygen (O2) which has been inhaled (breathing in). It then goes back to the heart to get pumped to every other part of the body
Why is a healthy diet important?	Fatty foods can clog blood vessels and cause a heart attack. Cigarettes contain huge amounts of chemicals which can cause lung damage and lung cancer.
Why is exercise important?	Exercise can increase fitness, make you feel physically and mentally healthier, strengthen your heart and improve your lung function.