

Science Knowledge Organiser

Topic: Animals including Humans

Year: 3

Strand: Biology

Southwold Primary School



What should I already know?

- Animals have offspring that grow into adults who have babies themselves, this is called a lifecycle.
- A healthy lifestyle involves hygiene, exercise and a healthy diet.
- Animals need food, air, water and shelter.
- Animals can be grouped (reptiles, amphibians, fish, birds and mammals).

What will I know by the end of this unit?

- Understand that animals can not make their own food. They get the nutrition out the food they eat.
- Humans have a skeleton and muscles to give support, make movement possible, and to give protection.
- Animals with a backbone are grouped as **vertebrates**.
- Animals who do not have a backbone are grouped as **invertebrates**. Some have a hard cover on the outside. This is called an **exoskeleton**.

Healthy lifestyle

Plants use the energy of the sun to grow through photosynthesis. Animals (incl. humans) can't do this. They need to eat to get the nutrients they need to grow. A healthy lifestyle reduces the risk of getting ill.

This means:

- Animals eat the right amount and variety of nutrients by eating a variety of foods.
- Animals do the right amount of exercise. This makes our muscles and bones stronger and helps prevent gaining weight.
- Animals need to wash themselves and keep their teeth clean.

⇒ Some humans overeat sugary foods or food that is too high on fat. They can also be inactive which can result in gaining too much weight (**obesity**) or developing **diabetes**.

Vocabulary

exercise	Moving and being active to get stronger and fitter. Muscles and bones work together to make movement possible.
exoskeleton	Invertebrates with a skeleton on the outside.
diabetes	A medical condition where the body struggles to regulate the amount of sugar that is in the blood stream. Sugar harms blood vessels.
food groups	Different types of food. Humans need to eat from a range of food groups so they get all the nutrients they need to stay healthy.
healthy diet	Eating the right amount of food but also the right types of food. A healthy diet is an important part of staying healthy.
invertebrates	Animals with an internal backbone (on the outside of their body).
joints	The connection between two or more bones.
muscles	Muscles are made of muscle fibres that can get shorter. They are connected with tendons to bones.
obesity	A medical condition in which so much body fat is stored that it has negative impacts health.
organs	The soft parts inside an animal with a certain function. Some are protected by the skeleton
vertebrate	Animals with a internal backbone.
skeleton	All the bones in an animal (including humans). Bones have names to identify them. Bones help us to stand up, move and protect organs.

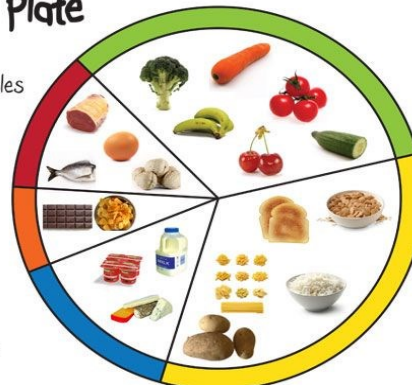
Working Scientifically

- Asking relevant questions and using different enquiry methods to find answers.
- Doing careful observations and drawing conclusions based on this.
- Reporting findings using simple scientific language (spoken and/or written).
- Identifying differences, similarities or changes in relation to simple science ideas.
- Recording findings using simple scientific language, drawings and using relevant labels.

Different food groups

A Balanced Plate

- Fruit and vegetables
- Grains, cereals and potatoes
- Dairy products
- Meat, fish, nuts and eggs
- Fats and sugars



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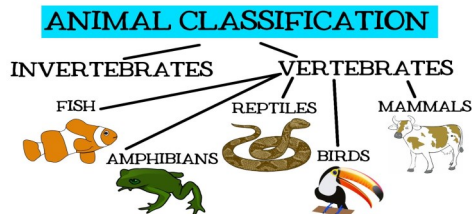
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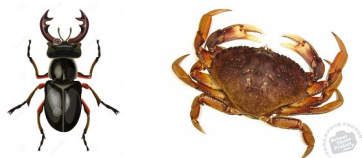


