GOLDSBOROUGH SICKLINGHALL FEDERATION

INSPIRE NURTURE BELIEVE ACHIEVE

*Working **together** to be the **best** that we can be.*

Happiness	Perserverance	Resilience	Kindness	Friendship	Respect

Science: Animals Including Humans Progression of Skills and Milestones Document

EYFS: Animals, including humans

3 and 4-year-olds will be learning to:	Examples of how to support this:
Use all their senses in hands-on exploration of natural materials. Explore collections of materials with similar and/or different properties. Talk about what they see, using a wide vocabulary.	Provide interesting natural environments for children to explore freely outdoors. Make collections of natural materials to investigate and talk about. Suggestions: • contrasting pieces of bark • different types of leaves and seeds • different types of rocks • different shells and pebbles from the beach Provide equipment to support these investigations. Suggestions: magnifying glasses or a tablet with a magnifying app. Encourage children to talk about what they see. Model observational and investigational skills. Ask out loud: "I wonder if…?" Plan and introduce new vocabulary, encouraging children to use it to discuss their findings and ideas.
Plant seeds and care for growing plants. Understand the key features of the life cycle of a plant and an animal. Begin to understand the need to respect and care for the natural environment and all living things.	Show and explain the concepts of growth, change and decay with natural materials. Suggestions: • plant seeds and bulbs so children observe growth and decay over time • observe an apple core going brown and mouldy over time • help children to care for animals and take part in first-hand scientific explorations of an-imal life cycles, such as caterpillars or chick eggs. Plan and introduce new vocabulary related to the exploration. Encourage children to use it in their dis-cussions, as they care for living things. Encourage children to refer to books, wall displays and online resources. This will support their investigations and extend their knowledge and ways of thinking.

Children in reception will be learning to:	Examples of how to support this:
Describe what they see, hear and feel whilst outside.	Encourage focused observation of the natural world. Listen to children describing and commenting on things they have seen whilst outside, including plants and animals. Encourage positive interaction with the outside world, offering children a chance to take supported risks, appropriate to themselves and the environment within which they are in. Name and describe some plants and animals children are likely to see, encouraging children to recognise familiar plants and animals whilst outside.
Explore the natural world around them.	Provide children with have frequent opportunities for outdoor play and exploration. Encourage interactions with the outdoors to foster curiosity and give children freedom to touch, smell and hear the natural world around them during hands-on experiences. Create opportunities to discuss how we care for the natural world around us. Offer opportunities to sing songs and join in with rhymes and poems about the natural world. After close observation, draw pictures of the natural world, including animals and plants. Observe and interact with natural processes, such as ice melting, a sound causing a vibration, light travelling through transparent material, an object casting a shadow, a magnet attracting an object and a boat floating on water.

ELG- The Natural World

The Natural World ELG

Children at the expected level of development will:

- Explore the natural world around them, making observations and drawing pictures of animals and plants;
- Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class;
- Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

Notes:

Encourage children to be active and energetic by organising lively games, since physical activity is important in maintaining good health and in guarding against children becoming overweight or obese in later life. Plan opportunities, particularly after exercise, for children to talk about how their bodies feel. Find ways to involve children so that they are all able to be active in ways that interest them and match their health and ability.

Provide play maps and small world equipment for children to create their own environments. Provide opportunities to observe things closely through a variety of means, including magnifiers and photographs.
Use the local area for exploring both the built and the natural environment, providing opportunities to observe things closely through a variety of means, including magnifiers and photographs.

Year 1: Animals, including humans

- **Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals**
- **Identify and name a variety of common animals that are carnivores, herbivores and omnivores**
- **Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)**
- **Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense**

Notes:
Pupils should use the local environment throughout the year to explore and answer questions about animals in their habitat. They should understand how to take care of animals taken from their local environment and the need to return them safely after study. Pupils should become familiar with the common names of some fish, amphibians, reptiles, birds and mammals, including those that are kept as pets.

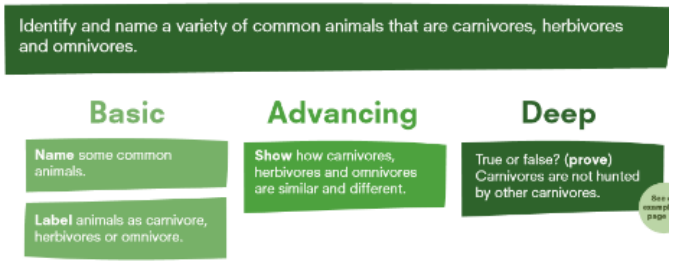
Pupils should have plenty of opportunities to learn the names of the main body parts (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth) through games, actions, songs and rhymes.

