Year 6 – Animals including Humans



|  |  |
| --- | --- |
| National Curriculum Outcomes: Knowledge* Identify and name the main parts of the human circulatory system, and describe the functions of the hearts, 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
 | National Curriculum Outcomes: Working Scientifically* Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
* Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
* Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
* Using test results to make predictions and to set up further comparative and fair tests
* 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.
* Identifying scientific evidence that has been used to support or refute ideas or arguments.
 |
| Children might work scientifically by:Exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health. (*Taken from the National Curriculum*) |
| Links to prior learning**Year 1:** identify, name, draw and label the basic parts of the human body and say which part of the body is associated with which sense.**Year 2:** describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.**Year 3:** identify that humans and some other animals have skeletons for support, protection and movement. Investigate the way in which water is transported within plants.**Year 4:** describe the simple functions of the basic parts of the digestive system in humans. | Links to future learning**Key Stage 3:** effects of recreational drugs on behaviour, health and life processes. Respiratory system. Content of a healthy human diet and consequences of imbalances in this diet |
| Key VocabularyHeart, circulation, circulatory, respire, breathe, oxygen, carbon dioxide, blood vessels, blood, lungs, diet, exercise, drugs, nutrients | Common Misconceptions* Children may think their heart is on the left side of their chest rather than on the centre
* They may think their heart makes blood
* Children may think that their blood travels in one loop form the heart to the lungs and around the body, and that some of their blood is blue and some is red
* Because of the common use of the term, children may think all drugs are bad for you
* They may also think all fat is bad for you and you should never eat foods containing lots of fat. Similarly, they may think all dairy and all foods with protein are good for you and you can eat as much of these as you want
 |
| Key knowledge/facts that the children need to know* The heart, blood vessels, and the blood are parts of the circulatory system
* The heart’s function is to pump blood around the body.
* The lungs take in oxygen from the air we breathe.
* The blood vessels transport oxygen and energy to all parts of the body.
* Exercise is important to keep the heart healthy.
* Fatty foods can clog arteries and prevent the heart from working effectively.
* Smoking can lead to tar build up in the lungs, and can damage healthy lungs.
 | Links to real life* How can changes in our diet change how we feel, or how good we are at certain things?
* How might Simone Biles’ diet differ from Ellie Simmonds’? How would they differ from ours? How about our favourite footballers/rugby players?
* If our heart is in our chest, why can we feel our pulse in our wrists?
 |
| Important scientists**Santorio Santorio** – Italian physician who created a pendulum-like device to measure pulse for monitoring health**Sir Richard Doll** – A British scientist who pioneered research linking smoking to health problems | STEM Career Links**Cardiologist** (a doctor specialising in the heart and circulatory system)**Dietician** (develops nutrition advice to improve people’s diets)**Doctor** (works to keep people healthy and cure disease)**Exercise Physiologist** (a doctor who helps people improve their fitness)**Haematologist** (studies blood and its diseases)**Nutritionist** (studies nutrition in food and how it affects our bodies)**Sport Scientist** (works with sportspeople to help them achieve their best possible performance) |
| Suggested Enquiry Activities |
| Identifying and Classifying | Comparative and Fair Testing* How does exercise affect our heart rate?
* Do all exercises affect our heart rate in the same way?
 | Observation over Time* How does my heart rate change over the course of a day? (Maths link – this investigation would produce good data for a line graph)
* How long does it take my pulse rate to return to my resting pulse rate after exercise (recovery rate)?
 | Pattern Seeking* Are heart rate changes during exercises the same for adults and children?
* Does your height or weight affect how your heart rate goes up?
* Do older people/girls/taller people etc. have lower pulse rates?
 | Research using Secondary Sources* What happens to our bodies if we go without certain foods/nutrients?
* What would happen if we only ate food from McDonalds?
* Create a role play model for the circulatory system
 |
| **National Curriculum Statements** | **Outdoor Learning Activities** |
|

|  |  |
| --- | --- |
| * 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.
 |  |

 | The playground provides a larger space to create a model of the circulatory system. Pupils explore how their pulse rate changes during and after exercise |
| Wow Factor Experiences* Become blood cells and act out the circulatory system on a large scale on the playground
* Make ‘blood soup’ to learn about the different components in blood
* Create and prepare a healthy snack food and list the nutrients it contains (D&T link)
* Speak to a sports scientist who works for a favourite sports team (e.g. Leeds United or the Rhinos) and find out about the diets and training regimes of the players
 |
| Maths Links* Gather and record data on pulse rate before and after carrying out different activities/exercises
* Compare nutritional information on different snack foods, using the amount of nutrients in 100g to work out how much is in a portion
 | Literacy Links* Write an explanation of how the circulatory system works
* Create a persuasive information pamphlet about healthy living
* Try an ‘apprentice’ style drama activity – in groups, children each take on the role of a part of the circulatory system with one being Lord Sugar, then each part has to argue against being fired by explaining what it’s role in the system is and how vitally important it is
 | Broader Curriculum Links**PE:** How does our heart rate change during a PE lesson? How long does it take to return to normal afterwards? Is there a difference in the heart rate of children who do exercise outside of school (for example dance/gymnastics clubs or being on a football team) and those who don’t?**D&T:** Children could design, prepare and market a healthy snack for a given target market**History:** How have ideas about the circulatory system changed over time? What did people think in the civilization you are studying at the moment? |
| Story LinksPig Heart Boy – Malorie Blackman |
| Helpful WeblinksAssessment exemplification (could also be useful with planning ideas) – <https://www.planassessment.com/product-page/examples-of-work-animals-including-humans-y6-muharem>CPD on this topic (free) – <https://www.reachoutcpd.com/courses/upper-primary/body-systems/>BBC Class Clips (useful videos) – <https://www.bbc.co.uk/bitesize/clips/z9dg9j6>STEM Learning collection of resources for this unit– <https://www.stem.org.uk/resources/community/collection/13109/year-6-animals-including-humans> |

NB: It would be useful to teach this unit **after the unit on Living Things and their Habitats**, as children may have opportunities to apply the vocabulary they have learned when describing animals in this unit