

Programme of Study



Sheep Dip Lane
Academy

KS2 Cycle A
Year 5 & 6

Animals including humans

SCIENCE

Main Strand/Concepts	<p><u>Biology</u> B1: Living things are special collections of matter that make copies of themselves, use energy and grow. B2: Living things on Earth come in a huge variety of different forms that are <u>all related</u> because they all came from the same starting point 4.5 billion years ago. B3: The different kinds of life, animals, plants and microorganisms, have evolved over millions of generations into different forms in order to survive in the environments in which they live.</p>
Links to Prior Learning	<p>In lower KS2 pupils were taught to:</p> <ul style="list-style-type: none"> ♣ 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 ♣ identify that humans and some other animals have skeletons and muscles for support, protection and movement. ♣ describe the simple functions of the basic parts of the digestive system in humans ♣ identify the different types of teeth in humans and their simple functions ♣ construct and interpret a variety of food chains, identifying producers, predators and prey.
Main enquiry question/s	Fascinating Human Facts
Programme of Study NC Requirements	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> ♣ describe the changes as humans develop to old age. <p>Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty. Pupils could work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows.</p> <ul style="list-style-type: none"> ♣ 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 the ways in which nutrients and water are transported within animals, including humans. <p>Pupils should build on their learning from years 3 and 4 about the main body parts and internal organs (skeletal, muscular and digestive system) to explore and answer questions that help them to understand how the circulatory system enables the body to function. Pupils should learn how to keep their bodies healthy and how their bodies might be damaged – including how some drugs and other substances can be harmful to the human body. Pupils might work scientifically by: exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.</p>

Learning Objective	Pre-Learning Expectations	
Enquiry question:		
1 st Concept To recap learning form lower KS2.	<p>Recap: 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</p> <p>that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>the simple functions of the basic parts of the digestive system in humans</p> <p>different types of teeth in humans and their simple functions</p> <p>interpret a variety of food chains, identifying producers, predators and prey.</p>	
Subject Specific Vocabulary	Core Knowledge - What do we want the children to know?	Suggested learning activities – What key experiences?
Nutrition Skeleton Muscles Digestion Teeth (canine, molar, pre-molar, incisor) Producer Predator prey	<p>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</p> <p>that humans and some other animals have skeletons and muscles for support, protection and movement.</p> <p>the simple functions of the basic parts of the digestive system in humans</p> <p>that humans have different types of teeth which have different simple functions</p> <p>that food chains show a passage of energy.</p>	<p>Recall questions - quiz based on prior learning.</p> <p>Multiple choice</p> <p>Odd one out</p> <p>Complete missing words</p>
Assessment questions	<p>Why do humans need a skeleton?</p> <p>What foods do humans need to eat, why?</p> <p>Describe the journey of food after it is eaten?</p> <p>Why do we need different types of teeth?</p>	
Learning Objective	Enquiry question: Why is your heart important?	
	Pre-Learning Expectations	
2 nd Concept	Brainstorm what is known about the heart.	

<p>To identify and name the main parts of the human circulatory system.</p> <p>To describe the functions of the heart, blood vessels and blood.</p>	<p>https://www.bbc.co.uk/bitesize/topics/zwdr6yc (share video clips - circulatory system, blood, blood vessels and how the heart works)</p> <p>Exercise: star jumps, jog on the spot – ask children to compare how they feel before and after exercise. Discuss.</p>	
<p>Subject Specific Vocabulary</p>	<p>Core Knowledge - What do we want the children to know?</p>	<p>Suggested learning activities – What key experiences?</p>
<p>Heart Blood Blood vessel Platelets Haemoglobin Oxygen / oxygenated Muscles Circulation Arteries / artery Veins / vein Aorta Atrium Capillary Circulatory system Replenish</p>	<p>To identify and name the main parts of the human circulatory system.</p> <p>To know that circulation is the pumping of blood around the body.</p> <p>To know that the purpose of circulation is to carry oxygen to all cells around the body.</p> <p>To know that blood is made up of white and red blood cells, platelets and haemoglobin.</p> <p>To know arteries carry blood to the heart and veins carry blood away from the heart.</p> <p>To know that the heart is made up of 4 chambers</p>	<p>Dissect and observe the components of a heart.</p> <p>Label a heart – aorta, artery, vein, left and right ventricles</p> <p>Create glossary of main parts and their functions / Fact file about the heart / Answer: How does the heart work and why is it important?</p>
<p>Assessment questions</p>	<p>Why is your heart important?</p> <p>Who was William Harvey and why was he important?</p>	<p>Knowledge check:</p> <ul style="list-style-type: none"> - matching definitions to parts. - Filling in missing words (e.g. The pumps blood around the body. - Label heart - Heart facts – sticky knowledge to be assessed.
<p>Learning Objective</p>	<p>Enquiry question: Is a healthy lifestyle important?</p> <p>Pre-Learning Expectations</p>	
<p>3rd Concept</p> <p>To recognise the impact of diet, exercise, drugs and lifestyle on the way</p>	<p>Recap food groups. Ask what is needed for a healthy lifestyle? (balanced diet)</p> <p>https://www.bbc.co.uk/bitesize/topics/zrsb87h/articles/zjj6pg8 (share video - what is a balanced diet?)</p>	