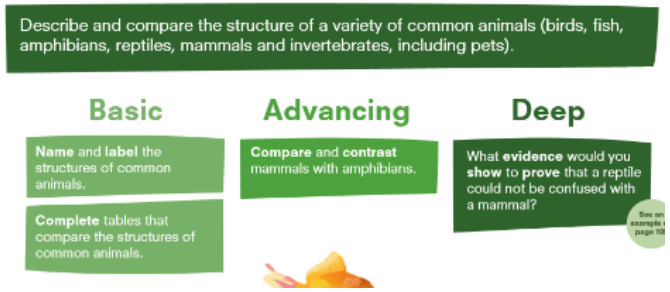
Pupils might work scientifically by: using their observations to compare and contrast animals at first hand or through videos and photographs, describing how they identify and group them; grouping animals according to what they eat; and using their senses to compare different textures, sounds and smells.

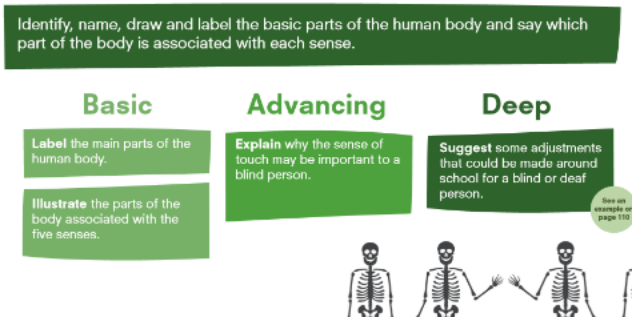
Key Vocabulary	Common Misconceptions
Head, body, eyes, ears, mouth, teeth, leg, tail, wing, claw, fin, scales, feathers, fur, beak, paws, hooves • Names of animals experienced first-hand from each vertebrate group • Parts of the body including those linked to PSHE teaching (see joint document produced by the ASE and PSHE Association) • Senses – touch, see, smell, taste, hear, fingers (skin), eyes, nose, ear and tongue N.B. The children need to be able to name and identify a range of animals in each group e.g. name specific birds and fish. They do not need to use the terms mammal, reptiles etc. or know the key characteristics of each, although they will probably be able to identify birds and fish, based on their characteristics.	Some children may think: • only four-legged mammals, such as pets, are animals • humans are not animals • insects are not animals • all ‘bugs’ or ‘creepy crawlies’, such as spiders, are part of the insect group • amphibians and reptiles are the same.

The children also do not need to use the words carnivore, herbivore and omnivore. If they do, ensure that they understand that carnivores eat other animals, not just meat. Although we often use our fingers and hands to feel objects, the children should understand that we can feel with many parts of our body.	
Activities	**Possible Evidence**
• Make first-hand, close observations of animals from each of the groups. • Compare two animals from the same or different groups. • Classify animals using a range of features. • Identify animals by matching them to named images. • Classify animals according to what they eat. • Make first-hand close observations of parts of the body e.g. hands, eyes. • Compare two people. • Take measurements of parts of their body. • Compare parts of their own body. • Look for patterns between people e.g. Do people with big hands have big feet? • Classify people according to their features. • Investigate human senses e.g. Which part of my body is good for feeling, which is not? Which food/flavours can I identify by taste? Which smells can I match? *TAPS practical assessments to be used at the end of each unit.*	• Can name a range of animals which includes animals from each of the vertebrate groups • Can describe the key features of these named animals • Can label key features on a picture/diagram • Can write descriptively about an animal • Can write a What am I? riddle about an animal • Can describe what a range of animals eat • Can play and lead 'Simon says' • During PE lessons, can follow instructions involving parts of the body • Can label parts of the body on pictures and diagrams • Can explore objects using different senses • Can sort and group animals using similarities and differences • Can use simple charts etc. to identify unknown animals • Can create a drawing of an imaginary animal labelling its key features • Can use secondary resources to find out what animals eat, including talking to experts e.g. pet owners, zookeepers etc. • Can use first-hand close observations to make detailed drawings • Can name body parts correctly when talking about measurements and comparisons e.g. "My arm is x straws long." "My arm is x straws long and my leg is y straws long. My leg is longer than my arm." "We both have hands, but his are bigger than mine." "These people have brown eyes and these have blue." • Can talk about their findings from investigations using appropriate vocabulary e.g. "My fingers are much better at feeling than my toes" "We found that the crisps all taste the same." • *'Concept Cartoons' and 'Exit Cards' to be used at the end of lessons to assess understanding.*

Proof of Progress (Working Towards, Age Related Expectation or Greater Depth)







Year 2: Animals, including humans

- **Notice that animals, including humans, have offspring which grow into adults**
- **Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)**
- **Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene**

Notes:

Pupils should be introduced to the basic needs of animals for survival, as well as the importance of exercise and nutrition for humans. They should also be introduced to the processes of reproduction and growth in animals. The focus at this stage should be on questions that help pupils to recognise growth; they should not be expected to understand how reproduction occurs.

The following examples might be used: egg, chick, chicken; egg, caterpillar, pupa, butterfly; spawn, tadpole, frog; lamb, sheep. Growing into adults can include reference to baby, toddler, child, teenager, adult.

Pupils might work scientifically by: observing, through video or first-hand observation and measurement, how different animals, including humans, grow; asking questions about what things animals need for survival and what humans need to stay healthy; and suggesting ways to find answers to their questions.

Key Vocabulary	Common Misconceptions
Offspring, reproduction, growth, child, young/old stages (examples - chick/hen, baby/child/adult, caterpillar/butterfly), exercise, heartbeat, breathing, hygiene, germs, disease, food types (examples – meat, fish, vegetables, bread, rice, pasta	Some children may think: • an animal's habitat is like its 'home' • all animals that live in the sea are fish • respiration is breathing • breathing is respiration.

Activities	Possible Evidence
• Ask people questions and use secondary sources to find out about the life cycles of some animals. • Observe animals growing over a period of time e.g. chicks, caterpillars, a baby. • Ask questions of a parent about how they look after their baby. • Ask pet owners questions about how they look after their pet. • Explore the effect of exercise on their bodies. • Classify food in a range of ways, including using the Eatwell Guide. • Investigate washing hands, using glitter gel. *TAPS practical assessments to be used at the end of each unit.*	• Can describe how animals, including humans, have offspring which grow into adults, using the appropriate names for the stages • Can state the basic needs of animals, including humans, for survival • Can state the importance for humans of exercise, eating the right amounts of different types of food, and hygiene • Can name foods in each section of the Eatwell Guide • Can describe, including using diagrams, the life cycle of some animals, including humans, and their growth to adults e.g. by creating a life cycle book for a younger child • Can measure/observe how animals, including humans, grow. • Show what they know about looking after a baby/animal by creating a parenting/pet owners' guide • Explain how development and health might be affected by differing conditions and needs being met/not met *'Concept Cartoons' and 'Exit Cards' to be used at the end of lessons to assess understanding.*

Key Stage 1 Working Scientifically

- **Identifying and classifying**
- **Gathering and recording data to help in answering questions**

Children use their observations and testing to compare objects, materials and living things. They sort and group these things, identifying their own criteria for sorting. They use simple secondary sources (such as identification sheets) to name living things. They describe the characteristics they used to identify a living thing.

The children record their observations e.g. using photographs, videos, drawings, labelled diagrams or in writing. They record their measurements e.g. using prepared tables, pictograms, tally charts and block graphs. They classify using simple prepared tables and sorting rings.

Proof of Progress (Working Towards, Age Related Expectation or Greater Depth)

Notice that animals, including humans, have offspring which grow into adults.

Basic	Advancing	Deep
Name the offspring of animals and humans (e.g. babies for humans, puppies for dogs). **Match** the offspring to the adult.	**Explain** the main **differences** between adult animals and humans and their offspring.	**Suggest** some ways that an animal's offspring (including humans) are dependent, for some time, on adults.

Investigate and describe the basic needs of animals, including humans, for survival (water, food and air).

Basic	Advancing	Deep
List the basic needs of animals, including humans, for survival.	**Compare** the types of food that different animals require.	**Explain the concept** of humans' need for clean water and why this is not so important for other animals.

Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.

Basic	Advancing	Deep
Describe a healthy diet. **Describe** a healthy lifestyle. **Observe** and **describe** the effect of exercise.	**Categorise** food types and **explain** why each group is important to humans.	**Create** a weekly menu and exercise programme for someone your age.

