

# Oughterside Foundation School - Science

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

**Year: 3**

**Strand: 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)

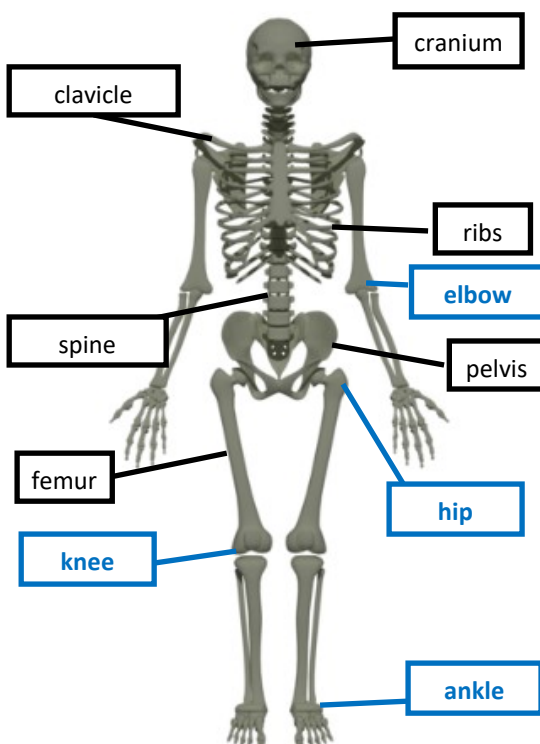
How do we move?

- **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**.

The Human Skeleton

**bones**

**joints**



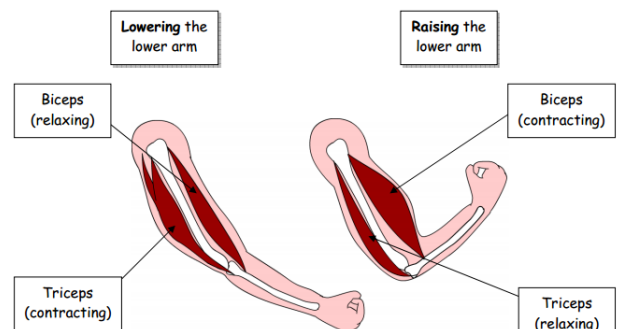
## Investigate!

- 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



Question 1: Match the words to their meanings.		Start of unit:	End of unit:
skeleton	the hard parts inside your body which form your skeleton		
joint	something inside your body which connects two bones and which you use when you make a movement		
muscle	the framework of bones in your body		
bone	the junction between two or more bones		

Question 2: Which part of the skeleton protects the brain?	Start of unit:	End of unit:
skeleton		
head		
cranium		
ribs		

Question 3: Which part of the skeleton protects the heart and lungs?	Start of unit:	End of unit:
chest		
ribs		
cranium		
spine		

Question 4: What does the prefix <b>exo-</b> tell us about exoskeletons?	Start of unit:	End of unit:

Question 5: What connects a muscle to a bone?	Start of unit:	End of unit:
skeleton		
tendon		
joint		
blood		

Question 6: What is the purpose of a skeleton?	Start of unit:	End of unit:
protect our organs		
scare us		
keep us upright		
allows us to move		

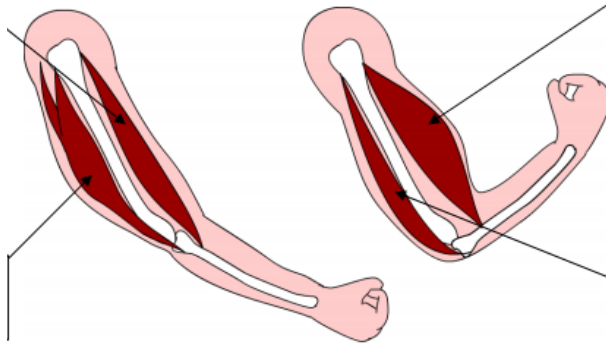
Question 7: All animals that have a backbone are called...	Start of unit:	End of unit:
vertebrates		
invertebrates		

Question 8: Describe something that might happen if we did not have a skeleton.	Start of unit:	End of unit:

Question 9: Complete the labels on muscles to show if they are contracting or relaxing. Write a sentence underneath the diagram to explain how our muscles help us move.

Start of unit:

End of unit:



Question 10: Complete the labels on the skeleton so that they have been named correctly

Start of unit:

End of unit:

