

LKS2 Science Knowledge Organiser

Topic: Animals including Humans

Key questions:

- Can animals make their own food from sunlight?
- How do animals get the energy they need to live?
- How does food turn into poo?
- What is a food chain?
- How do animals move?

Key Information

Animals (including humans), unlike plants which can make their own food, need to eat to get the nutrients they need.

Food contains a range of different nutrients – carbohydrates (including sugars), protein, vitamins, minerals, fats, sugars, water – and fibre that are needed by the body to stay healthy. These different nutrients are important for repair, growth, energy and other specific jobs in the body. A piece of food will often provide a range of nutrients.

Food enters the body through the mouth. Digestion starts when the teeth start to break the food down. Saliva is added, and the tongue rolls the food into a ball. The food is swallowed and passes down the oesophagus to the stomach. Here the food is broken down further (churning and stomach acid). The food then passes into the small intestine. Here, nutrients are removed from the food and are used elsewhere in the body. The rest then passes into the large intestine. Here, the water is removed and what is left is then stored in the rectum until it leaves the body through the anus as faeces (poo).

Humans have four types of teeth: incisors for cutting; canines for tearing; and molars and premolars for grinding (chewing). The teeth in carnivores (dog), herbivores (cow) and omnivores look different due to their different roles.

When teeth aren't being looked after, either through eating and drinking too much of the wrong things, or not cleaning teeth properly, tooth decay will occur.

Living things can be classified as producers, predators and prey according to their place in the food chain. Energy originates from the sun and can be traced through a food chain, represented by the arrows.

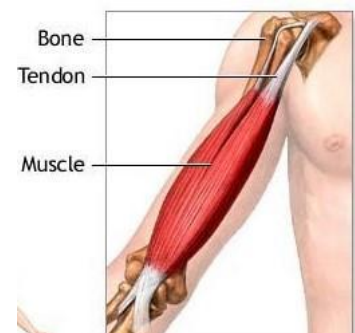
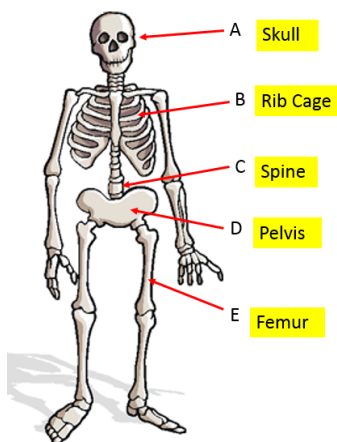
Vertebrate

Vertebrates are animals that have a backbone inside their body. The major groups include fish, amphibians, reptiles, birds and mammals.

Invertebrate

Invertebrates are animals that don't have a backbone. Some have soft bodies, like worms, slugs and jellyfish. **Other invertebrates**, like insects, spiders and crustaceans, have a hard outer casing called an exoskeleton. This protects their body a bit like a suit of armour.

Humans and some other animals have **skeletons** and **muscles** for support, protection and movement.



Did you know...?

At birth the human skeleton is made up of around 300 bones. By adulthood, some bones have fused together to end up with 206 bones.

The longest bone in the human body is the thigh bone called the femur.

There are around 650 skeletal muscles in the human body.

There are three types of muscle: skeletal, cardiac, and smooth.



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When resting, the average adult breathes around 12 to 20 times a minute.

An average person breathes in around 11,000 litres of air every day.

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| • vertebrate | • muscles | • diaphragm | • minerals |
| • invertebrate | • joints | • nutrition | • fibre |
| • bone | • tendons | • carbohydrates | • growth |
| • skeleton | • contract | • proteins | • repair |
| • skull | • relax | • dairy | • herbivore |
| • ribcage | • biceps | • fats | • carnivore |
| • pelvis | • triceps | • sugars | • omnivore |
| • femur | • lungs | • vitamins | |