`End of Upper Key Stage 2 Age Related Expectations

Milestone indicator	Basic	Advancing	Deep
Identify and name a variety of common animals that are birds, fish, amphibians, reptiles, mammals and invertebrates.	**Name** some common animals. **Match** the animals to the labels birds, fish, amphibian, reptile, mammal and invertebrate.	**Point out** and **explain** the main differences between birds, fish, amphibians, reptiles, mammals and invertebrates.	**Create** a guide to recognising different types of animals.
Identify and name a variety of common animals that are carnivores, herbivores and omnivores.	**Name** some common animals. **Label** animals as carnivore, herbivores or omnivore.	**Show** how carnivores, herbivores and omnivores are similar and different.	True or false? **(prove)** Carnivores are not hunted by other carnivores.
Describe and compare the structure of a variety of common animals. (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets)	**Name** and **label** the structures of common animals. **Complete** tables that compare the structures of common animals.	**Compare** and **contrast** mammals with amphibians.	What **evidence** would you show to prove that a reptile could not be confused with a mammal?
Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.	**Label** the main parts of the human body. **Illustrate** the parts of the body associated with the five senses.	**Explain** why the sense of touch may be important to a blind person.	**Suggest** some adjustments that could be made around school for a blind or deaf person.
Notice that animals, including humans, have offspring which grow into adults.	**Name** the offspring of animals and humans. (e.g. babies for humans, puppies for dogs) **Match** the offspring to the adult.	**Explain** the main **differences** between adult animals and humans and their offspring.	**Suggest** some ways that an animal's offspring (including humans) are dependent, for some time, on adults.
Investigate and describe the basic needs of animals, including humans, for survival. (water, food and air)	**List** the basic needs of animals, including humans, for survival.	**Compare** the types of food that different animals require.	**Explain the concept** of humans' need for clean water and why this is not so important for other animals.
Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	**Describe** a healthy diet. **Describe** a healthy lifestyle. **Observe** and **describe** the effect of exercise.	**Categorise** food types and **explain** why each group is important to humans.	**Create** a weekly menu and exercise programme for someone your age.

Year 3: Animals, including humans

- **Notice that animals, including humans, have offspring which grow into adults**
- **Find out about and describe the basic needs of animals, including humans, for survival (water, food and air)**
- **Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene**

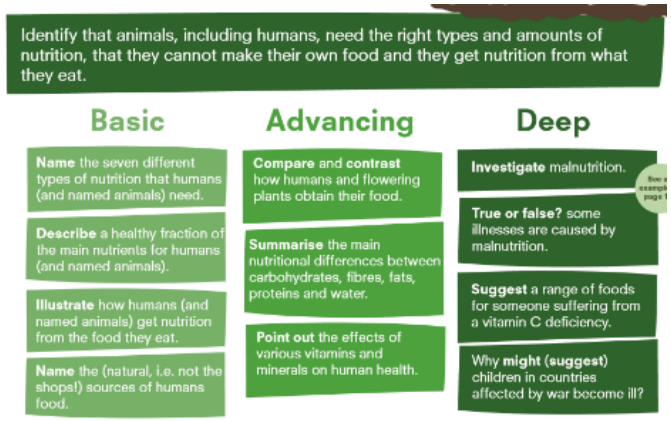
Notes:

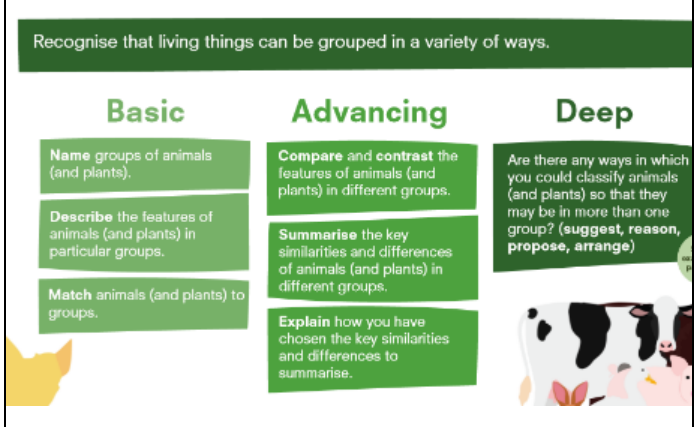
Pupils should continue to learn about the importance of nutrition and should be introduced to the main body parts associated with the skeleton and muscles, finding out how different parts of the body have special functions.

Pupils might work scientifically by: identifying and grouping animals with and without skeletons and observing and comparing their movement; exploring ideas about what would happen if humans did not have skeletons. They might compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat. They might research different food groups and how they keep us healthy, and design meals based on what they find out.

