

Science – Animals including humans



Prior knowledge

Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. (Y1 - Animals, including humans)

Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (Y1 - Animals, including humans)

Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets). (Y1 - Animals, including humans)

Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). (Y2 - Animals, including humans)

Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (Y2 - Animals, including humans)

Year: 3

Term: Autumn

Key Knowledge

Carnivores and herbivores

Animals that eat only meat are called carnivores. Animals that eat only plants are called herbivores. Carnivores and herbivores have different types of teeth, to suit the type of food they eat. Herbivores have teeth which are shaped to squash and grind plants. Carnivores have teeth which are shaped to slice and rip the meat they eat.

The skeleton

Many animals have skeletons to support and protect their body and to help it move. The human skeleton is made of bones and grows as we grow. Our skull protects our brain and our ribs protect our heart and lungs. The skeleton bends at joints such as knees and ankles. Joints are where two or more bones join together

Muscles

Muscles are attached to bones by tendons and help them to move. When a muscle contracts (bunches up), it gets shorter and so pulls on the bone it is attached to. When a muscle relaxes, it goes back to its normal size. Muscles can only pull and cannot push. Therefore muscles have to work in pairs to move a joint. One muscle will contract and pull a joint one way and another muscle will contract and pull it the other.

Balanced diet

The human body needs the right types and amounts of nutrition (a balanced diet) to work properly. Good health involves drinking enough water and eating the right amount of foods from the different food groups:

Carbohydrates give us energy. They are found in foods such as bread, potatoes and pasta.

Proteins help our bodies to repair themselves. They are found in foods such as fish, meat, nuts, seeds, eggs and cheese.

Fats help store energy for our bodies. They are found in foods such as butter, cheese and fried foods.

Fibre is important for helping us digest our foods. It's found in fruit and vegetables.

Dairy is an importance source of calcium for strong bones.

Key skills
<ul style="list-style-type: none"> a. I use my results to draw a conclusion and make predictions for answering a different question. b. I can identify some simple differences or similarities when making comparisons. c. I support my answers by pointing out the scientific evidence. d. I can report my conclusion from the results of my experiment. e. I can gather the data I need to answer a scientific question and then present them in a table, grid or graph. f. I can record my findings in simple labelled diagrams, keys, bar charts or tables. g. I can set up a simple fair test experiment to answer a scientific question. h. I can make observations and record measurements (for example in mm or g). i. I can ask relevant scientific questions.
Future Learning
<p>Describe the simple functions of the basic parts of the digestive system in humans. (Y4 - Animals, including humans)</p> <p>Identify the different types of teeth in humans and their simple functions. (Y4 - Animals, including humans)</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey. (Y4 - Animals, including humans)</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. (Y6 - Animals, including humans)</p>

Key Vocabulary	
<p>Prior vocabulary – carnivore, herbivore, omnivore, invertebrate, vertebrate, amphibian, reptiles, mammals, fish, bird, insects, growth, offspring, skeleton, organ, offspring, growth, pupa, baby, toddler, child, teenager, adult, fluids, habitat, reproduction, nutrients, consumption, survival, temperature, hygiene, exercise</p> <p>Working scientifically key vocabulary – observe, test, magnifying glass, object, record, equipment, prediction, measurement, enquiry, dependent variable, independent variable, fair test, similar, theory, hypothesis</p>	
Nutrition - The process of providing or obtaining the food necessary for health and growth.	Group - a number of people or things that are located close together or are considered or classed together.
Skeleton - An internal or external framework of bone, cartilage, or other rigid material supporting or containing the body of an animal or plant.	Diet - the kinds of food that a person, animal, or community habitually eats.
Muscles - A band or bundle of fibrous tissue in a human or animal body that has the ability to contract, producing movement in or maintaining the position of parts of the body.	Healthy - in good condition. The state of being free from illness or injury.
Support - Bear all or part of the weight of; hold up.	Contract/ relax - Muscles are attached to the bone by tendons and work in pairs to allow for smooth movement. To move a joint, one muscle contracts while the other muscle relaxes and becomes longer.
Protection - Keep safe from harm or injury.	Ribcage – the structure of ribs forming a cage around the internal organs of the chest
Movement - Go in a specified direction or manner; change position.	Skull – the bones that protect the brain
Balanced - arranged in good proportions.	
Additional vocabulary to discuss across the unit – identify, energy, vitamin, cartilage, loosen, carbohydrates, proteins, fats, fibre, dairy	

Deepening and broadening the knowledge and understanding for GDS learners:

- names the food groups and knows the benefits to the human body of the different food groups, e.g. *proteins, carbohydrates*
- explains the effect on the human body that eating too much of a particular food/drink can have, e.g. *sugar, fat, salt, alcohol*
- knows what role a dietician plays in ensuring certain humans have the correct nutrition
- knows that calorific food values are measured
- knows how many calories humans should consume in a day
- describes or researches how poor nutrition can affect our health, e.g. *rickets, type II diabetes, heart disease, scurvy*
- describes the possible effects on the human body that a deficiency in certain vitamins may have, e.g. *Vitamin C*
- constructs a model of a human skeleton (or draws one) with an increasing level of accuracy

- knows that the adult human skeleton has 206 bones
- knows that the skeleton of a human baby has more bones than an adult
- knows the correct names of many bones in the human skeleton, e.g. *patella, clavicle, femur, spine, pelvis*
- compares a human skeleton with that of another animal
- names an animal that does not have a skeleton, e.g. *worm, starfish, jellyfish*
- uses the terms vertebrate and invertebrate correctly to describe animals with/without a backbone
- knows that muscles are attached to bones by tendons
- describes how muscles work in pairs

Key Outcomes

1. What is my skeleton like?

Children will investigate the names of some of the main bones that make up their skeleton, labelling them and giving examples of how they support, help move and protect the body.

2: What types of skeleton are there and which animals have them?

Children will investigate the purpose of skeletons and the different types (endo-, exo-, hudro-) and record their research with diagrams, including the human skeleton. Children to explore scientific research and answer the question What would happen if humans did not have skeletons?

3: What do muscles do?

Children will investigate the function of muscles and explore their movements, presenting findings in a model. Children will research how muscles are used for support, movement and protection for humans and some animals.

4. Why is a balanced diet so important?

Children will identify the food groups and elements of a balanced diet and how they keep us healthy. Children will plan a daily diet to contain a good balance of nutrients based on the information that they have found.

5: How much nutrition is in our food?

Children will 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? They will record their findings in bar graphs

6: How do the diets of animals including humans differ?

Children will compare and contrast the diets of different animals, including pets, and decide ways of grouping them according to what they eat. Children to design their own criteria to group, sort and classify in the most appropriate way.