

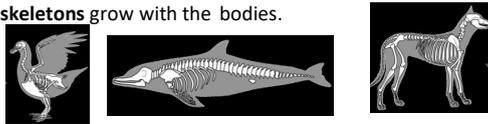
**What should I already know?**

- 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?

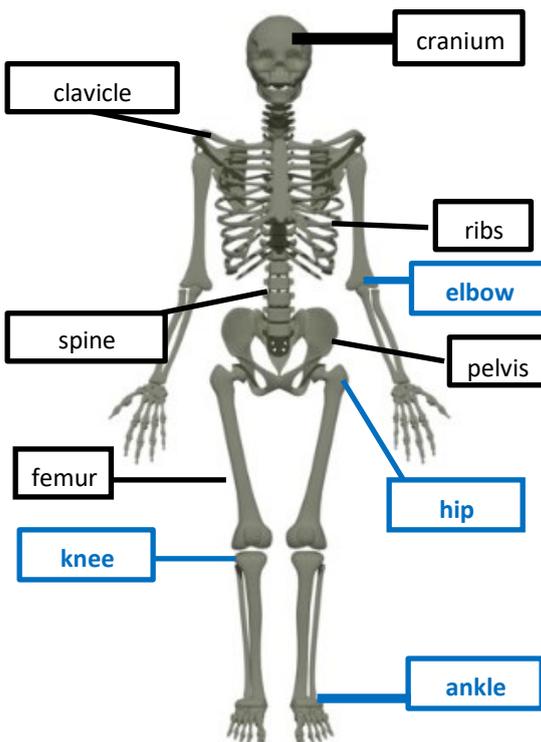
- The three most important things a **skeleton** does are:
  - provide **support** and shape to an animal's body
  - allow movement through the **joints**
  - **protect organs** (e.g. the skull protects the brain)

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**.

The Human Skeleton

bones  
joints



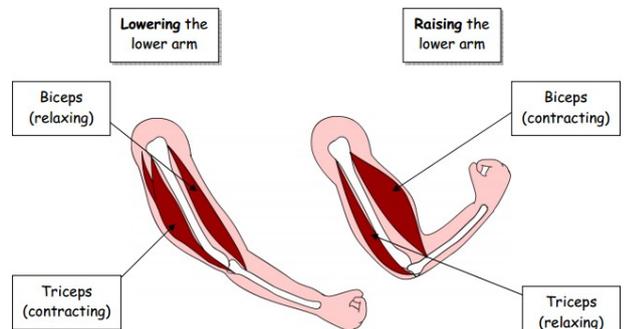
**Investigate!**

- Identify and group animals with and without **skeletons** and compare the ways in which they move.
- Match animals to their **skeletons** and explain your reasons for this.
- Explore ideas about what would happen if humans did not have **skeletons**.
- Identify which **bones** are used for **support** (e.g. **backbone**), which are used for **protection** (e.g. cranium) and which are used for movement (e.g. joints)
- Create a presentation to show how **muscles contract** and **relax**.
- Compare the size of straight arms and bent arms. Measure around the top of an arm when it is straight and when it is bent . What do you notice?

**Vocabulary**

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

**Muscles**



**Chulmleigh Academy Trust – Science**

**Topic: Animals including humans (muscles and skeletons)**

**Year: 3**

**Strand: Biology**