Key Vocabulary	Common Misconceptions
Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, muscles, joints	Some children may think: • certain whole food groups like fats are 'bad' for you • certain specific foods, like cheese are also 'bad' for you • diet and fruit drinks are 'good' for you • snakes are similar to worms, so they must also be invertebrates • invertebrates have no form of skeleton
Activities	**Possible Evidence**
• Classify food in a range of ways. • Use food labels to explore the nutritional content of a range of food items. • Use secondary sources to find out the types of food that contain the different nutrients. • Use food labels to answer enquiry questions e.g. How much fat do different types of pizza contain? How much sugar is in soft drinks? • Plan a daily diet to contain a good balance of nutrients. • Explore the nutrients contained in fast food. • Use secondary sources to research the parts and functions of the skeleton. • Investigate patterns asking questions such as: • Can people with longer legs run faster? • Can people with bigger hands catch a ball better? • Compare, contrast and classify skeletons of different animals. *TAPS practical assessments to be used at the end of each unit.*	• Can name the nutrients found in food • Can state that to be healthy we need to eat the right types of food to give us the correct amount of these nutrients • Can name some bones that make up their skeleton, giving examples that support, help them move or provide protection • Can describe how muscles and joints help them to move • Can classify food into those that are high or low in particular nutrients • Can answer their questions about nutrients in food, based on their gathered evidence • Can talk about the nutrient content of their daily plan • Use their data to look for patterns (or lack of them) when answering their enquiry question • Can give similarities e.g. they all have joints to help the animal move, and differences between skeletons *'Concept Cartoons' and 'Exit Cards' to be used at the end of lessons to assess understanding.*

Proof of Progress (Working Towards, Age Related Expectation or Greater Depth)





Year 4: Animals, including humans

- **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**

Notes:

Pupils should be introduced to the main body parts associated with the digestive system, for example: mouth, tongue, teeth, oesophagus, stomach, and small and large intestine, and explore questions that help them to understand their special functions.

Pupils might work scientifically by: comparing the teeth of carnivores and herbivores and suggesting reasons for differences; finding out what damages teeth and how to look after them. They might draw and discuss their ideas about the digestive system and compare them with models or images.

Key Vocabulary	Common Misconceptions
Digestive system, digestion, mouth, teeth, saliva, oesophagus, stomach, small intestine, nutrients, large intestine, rectum, anus, teeth, incisor, canine, molar, premolars, herbivore, carnivore, omnivore, producer, predator, prey, food chain	Some children may think: • arrows in a food chains mean ‘eats’ • the death of one of the parts of a food chain or web has no, or limited, consequences on the rest of the chain • there is always plenty of food for wild animals • your stomach is where your belly button is • food is digested only in the stomach • when you have a meal, your food goes down one tube and your drink down another • the food you eat becomes “poo” and the drink becomes “wee”.

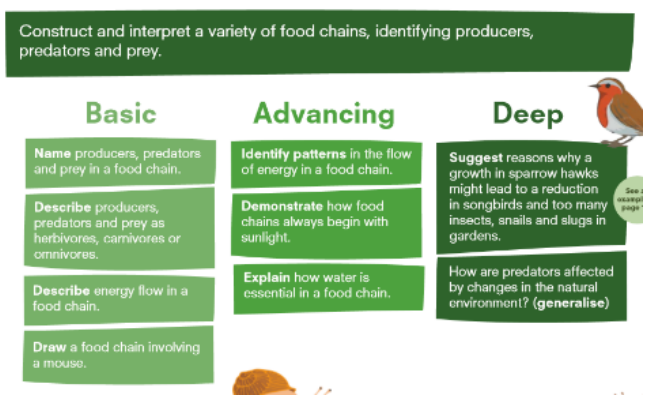
Activities	Possible Evidence
• Research the function of the parts of the digestive system. • Create a model of the digestive system using household objects. • Explore eating different types of food to identify which teeth are being used for cutting, tearing and grinding (chewing). • Classify animals as herbivores, carnivores or omnivores according to the type of teeth they have in their skulls. • Use food chains to identify producers, predators and prey within a habitat. • Use secondary sources to identify animals in a habitat and find out what they eat. *TAPS practical assessments to be used at the end of each unit.*	• Can sequence the main parts of the digestive system • Can draw the main parts of the digestive system onto a human outline • Can describe what happens in each part of the digestive system • Can point to the three different types of teeth in their mouth and talk about their shape and what they are used for • Can name producers, predators and prey within a habitat • Can construct food chains • Can sequence the main parts of the digestive system • Can draw the main parts of the digestive system onto a human outline • Can describe what happens in each part of the digestive system • Can point to the three different types of teeth in their mouth and talk about their shape and what they are used for • Can name producers, predators and prey within a habitat • Can construct food chains *'Concept Cartoons' and 'Exit Cards' to be used at the end of lessons to assess understanding.*

