Science Knowledge Organiser

Animals including humans (muscles and skeletons)	Yr 3	Main Foci: Biology

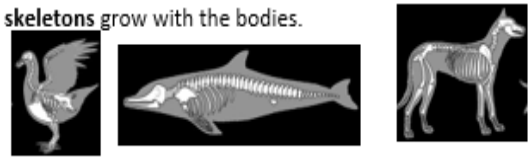
What should I already know?

- The parts of the human body and what they do.
- There are five types of **vertebrates** (mammals, fish, reptiles, amphibians, birds).
- **Vertebrates** are animals that have a **backbone**.
- Invertebrates are animals that do not have a backbone.
- All animals need water, air and food to survive.
- The different ways in which humans can be healthy.

What will I know by the end of the unit?

What are the different types of skeletons?

- **Vertebrates** are animals that have a **backbone**. These **skeletons** are called **endoskeletons** - this means that the **skeletons** are on the inside of the bodies. These **skeletons** grow with the bodies.



- When the **skeleton** exists outside the body, it is called an **exoskeleton.** An **exoskeleton** is a covering that supports and protects animals. These have to be shed and a new **skeleton** is grown.

What does an endoskeleton do?

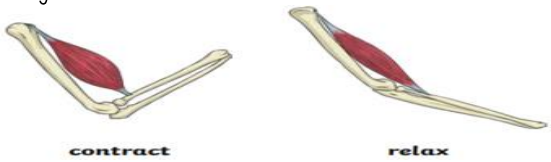
- The three most important things a **skeleton** does are:
  - provide **support** and shape to an animal's body
  - allow movement through the **joints**
  - **protect organs** (e.g. the skull protects the brain)

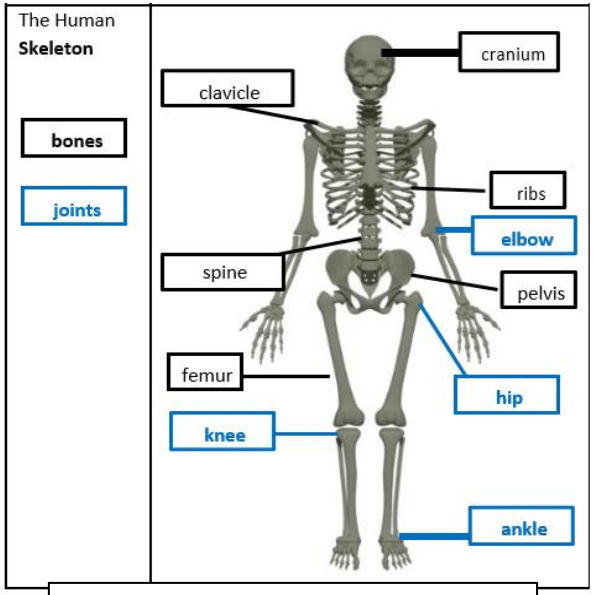
How do we move?

- **Joints** are where **bones** meet - they allow our bodies to move.
- **Muscles contract** and **relax**.
- If you place an **elbow** on a desk and lift your arm up, **muscles** in your upper arm (biceps) **contract** while **muscles** behind the upper arm (triceps) **relax**. The **muscles** work together and in opposition to allow your arm to move.
- **Muscles** are connected to **bones** by **tendons.**

Muscles

Skeletal muscles work in pairs to move the bones they are attached to by taking turns to contract.





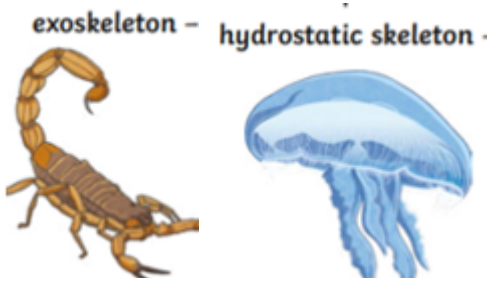
Skeletons - Vertebrate

Endoskeleton- a skeleton on the inside of the body

Skeletons - Invertebrates

Exoskeleton – a skeleton on the outside of the body.

Hydrostatic skeleton – a skeleton made up of a fluid filled compartment in the body.



Vocabulary

backbone	the column of small linked **bones** down the middle of your back . Also known as a spine.
bones	the hard parts inside your body which form your **skeleton**
contract	to make smaller by drawing together; shrink or make tighter.
elbow	the bend or joint between the upper arm and the lower arm
endoskeleton	the internal **skeleton** of an animal, especially the bony **skeleton** of **vertebrates**
exoskeleton	the **protective** or **supporting** structure covering the outside of the body of many animals
joints	the junction between two or more **bones**
muscles	something inside your body which connects two **bones** and which you use when you make a movement
organs	a part of your body that has a particular purpose
protect	**protecting** someone or something means to prevent them from being harmed or damaged
relax	When a part of your body **relaxes**, or when you relax it, it becomes less stiff or firm
skeleton	the framework of **bones** in your body
support	to hold something up
tendons	a strong cord in a person's or animal's body which joins a **muscle** to a **bone**
vertebrate	a creature which has a spine