

Knowledge Organiser

Topic: Animals inc. Humans

Year 3

Strand: Biology

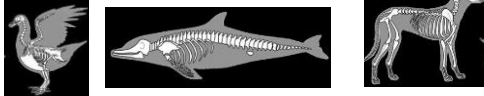
What should I already know?

- 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)

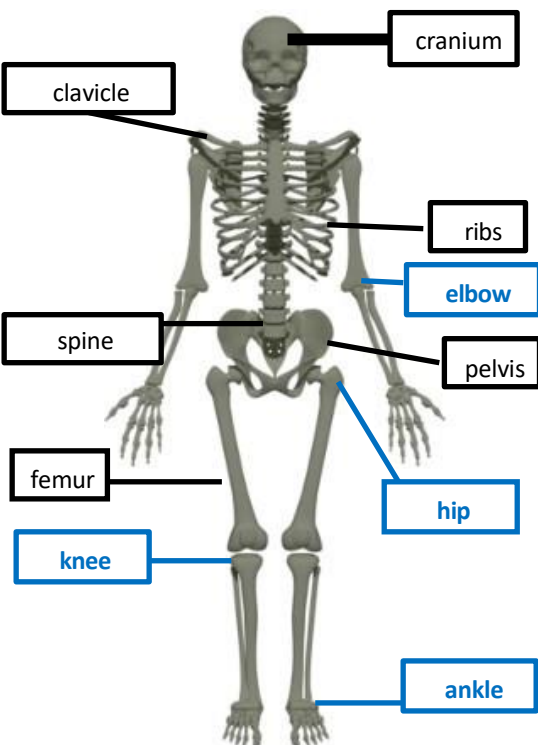
How do we move?

- **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



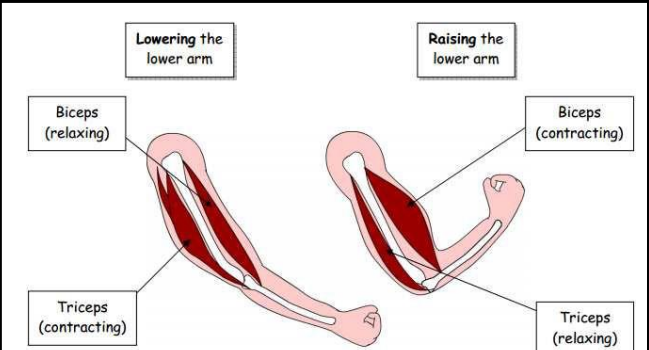
Investigate!

- 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 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

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		

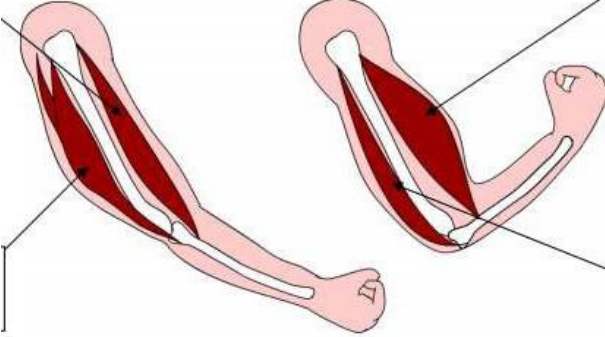
Question 4: What does the prefix exo- tell us about exoskeletons?	Start of unit:	End of unit:

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:

<p>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.</p>	<p>Start of unit:</p>	<p>End of unit:</p>
		

<p>Question 10: Complete the labels on the skeleton so that they have been named correctly</p>	<p>Start of unit:</p>	<p>End of unit:</p>