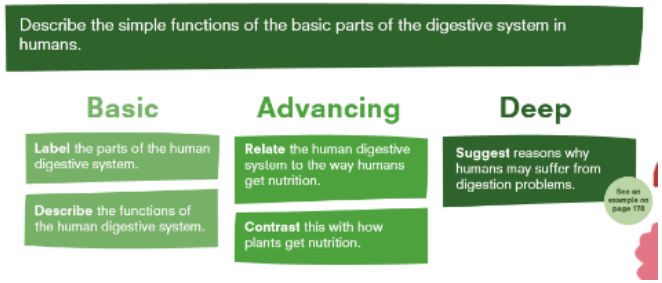
Lower Key Stage 2 Working Scientifically

- **Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions.**

The children sometimes decide how to record and present evidence. They record their observation e.g. using photographs, videos, pictures, labelled diagrams or writing. They record their measurements e.g. using tables, tally charts and bar charts (given templates, if required, to which they can add headings). They record classifications e.g. using tables, Venn diagrams, Carroll diagrams. Children are supported to present the same data in different ways in order to help with answering the question.

Proof of Progress (Working Towards, Age Related Expectation or Greater Depth)





Identify that humans and some animals have skeletons and muscles for support, protection and movement.

Basic

Label the main bones and joints in the human skeleton (and that of some animals).

Name the main muscles in the human body (and some animals).

Describe the role of the skeleton and muscles in support, protection and movement.

Observe and **describe** the role of muscles in human movement.

Advancing

Categorise muscle movement as relaxing or contracting.

Explain the **relationship** between the muscle groups as they relax and contract.

Deep

Recommend exercises that use each main muscle group in the human body.

See an example on page 177

Identify the different types of teeth in humans and their simple functions.

Basic

Label the types of adult human teeth.

Describe the functions of the different types of teeth.

Describe good care of teeth.

Advancing

Compare and **contrast** human teeth with those of a carnivorous animal.

Deep

Cite evidence of how diet is linked to the health of human teeth.

See an example on page 179

End of Lower Key Stage 2 Age Related Expectations

Milestone indicator	Basic	Advancing	Deep
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.	**Name** the seven different types of nutrition that humans (and named animals) need. **Describe** a healthy fraction of the main nutrients for humans (and named animals). **Illustrate** how humans (and named animals) get nutrition from the food they eat. **Name** the (natural, i.e. not the shops!) sources of humans food.	**Compare** and **contrast** how humans and flowering plants obtain their food. **Summarise** the main nutritional differences between carbohydrates, fibres, fats, proteins and water. **Point out** the effects of various vitamins and minerals on human health.	**Investigate** malnutrition. **True or false?** some illnesses are caused by malnutrition. **Suggest** a range of foods for someone suffering from a vitamin C deficiency? Why **might (suggest)** children in countries affected by war become ill?
Construct and interpret a variety of food chains, identifying producers, predators and prey.	**Name** producers, predators and prey in a food chain. **Describe** producers, predators and prey as herbivores, carnivores or omnivores. **Describe** energy flow in a food chain. **Draw** a food chain involving a mouse.	**Identify patterns** in the flow of energy in a food chain. **Demonstrate** how food chains always begin with sunlight. **Explain** how water is essential in a food chain.	**Suggest** reasons why a growth in sparrow hawks might lead to a reduction in songbirds and too many insects, snails and slugs in gardens. How are predators affected by changes in the natural environment? **(Generalise)**
Identify that humans and some animals have skeletons and muscles for support, protection and movement.	**Label** the main bones and joints in the human (and some animals) skeleton. **Name** the main muscles in the human (and some animals) body. Describe the role of the skeleton and muscles in support, protection and movement. **Observe** and **describe** the role of muscles in human movement.	**Categorise** muscle movement as relaxing or contracting. **Explain** the **relationship** between muscle groups as they relax and contract.	**Recommend** exercises that use each main muscle group in the human body.
Describe the simple functions of the basic parts of the digestive system in humans.	**Label** the parts of the human digestive system. **Describe** the functions of the human digestive system.	**Relate** the human digestive system to the way humans get nutrition. **Contrast** this with how plants get nutrition.	**Suggest** reasons why humans may suffer from digestion problems.
Identify the different types of teeth in humans and their simple functions.	**Label** the types of adult human teeth. **Describe** the functions of the different types of teeth. **Describe** good care of teeth.	**Compare** and **contrast** human teeth with those of a carnivore animal.	**Cite evidence** of how diet is linked to the health of human teeth.

