

Previous Knowledge

The parts of the human body and what they do. There are five types of vertebrates. All animals need water, air and food to survive. The different ways in which humans can be healthy. Examples of healthy and unhealthy foods.

Project Hook or 'Wow' memory

Making picture of the human skeleton by arranging the bones.

Learning Steps

Key Knowledge (answers)

What different types of foods should we be eating for a healthy diet? Identifying and classifying.

Different foods provide different nutrients. These are needed in differing amounts so that living things can grow, be strong and healthy. Carbohydrates—energy, protein—helps growth and repair, fibre—helps you to digest the food you've eaten, fats—provide energy, vitamins—keep you healthy, minerals—keep you healthy and water—moves the nutrients around the body and get rid of waste.

Who was James Lind? Research and Ideas over time.

James Lind was a surgeon on board HMS Salisbury in 1747. He investigated what caused scurvy by carrying out fair tests on sailors. He discovered that oranges and lemons (vitamin C) improved the sailors recovery and 40 years later all ships have to have a supply of lemon juice for all sailors.

What skeletons do humans and animals have? Identifying and classifying.

Vertebrates— animals with a backbone and invertebrates animals without a backbone. All vertebrates have an endoskeleton, but invertebrates have either an exoskeleton or a hydrostatic skeleton.

What are the bones that make up the skeleton? Are animal skeletons similar? Identifying and classifying. Who was Marie Curie? Research and Ideas over time.

Skull, jaw, collar bone, breast, rib cage, upper+lower arm bones, hand bones, backbone, hips, wrist bones, upper+lower leg bones, knee cap, ankle bones and foot bones. Some will use the scientific names as well. They will be able to apply this to identify, label and draw the bones in another animal. Marie Curie was born in 1867 in Poland. Later she moved to France and married Pierre. She discovered radioactivity and that radium could be used to treat very unwell patients. During WW1 she created x-ray trucks that helped wounded soldiers and saved many lives. X-rays show the bones inside bodies.

How does the skull circumference of a girl compare with that of a boy? Comparative testing and pattern seeking.

Boys tend to have larger heads than girls. The brain volume of a boy is larger than that of a girl. Boys also tend to have longer arms and legs. The size of the skull is in relation to the overall size of the person.

What is the function of a skeleton? Identifying and classifying

All skeletons protect the organs inside the body, allow movement, support the body and stop it falling to the floor.

How do muscles and joints work? Identifying and classifying. How does the angle that your elbow is bent affect the circumference of your upper arm? Fair testing.

Muscles work in pairs to move the bones they are attached to by taking turns to contract (get shorter) and relax (get longer). Muscles are connected to the bones by tendons. The different types of joints are: ball and socket joint, hinge joint and fixed joint. When the arm is straight the circumference of the upper arm is narrower due to the biceps relaxing and the triceps contracting. When the arm is bent the biceps contracts and the triceps relaxes. The biceps is generally larger than the triceps.

The key skills we want pupils to use during this topic:

Can ask relevant questions and use different types of scientific enquiry to answer them; can set up simple practical investigations, compare things and make fair tests.

Can make organised and careful observations; take accurate measurements using the right units of equipment; can gather, record, sort and present data in a variety of ways to help in answering questions.; plus can record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.

Can report findings from investigations, by displaying or presenting results and conclusions; can use results to draw simple conclusions, make predictions, suggest improvements and ask more questions; can identify differences, similarities; plus can use clear scientific evidence to answer questions or to support findings.

Key vocabulary

Endoskeleton	A skeleton that is inside a body. The skeleton is light and grows with the animal.
Exoskeleton	A skeleton on the outside of the body. It does not grow so the animals sheds it and produces a new one.
Hydrostatic skeleton	These animals don't have any bones! They have a fluid filled compartment called a coelom.
Muscles	Soft tissues in the body that contract and relax to cause movement.
Joints	Where two or more bones are fitted together.
Tendons	Cords that join muscles to bones.
Nutrients	Substances that living things need to stay alive and healthy
Energy	Strength to be able to move and grow.
Balanced diet	Wide variety of food and providing adequate amounts of the nutrients necessary for good health.

Statutory Requirements

I can identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.

I can identify that humans and some other animals have skeletons and muscles for support, protection and movement.