Vertebrates and Invertebrates

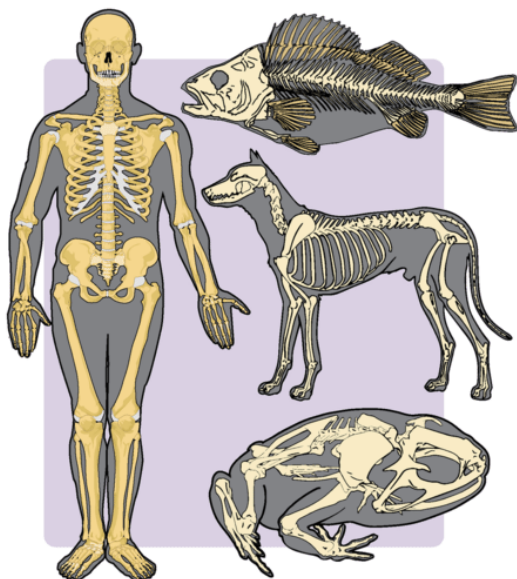
Animals can be grouped into **vertebrates** and **invertebrates**.



Vertebrates have a backbone inside their body. **Invertebrates** do not have this and some have a different way of strengthening their body so movement is possible. They have hard parts on their outside, an **exoskeleton**.

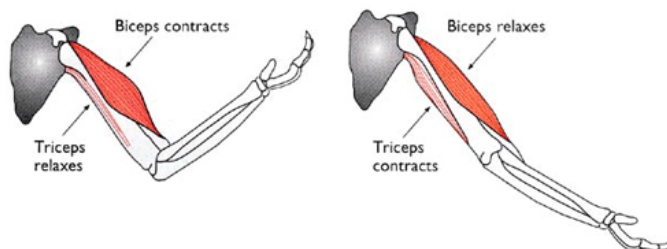


If you compare skeleton of different vertebrates you will notice differences and similarities

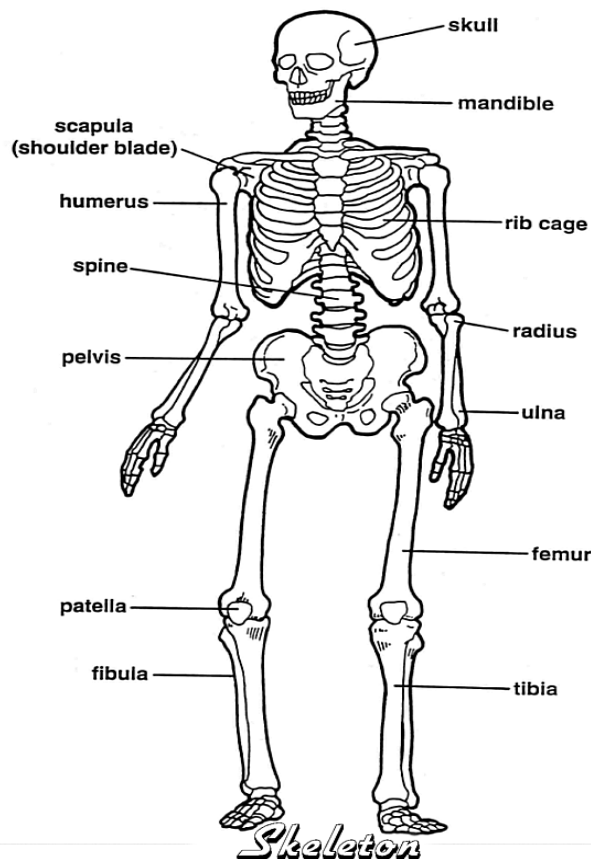


Muscles

Muscles can only pull and often work in pairs to make a bone move:



Skeleton



Function of a skeleton

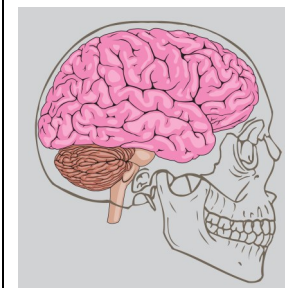
A skeleton is made up out of hard parts, in vertebrates these parts are called bones. Bones grow when the animal grows.

Some invertebrates have hard parts that don't grow with their body so they have to replace them from time to time.

These hard parts make it possible to stand up and because muscles are connected to the hard parts, movement is possible.



The hard parts also protect organs that are very important like the rib cage protects the heart and the skull the brain.



Human babies are born with around 270 different bones in their body. Grown-ups have 206 bones. Some of the bones grow together.

Bones are a bit hollow (like straws) filled with soft tissue. If this was not the case our bones would be too heavy to carry round.