

# Science

## Year 6 - Spring 1-Animals including Humans

National Curriculum / End Point statement						
<p><b>Animals including Humans</b></p> <ul style="list-style-type: none"> <li>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul> <p><b>Working Scientifically</b></p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>using test results to make predictions to set up further comparative and fair tests</li> <li>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</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments.</li> </ul>						
Week 1	Week 2	Week 3	Week 4 (TAPs)	Week 5	Week 6	Week 7
Reactivate learning: Yr3 skeletons, organs, Yr 4 digestive system, teeth and nutrition  WALT identify and name the main parts of the circulatory system	WALT explain the function of the heart, blood vessels and blood	WALT identify how water and nutrients are transported through the body	WALT use test results to make predictions to set up further comparative and fair tests	WALT explain how diet and exercise impacts on the human body	WALT describe the effect of drugs and lifestyle on the human body	WALT explore the work of famous scientists and their impact on lifestyles
In Focus - <a href="https://explorify.uk/en/activities/zoom-in-zoom-out/red-doughnuts">https://explorify.uk/en/activities/zoom-in-zoom-out/red-doughnuts</a>	In Focus - <a href="https://explorify.uk/en/activities/odd-one-out/get-your-blood-pumping">https://explorify.uk/en/activities/odd-one-out/get-your-blood-pumping</a>	In Focus - <a href="https://explorify.uk/en/activities/odd-one-out/fuel-up">https://explorify.uk/en/activities/odd-one-out/fuel-up</a>	In Focus - <a href="https://explorify.uk/en/activities/the-big-question/how-could-you-measure-the-benefits-of-walking">https://explorify.uk/en/activities/the-big-question/how-could-you-measure-the-benefits-of-walking</a>	In Focus - <a href="https://explorify.uk/en/activities/the-big-question/how-can-we-stay-fit-and-healthy-as-we-get-older">https://explorify.uk/en/activities/the-big-question/how-can-we-stay-fit-and-healthy-as-we-get-older</a>	In Focus - <a href="https://explorify.uk/en/activities/the-big-question/how-can-you-help-someone-dance-for-24-hours">https://explorify.uk/en/activities/the-big-question/how-can-you-help-someone-dance-for-24-hours</a>	In Focus - <a href="https://explorify.uk/en/activities/whats-going-on/super-broccoli-food-research-scientist">https://explorify.uk/en/activities/whats-going-on/super-broccoli-food-research-scientist</a>
Success Criteria						
I know what blood does within the body	I know where the heart is located within the body	I know why water is important for living things	I can make a prediction based on results I can explain my prediction	I know what a balanced diet is	I know about the effects of drugs on the body	I can recognise the impact of diet, drugs, lifestyle exercise

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<p>I can name the parts of the circulatory system</p> <p>I know what a vein/artery is</p> <p>I know where the lungs are and what their job is</p>	<p>I can explain the role of the heart within the circulatory system</p> <p>I can explain how blood moves around the body</p> <p>I can tell you how the circulatory system works</p>	<p>I can tell you how animals get nutrients (reactivate year 4 learning)</p> <p>I know which parts of the body absorb water and nutrients</p> <p>I can describe how water is transported through the body</p> <p>I can describe how nutrients are transported through the body</p>	<p>I can carry out a scientific enquiry to answer my question</p>	<p>I can explain how exercise affects the body</p> <p>I can explain why frequent exercise is important for health</p>	<p>I know why some people may need to take drugs to stay healthy</p> <p>I can talk about when drugs may be harmful</p> <p>I can explain why sleep is important for a healthy lifestyle</p> <p>NB; medicines, recreational drugs etc and the effects both positive and negative of both</p>	<p>on the way my body functions.</p>
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### Suggested Outcome

<p>Children can draw and label the circulatory system and explain the functions of different parts</p>	<p>Children can locate the heart and explain the function. They can also explain how it works with the other parts of the circulatory system.</p>	<p>Children can explain digestion and how the water and nutrients move through the body.</p>	<p>Children can use their data to make further predictions linking how hard the heart has to work with the heart rate, e.g. When you are upside down the distance that the blood needs to be pumped upwards is greater, so your heart works harder and beats faster. Therefore, I predict that our pulse rates would rise if we raised our arms as the blood would also be pumped upwards.</p>	<p>Children investigate the impact of exercise on the body by creating their own simple tests e.g. intensity of different exercises on the body</p>	<p>Children could research the effects of drugs on the human body</p> <p><a href="https://www.bbc.co.uk/bite-size/topics/zrffr82">https://www.bbc.co.uk/bite-size/topics/zrffr82</a></p>	<p>Children can research notable scientists (see below) and see how their work has impacted on advice/lifestyle today. They could create a biography.</p>
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Vocabulary	NC links
<p>ribs, rib cage, <b>cartilage</b>, <b>lungs</b>, <b>heart</b>, <b>breast bone</b>, chest, organ, <b>kidneys</b>, digestion, <b>reproduction</b>, control, <b>oxygen</b>, movement, variable, heart rate, smoking, <b>vein</b>, <b>artery</b></p>	<p>PSHE</p> <p>PE</p> <p>Science - Yr3 skeletons and organs, Y4 digestive system and teeth, Yr3 nutrition</p>
Key Learning	