Year 5: Animals, including humans

- **describe the changes as humans develop to old age**

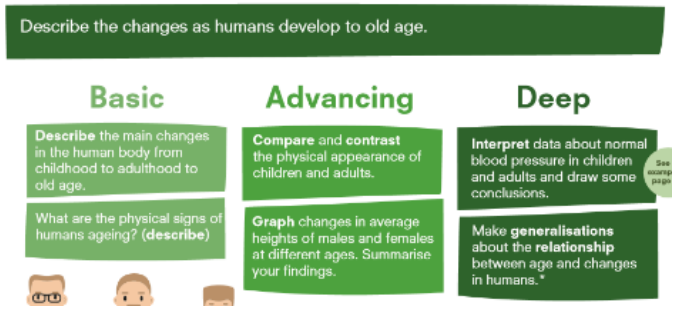
Notes:
Pupils should draw a timeline to indicate stages in the growth and development of humans. They should learn about the changes experienced in puberty.

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.

Key Vocabulary	Common Misconceptions
Puberty – the vocabulary to describe sexual characteristics	Some children may think: • a baby grows in a mother's tummy • a baby is "made".

Activities	Possible Evidence
This unit is likely to be taught through direct instruction due to its sensitive nature, although children can carry out a research enquiry by asking an expert e.g. school nurse to provide answers to questions that have been filtered by the teacher *TAPS practical assessments to be used at the end of each unit.*	• Can explain the changes that takes place in boys and girls during puberty • Can explain how a baby changes physically as it grows, and also what it is able to do • Can present information about the changes occurring during puberty as an information leaflet for other Y5 children or answers to 'problem page questions *'Concept Cartoons' and 'Exit Cards' to be used at the end of lessons to assess understanding.*

Proof of Progress (Working Towards, Age Related Expectation or Greater Depth)



Year 6: Animals, including humans

- **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**

Notes:
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.

Key Vocabulary	Common Misconceptions
Heart, pulse, rate, pumps, blood, blood vessels, transported, lungs, oxygen, carbon dioxide, nutrients, water, muscles, cycle, circulatory system, diet, exercise, drugs, lifestyle	Some children may think: • your heart is on the left side of your chest • the heart makes blood • the blood travels in one loop from the heart to the lungs and around the body • when we exercise, our heart beats faster to work the muscles more • some blood in our bodies is blue and some blood is red • we just eat food for energy • all fat is bad for you • all dairy is good for you • protein is good for you, so you can eat as much as you want • foods only contain fat if you can see it • all drugs are bad for you.
Activities	**Possible Evidence**
• Create a role play model for the circulatory system. • Carry out a range of pulse rate investigations: • fair test – effect of different activities on my pulse rate • pattern seeking – exploring which groups of people may have higher or lower resting pulse rates • observation over time - how long does it take my pulse rate to return to my resting pulse rate (recovery rate) • pattern seeking – exploring recovery rate for different groups of people.	• Can draw a diagram of the circulatory system and label the parts and annotate it to show what the parts do • Produces a piece of writing that demonstrates the key knowledge e.g. explanation text, job description of the heart • Use the role play model to explain the main parts of the circulatory system and their role • Can use subject knowledge about the heart whilst writing conclusions for investigations • Can explain both the positive and negative effects of diet, exercise, drugs and lifestyle on the body

- Research the negative effects of drugs (e.g. tobacco) and the benefits of a healthy diet and regular exercise by asking an expert or using carefully selected secondary sources.

TAPS practical assessments to be used at the end of each unit.

- Present information e.g. in a health leaflet describing impact of drugs and lifestyle on the body

'Concept Cartoons' and 'Exit Cards' to be used at the end of lessons to assess understanding.

Upper Key Stage 2 Working Scientifically

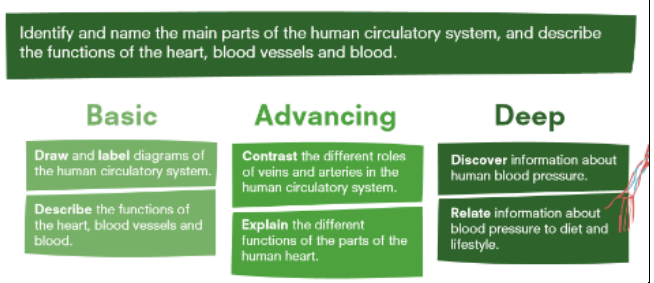
- **Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.**
- **Using test results to make predictions to set up further comparative and fair tests.**
- **Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations**.

