



Living Things







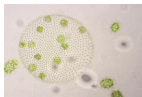
We share our planet with about 2 million species of living things and these are just the ones we know and have given names to (it has been estimated that there are actually over 7 million animal species in total). The diversity of life is called biodiversity. Humankind - like a butterfly, elephant or crocodile - are another species of animal; the biological kingdom Animalia includes humans. We are part of biodiversity and share our planet with an amazing variety of animals. The diversity of life on Earth is what sustains us: without it, there would be none of the food we eat, nor the air we breathe.

Animals are multicellular organisms. With few exceptions, animals consume organic material, breathe oxygen, are able to move, can reproduce sexually, react to their environment, excrete waste and grow from a hollow sphere of cells, the blastula, during embryonic development. They have complex interactions with each other and their environments, forming intricate food webs.

Classification is the process by which we put organise living things into groups according to their features. In the past, this was mostly based on anatomy (what a species looks like). Now we can classify species based on a number of features, most importantly a species' genetics and how closely related species are genetically. For example, the horseshoe crab looks like a crab. However, genetically it is related to arachnids – spiders, scorpions, ticks and mites. Genetics can reveal more than anatomy about how we should classify species.

Vertebrates and invertebrates

Animals are divided into two main groups. Animals that have a backbone are called vertebrates. Animals that don't have a backbone are called invertebrates. Vertebrates are divided into fish, amphibians, reptiles, birds and mammals. Invertebrates are divided into seven groups:

<p>Insects</p> 	<p>Insects have a hard-outer casing which protects the soft body inside. The body of an insect is split into three sections: head, thorax and abdomen. Insects have antennae and usually have three pairs of legs. They also sometimes have wings. Examples include beetles and ants.</p>
<p>Crustaceans</p> 	<p>Crustaceans have a hard-outer shell which protects the soft inner body. Their body is made up of two parts which sometimes look like they are fused together. Crustaceans have more than three pairs of legs and many will have claws at the end of the first set of legs. Examples include crabs and woodlice.</p>
<p>Echinoderm</p> 	<p>Echinoderm only live in water and have a hard-spiny covering or skin. Their bodies also have radial symmetry (where each side is balanced or symmetrical) with five or more arms or legs. An echinoderm can grow back part of its body if it becomes damaged. Examples include starfish and sea lily.</p>
<p>Annelids</p> 	<p>Annelids have no legs and no hard-outer skeleton. The body of an annelid is divided into many little segments, like rings joined together. Annelids can have bristles on their bodies. Examples include earthworms and leeches.</p>
<p>Arachnids</p> 	<p>Arachnids have eight legs and they do not have antennae. Their bodies are made up of two parts: the cephalothorax (where the head is) and the abdomen. They also have a tough exoskeleton. Examples include spiders and mites.</p>
<p>Molluscs</p> 	<p>Molluscs have soft bodies which are not segmented. Most molluscs live on water but some live on land. Some molluscs have their own shell which they can use for protection. Examples include clams and scallops.</p>
<p>Protozoans</p> 	<p>Protozoans are tiny animals that we cannot see without the help of a microscope. They live everywhere: on land, in water and on other animals and plants.</p>



The Human Body

The human skeleton is a framework or structure of bones that supports the human body. When a baby is born, there are over 300 different parts in the skeleton. Some are bones and some are a more flexible material called cartilage. However over time, most of these areas of cartilage slowly turn to bone and some join together to make bigger bones. Your ears are made of cartilage and they are an example of a part of the body which does not become bone as you get older.

Adults have a skeleton made up from 206 separate bones.

Some of the bones in your body are: a skull, a jawbone, collarbones, a breastbone, a backbone, shoulder blades, arms bones, wrist bones, hand bones, finger bones, hip bones, thighbones, kneecaps, leg bones, ankle bones, foot bones and toe bones!

There are scientific names for all of the bones in your body:



Why do we need a skeleton?

We have a skeleton for a number of different reasons but each reason is very important. Firstly, our skeleton provides **support** to the rest of our body. It is the structure that helps us to stand up straight and it maintains the shape of our body.

We also have a skeleton because it **protects** our organs. Our organs perform lots of important tasks. For example: our heart pumps blood around our body; our lungs help us to breathe; our stomach helps us to digest food; our brain helps us to think. It is therefore very important that these organs are not damaged in any way and our skeleton is there to stop this from happening. Your cranium protects your brain and your ribcage protects your heart, lungs and other organs.

Movement is the third function of the skeleton. The bones in your skeleton work with your muscles and this is how you are able to move. Bones allow us to move due to the way they connect at joints. A joint is the point at which two bones meet.

Skull	Cranium	Wrist Bones	Carpals
Jawbone	Mandible	Hand Bones	Metacarpals
Collarbone	Clavicle	Finger Bones	Phalanges
Shoulder Blade	Scapula	Thighbone	Femur
Breastbone	Sternum	Kneecap	Patella
Ribs	Ribs	Leg Bones	Tibia, Fibula
Hip Bones	Pelvis	Foot Bones	Metatarsals
Arm Bones	Humerus, Radius, Ulna	Ankle Bone	Tarsal
Backbone	Vertebral Column	Toe Bones	Phalanges