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The heart pumps blood in the blood vessels around to the lungs. Oxygen goes into the blood and carbon dioxide is removed. The blood goes back to the heart and is then pumped around the body. Nutrients, water and oxygen are transported in the blood to the muscles and other parts of the body where they are needed. As they are used, they produce carbon dioxide and other waste products. Carbon dioxide is carried by the blood back to the heart and then the cycle starts again as it is transported back to the lungs to be removed from the body. This is the human circulatory system.

Diet, exercise, drugs and lifestyle have an impact on the way our bodies function. They can affect how well our heart and lungs work, how likely we are to suffer from conditions such as diabetes, how clearly we think and generally how fit and well we feel. Some conditions are caused by deficiencies in our diet e.g. lack of vitamins. See statutory requirement for PSHE to link with this unit

Possible Evidence	Common Misconceptions
<ul style="list-style-type: none"><li>• Children can draw a diagram of the circulatory system, label the parts and annotate it to show what the parts do</li><li>• Children can produce a piece of writing that demonstrates the key knowledge e.g. job description of the heart or a non-chron report.</li></ul>	<p>Some children may think:</p> <ul style="list-style-type: none"><li>• Your heart is on the left side of your chest</li><li>• The heart makes blood</li><li>• The blood travels in one loop from the heart, to the lungs and around the body</li><li>• When we exercise, the heart beats faster to work the muscle more</li><li>• Some blood in our bodies is blue and some is red</li><li>• We just eat food for energy</li><li>• All fat is bad for you</li></ul>

Notable Scientists
Leonardo Da Vinci Santorio Santorio Dr Katherine Dibb Sir Richard Doll Justus von Liebig
CPD opportunity
<a href="https://www.reachoutcpd.com/courses/upper-primary/body-systems/">https://www.reachoutcpd.com/courses/upper-primary/body-systems/</a>
Useful Links
<ul style="list-style-type: none"><li>• <a href="https://www.bbc.co.uk/bitesize/topics/zwdr6yc">https://www.bbc.co.uk/bitesize/topics/zwdr6yc</a></li><li>• <a href="https://app.discoveryeducation.co.uk/learn/channels/channel/1a63f75b-d5ff-4e70-8cf7-fec8ede15b70">https://app.discoveryeducation.co.uk/learn/channels/channel/1a63f75b-d5ff-4e70-8cf7-fec8ede15b70</a></li></ul>

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### Animals, including humans

<b>Early learning goal</b>	<ul style="list-style-type: none"> <li>Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur and talk about changes.</li> </ul>
<b>Year 1</b>	<ul style="list-style-type: none"> <li>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</li> <li>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</li> <li>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> </ul>
<b>Year 2</b>	<ul style="list-style-type: none"> <li>Notice that animals, including humans, have offspring which grow into adults.</li> <li>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</li> <li>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> <li>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. (Y2 - Living things and their habitats)</li> </ul>
<b>Year 3</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>
<b>Year 4</b>	<ul style="list-style-type: none"> <li>Describe the simple functions of the basic parts of the digestive system in humans.</li> <li>Identify the different types of teeth in humans and their simple functions.</li> <li>Construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>
<b>Year 5</b>	<ul style="list-style-type: none"> <li>Describe the changes as humans develop to old age.</li> <li>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (Y5 - Living things and their habitats)</li> <li>Describe the life process of reproduction in some plants and animals. (Y5 - Living things and their habitats)</li> </ul>
<b>Year 6</b>	<ul style="list-style-type: none"> <li>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</li> <li>Describe the ways in which nutrients and water are transported within animals, including humans.</li> <li>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals. (Y6 - Living things and their habitats)</li> <li>Give reasons for classifying plants and animals based on specific characteristics. (Y6 - Living things and their habitats)</li> </ul>
<b>KS3</b>	<ul style="list-style-type: none"> <li>Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta.</li> <li>The consequences of imbalances in the diet, including obesity, starvation and deficiency diseases.</li> <li>The effects of recreational drugs (including substance misuse) on behaviour, health and life processes.</li> <li>The structure and functions of the gas exchange system in humans, including adaptations to function.</li> <li>The mechanism of breathing to move air in and out of the lungs.</li> <li>The impact of exercise, asthma and smoking on the human gas exchange system.</li> </ul>

Red is linked from other topics