

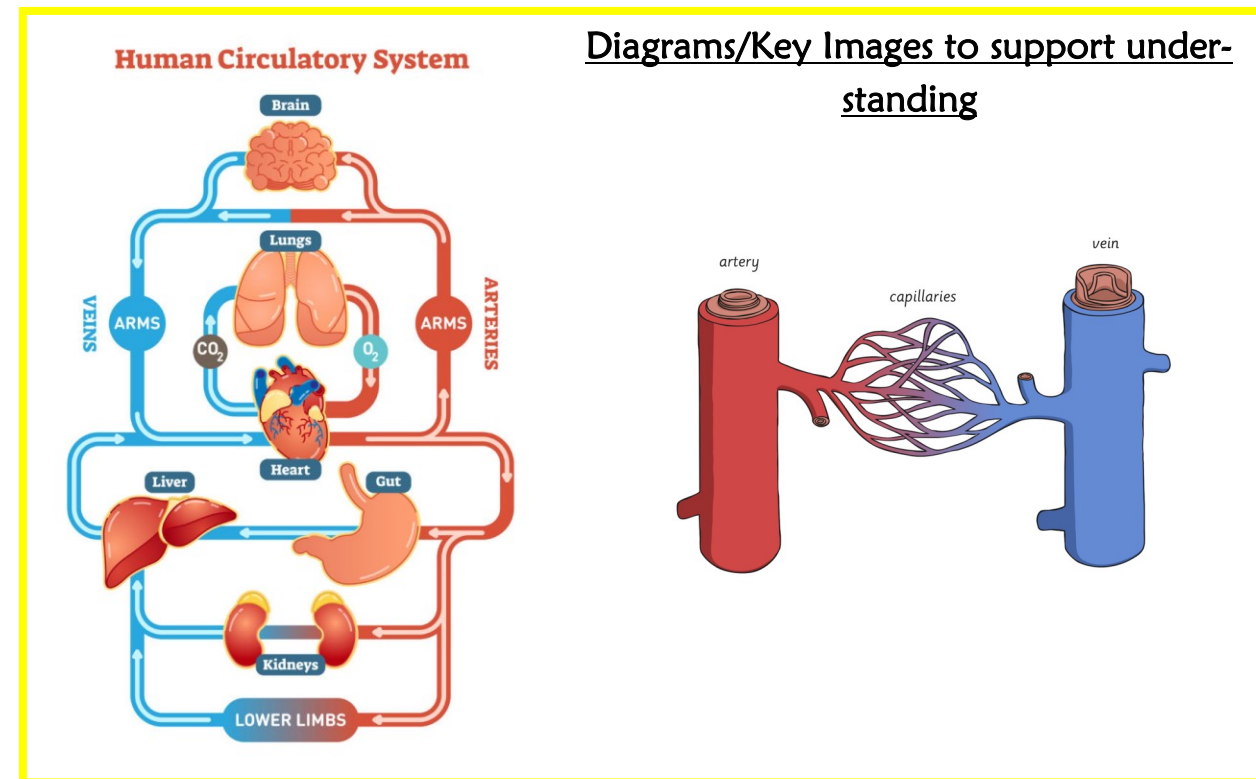
What our children should already know

- Describe the importance for humans of exercise, eating the right amounts of different types of food and hygiene. (Y2)
- Identify that animals, including humans, need the right types and amounts of nutrition, that they cannot make their own food and they get nutrition from what they eat (Y3)
- Identify that humans and some animals have skeletons and muscles for support, protection and movement (Y3)
- Describe the simple functions of the basic parts of the digestive system in humans (Y4)

Key Vocabulary

circulatory system	System circulating blood around the body supplying nutrients and oxygen
heart	Organ in the chest that pumps blood around the body
lungs	Organs in the chest that fill with oxygen when breathing in. They oxygenate the blood and remove carbon dioxide.
blood vessels	Narrow tubes that carry blood
arteries	Tubes that carry oxygenated blood away from the heart
veins	Tubes that carry deoxygenated blood towards the heart
capillaries	Tiny blood vessels They transport blood, nutrients and oxygen to cells in your organs and
oxygen	A colourless gas that plants and animals need to survive
oxygenated	Blood that contains oxygen
deoxygenated	Blood that does not contain oxygen
carbon dioxide	Gas produced by animals breathing out
pulse	Regular beating of heart
respiration	Breathing in and out
nutrients	Substances that help plants and animals grow
calories	The measurement of the amount of energy in