<p>their bodies function</p>		
<p>Subject Specific Vocabulary</p>	<p>Core Knowledge - What do we want the children to know?</p>	<p>Suggested learning activities – What key experiences?</p>
<p>Carbohydrate Protein Fat Fibre Vitamins Minerals Diet Exercise Drugs Tobacco Alcohol</p>	<p>To recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>To know what a balance diet is and why it is important.</p> <p>To know that drugs (tobacco, alcohol, drugs and other substances) can be helpful and harmful.</p> <p>To know exercise has an effect on heart rate.</p> <p>To know a healthy diet is important otherwise it has affects on the body– (obesity, malnutrition, addiction).</p>	<p>Daily food log – explaining elements that make up food (carbohydrate, protein, fat, fibre, vitamins and minerals)</p> <p>Debate: are drugs helpful or harmful?</p> <p>https://www.bbc.co.uk/bitesize/topics/zrsb87h/articles/zg982nb (medicines and drugs)</p> <p>Scenario: 4 adults with different lifestyles, which adult is most likely to develop heart disease?</p> <p>Graph work: smoking and it’s effects.</p>
<p>Assessment questions</p>	<p>What gives your body fuel? What helps your body repair? Why are vitamins and minerals important?</p>	<p>Knowledge check:</p> <p>To stay healthy you should: identify correct statement. How might being close to people who are smoking damage your health?</p>
<p>Learning Objective</p>	<p>Enquiry question: How is heart rate affected by exercise? Pre-Learning Expectations</p>	
<p>4th Concept To know that exercise effects heart rate.</p>	<p>Recap main parts of circulatory system. Recall why exercise is important.</p> <p>Discuss investigation: hypothesis, question, prediction, method, fair test (dependant variable and independent variables), results, conclusion</p>	
<p>Subject Specific Vocabulary</p>	<p>Core Knowledge - What do we want the children to know?</p>	<p>Suggested learning activities – What key experiences?</p>
<p>Heart rate Exercise Pulse Relenish Resting heart rate</p>	<p>To know that exercise effects heart rate.</p> <p>To know that exercise increases heart rate.</p> <p>To know that the fitter a person is the quicker the heart rate recovers.</p>	<p>Complete investigation</p>

<p>Body</p> <p>hypothesis, question, prediction, method, fair test (dependant variable and independent variables), results, conclusion</p>		
<p>Assessment questions</p>	<p>Why is exercise important?</p>	<p>https://www.bbc.co.uk/bitesize/topics/zrsb87h/articles/z4dxhbk (Why is a healthy lifestyle important?)</p>
<p>Learning Objective</p>	<p>Enquiry Question: How are water and nutrients transported within animals? Pre-Learning Expectations</p>	
<p>5th Concept</p> <p>To describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>To recall digestive system: i.e. food travels from the mouth – oesophagus – stomach – small intestine – large intestine – rectum - anus</p> <p>https://www.bbc.co.uk/bitesize/topics/z27kng8 (share video clips - digestive system, teeth, what happens in mouth, stomach and intestines)</p>	
<p>Subject Specific Vocabulary</p>	<p>Core Knowledge - What do we want the children to know?</p>	<p>Suggested learning activities – What key experiences?</p>
<p>Nutrients Water Transportation</p>	<p>To know that food and water are absorbed in the small intestine and then pass into the blood to travel around the circulatory system – around the body.</p> <p>To know that excretion is the passing of waste. (urine / faeces)</p>	<p>Label journey of food and water through the body.</p>
<p>Assessment questions</p>	<p>What would happen if we didn't pass waste?</p>	
<p>Learning Objective</p>	<p>Enquiry Question: How does your body change as you grow? Pre-Learning Expectations</p>	
<p>6th Concept</p>	<p>What is growth?</p>	

<p>To describe the changes as humans develop to old age</p>	<p>Can we remember the life cycle of a human? Discuss that a life cycle leads to change over time.</p>	
<p>Subject Specific Vocabulary</p>	<p>Core Knowledge - What do we want the children to know?</p>	<p>Suggested learning activities – What key experiences?</p>
<p>Embryo Baby Infant Fertilized eggs Children Adolescent / teenager Adult Young Old / old age Puberty</p>	<p>To be able to describe the changes that occur as a human grows. To know the life cycle of a human.</p>	<p>Order and label a timeline showing growth to old age. https://www.bbc.co.uk/bitesize/topics/zgssgk7/articles/z2msv4j (share video clip ‘How do humans change during their lifetime?’) Explain how the body changes at each stage.</p>
<p>Assessment questions</p>	<p>What happens to your body in puberty?</p>	<p>Match each stage of life to a description of the stage. Identify missing life processes and evidence: e.g. life process growth, evidence people get taller.</p>
<p>Application: Children to write an ‘awesome essay’ stating what has been learnt during the sequence of learning.</p>		