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| **Naseby Primary Academy - Science** | |
| **Topic: Animals Including Humans and the Heart** | **Year 5/6** |

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| **What should I already know?** | | | | Diagram - The Circulatory System |
| * the function of the skeleton and the purpose of muscles; * the basic parts of the digestive system and the functions of organs in this system; * the different types of teeth in humans and their functions; * the life cycle of a human and how we change as we grow and develop; * the basic needs of animals for survival (water, food, air); * the importance of exercise, hygiene and a balanced diet. | | | | * The right **atrium** collects the **deoxygenated** blood from the body, **via** the **vena cava**. It sends the blood to the right **ventricle**. * The right **ventricle pumps** the **deoxygenated** blood to the **lungs**. Here the blood picks up **oxygen** and disposes of **carbon dioxide**. * The **lungs** send **oxygenated** blood back to the left **atrium** which pumps it to the left **ventricle.** * The left **ventricle** pumps the blood to the rest of the body, **via** the **aorta**. * The **heart** is composed of   **four** chambers; **the right** atrium, **the right** ventricle,  the left **atrium** and the left **ventricle**. How often your heart pumps is called your pulse. |
| **Scientific Learning** | | | |
| What is the **Circulatory System**? | * The **circulatory system** is made of the **heart**, **lungs** and **blood vessels** * **Arteries** carry **oxygenated** blood from the **heart** to the rest of the body. * **Veins** carry **deoxygenated** blood from the body to the **heart**. * **Nutrients, oxygen** and **carbon dioxide** are exchanged **via** the **capillaries**. | | |
| Choices that can harm the **circulatory system.** | * Some choices, such as smoking and drinking alcohol can be harmful to our health. * Tobacco can cause short-term effects such as shortness of breath, difficulty sleeping and loss of taste and long-term effects such as lung disease, cancer and death. * Alcohol can cause short-term effects such as addiction and loss of control and long-term. * Effects such as **organ** damage, cancer and death. | | |
| Why is **exercise** so important? | **Exercise** can:   * tone our **muscles** and reduce fat; * increase fitness; * make you feel physically and mentally healthier; * strengthen the **heart;** * improve your **lung** function; * improve your skin. | | | **What I should know by the end of the unit.** |
| * How my **pulse** changes with exercise and the most efficient way of presenting this data. * The four parts of my **blood** and the job of each of these parts. * The names of the four **chambers** of the **heart**. * How my heart works. * How blood travels around my body. * The effect **exercise** has on my **heart**. * The effect food, drugs and alcohol have on my body. * The way in which water and nutrients are transported around my body. |
| aorta the main [**artery**](https://www.collinsdictionary.com/dictionary/english/artery) through which blood leaves your  **heart** before it [flows](https://www.collinsdictionary.com/dictionary/english/flow) through the [rest](https://www.collinsdictionary.com/dictionary/english/rest) of your body  artery a [tube](https://www.collinsdictionary.com/dictionary/english/tube) in your body that carries **oxygenated** blood  from your **heart** to the [rest](https://www.collinsdictionary.com/dictionary/english/rest) of your body  atrium one of the chambers in the **heart**  blood vessels the [narrow](https://www.collinsdictionary.com/dictionary/english/narrow) [tubes](https://www.collinsdictionary.com/dictionary/english/tube) through which your blood flows.  **arteries**, **veins** and **capillaries** are **blood vessels**  capillaries [tiny](https://www.collinsdictionary.com/dictionary/english/tiny) **blood vessels** in your body  carbon dioxide a gas produced by animals and people breathing out  circulatory the system responsible for circulating blood through  system the body, that supplies **nutrients** and **oxygen** to the body and removes waste products such as **carbon**  **dioxide**  deoxygenated blood that does not contain **oxygen**  heart the **organ** in your [chest](https://www.collinsdictionary.com/dictionary/english/chest) that [**pumps**](https://www.collinsdictionary.com/dictionary/english/pump) the blood around  your body  lungs two **organs** inside your chest which fill with air when you breathe in. They **oxygenate** the blood and remove  **carbon dioxide** from it | |  | nutrients substances that [help](https://www.collinsdictionary.com/dictionary/english/help) plants and animals to grow  organ a part of your body that has a particular purpose  oxygen a colourless gas that plants and animals need to survive  oxygenated blood that contains **oxygen**  pulse the regular [beating](https://www.collinsdictionary.com/dictionary/english/beating) of blood through your body. How fast or slow your **pulse** is depends on the activity you  are doing  respiration process of respiring; breathing ; inhaling and exhaling air. In KS3 Science, this process is referred to as  **ventilation**  veins a [tube](https://www.collinsdictionary.com/dictionary/english/tube) in your body that carries **deoxygenated** blood  to your **heart** from the [rest](https://www.collinsdictionary.com/dictionary/english/rest) of your body  vena cava a large **vein** through which **deoxygenated** blood  reaches your **heart** from the body  ventilation the exchange of air between the lungs and the atmosphere so that **oxygen** can be exchanged for  **carbon dioxide**  ventricle one of the chambers in the **heart**  via through | |



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Question 7: Explain what is happening at each stage of the process.

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| Question 5: The veins carry  ………….. blood. | Start of unit: | End of unit: |
| deoxygenated |  |  |
| oxygenated |  |  |
| blue |  |  |

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| Question 9: The function of the blood is to provide the body with…(tick **three**) | Start of unit: | End of unit: |
| nutrients |  |  |
| water |  |  |
| carbon dioxide |  |  |
| oxygen |  |  |

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| Question 8: Which of these can harm our bodies? Tick **two**. | Start of  unit: | End  of  unit: |
| smoking |  |  |
| all drugs |  |  |
| alcohol |  |  |
| exercise |  |  |

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| Question 10: Arteries, veins  and capillaries are examples of… | Start of  unit: | End  of  unit: |
| blood |  |  |
| blood vessels |  |  |
| blood types |  |  |
| nutrients |  |  |



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| Question 6: Tick **two** boxes  below to show the two  activities that would increase pulse rate the most. | Start of  unit: | End  of  unit: |
| reading a book |  |  |
| playing football |  |  |
| drinking water |  |  |
| going for a walk |  |  |

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| Question 4: You are  investigating which exercise yields the highest heart rate. How can you ensure a fair test? Tick **two**. | Start of unit: | End of unit: |
| treat everybody the same |  |  |
| measure the same subject’s pulse before, during and after each exercise. |  |  |
| ensure the starting heart rate is the same before each exercise |  |  |
| complete each exercise  without resting in between. |  |  |

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| Question 3: The most effective way to show the change in pulse rate over time is by using a... | Start of unit: | End of unit: |
| picture |  |  |
| bar chart |  |  |
| pie chart |  |  |
| line graph |  |  |

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| Question 2: Which one of these is **not** an organ? | Start of  unit: | End of  unit: |
| heart |  |  |
| lungs |  |  |
| blood |  |  |

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| Question 1: The heart, blood  vessels and lungs make up the… | Start of unit: | End of unit: |
| digestive system |  |  |
| circulatory system |  |  |
| skeletal system |  |  |
| muscular system |  |  |