Animals Including Humans



Lesson Sequence

- 1) Identify and name the main parts of the human circulatory system, and research their functions
- 2) Describe the ways in which nutrients and water are transported within animals, including humans.
- 3) Recognise the impact of diet on the way our body functions
- 4 & 5) Recognise the impact of exercise on the way our body functions
- 6) Recognise the impact of drugs on the way our bodies function

Key Knowledge

The main parts of the circulatory system:
 Heart - 4 chambers and pumps blood around the body. Size of a fist. Made of muscle.
 Lungs - take in oxygen from respiration and transfer this to the blood. Remove carbon dioxide.
 Arteries - blood vessels carry oxygenated blood away from the heart and around the body.
 Veins—blood vessels carry deoxygenated blood to the heart.

The effect of exercise—tones muscles, reduces fat, increases fitness, strengthens heart (a muscle), improves lung function, improves skin
 The effect of drugs- Tobacco, alcohol and other 'drugs' can be harmful. All medicines are drugs, not all drugs are medicines.

Pulse can be measured to show the effect of exercise on the heart.

SMSC Links

- Spiritual** - The heart is often linked to a person's nature in a spiritual sense and as an image of love.
- Moral** - Consideration for the lifestyle choices of others and tact regarding body shapes
- Social** - Work collaboratively in the investigation
- Cultural** - How different cultures view the use of drugs

Key Milestones

- Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.
- Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions.
- Describe the ways in which nutrients and water are transported within animals, including humans.

Key Working Scientifically Skills

- Plan enquiries, including recognising and controlling variables where necessary.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, bar and line graphs, and models.
- Report findings from enquiries, including oral and written explanations of results, explanations involving causal relationships, and conclusions.
- Use test results to make predictions to set up further comparative and fair tests.
- Use simple models to describe scientific ideas, identifying scientific evidence that has been used to support or refute ideas or arguments.

Choices

- Choose a healthy, unhealthy or balanced diet
- Choose to exercise for a healthy body and heart or not
- Choose whether to take drugs or not

Animals Including Humans retrieval grid

What does blood carry around the body?	What is food energy measured in?	How can we measure our heart-beat?	What is the heart made of?
Name 4 benefits of exercise	Why do you breathe heavily during exercise?	Describe the movement of blood in the circulatory system	Name 2 unhealthy food which should only be eaten occasionally
Where do nutrients enter the blood?	Why is a high fat diet dangerous?	What size is the heart?	Which blood vessels carry deoxygenated blood?
Name the 4 main parts of the circulatory system	What are capillaries?	Name the five food groups and give examples of each	Explain the function of the lungs in the circulatory system

One Point	Two Points	Three Points	Four Points
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Animals Including Humans retrieval grid

Oxygen, nutrients and water	Calories	Using the pulse	Muscle
Tones muscles, reduces fat, strengthens heart, improves lung function, improves skin	The muscles are working harder so need more oxygen and produces more carbon dioxide so breathing has to increase	Collects oxygen from the lungs, goes to the right side of the heart, pumped to body part which uses oxygen, returns to heart (left) as deoxygenated and pumped to lungs	Ones high in fat, sugar or salt e.g. chips, cakes, chocolate
Lower intestine	Can lead to weight gain and also cause a build up in the arteries, restricting blood flow and increasing the risk of a heart attack	Size of your fist	Veins
Heart, lungs, arteries and veins	Tiny blood vessels	Fruit and vegetables Carbohydrates Proteins Dairy Fats and oils	To take in oxygen and transfer it to the blood. To remove carbon dioxide from deoxygenated blood

One Point	Two Points	Three Points	Four Points
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