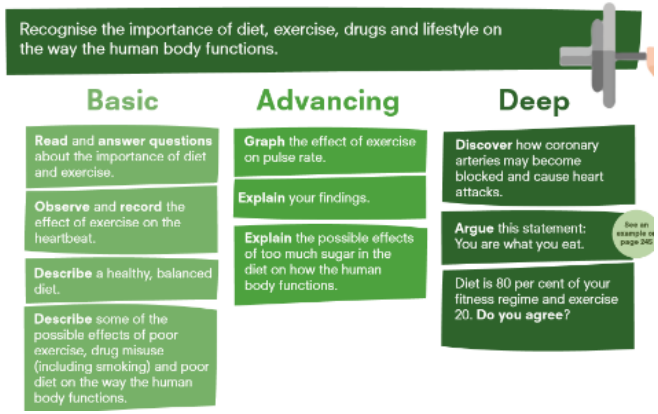
The children decide how to record and present evidence. They record observations e.g. using annotated photographs, videos, labelled diagrams, observational drawings, labelled scientific diagrams or writing. They record measurements e.g. using tables, tally charts, bar charts, line graphs and scatter graphs. They record classifications e.g. using tables, Venn diagrams, Carroll diagrams and classification keys. Children present the same data in different ways in order to help with answering the question.

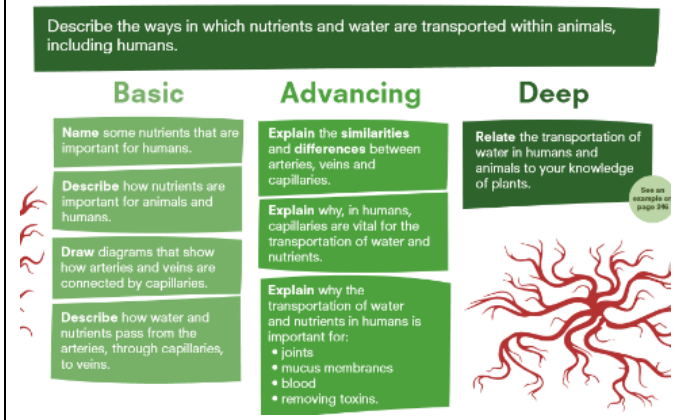
Children use the scientific knowledge gained from enquiry work to make predictions they can investigate using comparative and fair tests.

In their conclusions, children: identify causal relationships and patterns in the natural world from their evidence; identify results that do not fit the overall pattern; and explain their findings using their subject knowledge. They evaluate, for example, the choice of method used, the control of variables, the precision and accuracy of measurements and the credibility of secondary sources used. They identify any limitations that reduce the trust they have in their data. They communicate their findings to an audience using relevant scientific language and illustrations.

Proof of Progress (Working Towards, Age Related Expectation or Greater Depth)







End of Upper Key Stage 2 Age Related Expectations

Milestone indicator	Basic	Advancing	Deep
Describe the changes as humans develop to old age.	**Describe** the main changes in the human body from a child to an adult to old age. What are **(describe)** the physical signs of humans ageing?	**Compare** and **contrast** the physical appearance of children and adults. **Graph** changes in average heights of males and females at different ages. Summarise your findings.	**Interpret** data about normal blood pressure in children and adults and draw some conclusions. Make **generalisations** between the **relationship** between age and changes in humans. (emphasising continuous variables noted by the use of comparative degrees ending in **er** e.g. the young**er** the person the small**er** their size)
Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.	**Draw** and **label** diagrams of the human circulatory system. **Describe** the functions of the heart, blood vessels and blood.	**Contrast** the different roles of veins and arteries in the human circulatory system. **Explain** the different functions of the parts of the human heart.	**Discover** information about human blood pressure. **Relate** information about blood pressure to diet and lifestyle.
Recognise the importance of diet, exercise, drugs and lifestyle on the way the human body functions.	**Read** and **answer questions** about the importance of diet and exercise. **Observe** and **record** the effect of exercise on heartbeat. **Describe** a healthy, balanced diet. **Describe** some of the possible effects of poor exercise, drug misuse (including smoking) and poor diet on the way the human body functions.	**Graph** the effect of exercise on pulse rate. **Explain** your findings. **Explain** the possible effects of too much sugar in ones diet on how the human body functions.	**Discover** how coronary arteries may become blocked and cause heart attacks. **Argue** this statement: You are what you eat. **Do you agree:** diet is eighty per cent of your fitness regime and exercise twenty?
Describe the ways in which nutrients and water are transported within animals, including humans.	**Name** some nutrients that are important for humans. **Describe** how nutrients are important for animals and humans. **Draw** diagrams that show how arteries and veins are connected by capillaries. **Describe** how water and nutrients pass from the arteries, through capillaries, to veins.	**Explain** the **similarities** and **differences** between arteries, veins and capillaries. **Explain** why, in humans, capillaries are vital for the transportation of water and nutrients. **Explain** why the transportation of water and nutrients in humans is important for: • joints • mucus membranes • blood • removing toxins.	**Relate** the transportation of water in humans and animals to your knowledge of plants.