

Green Lane Primary - Science

Topic: Animals including humans

Year: 3 and 4

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.

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

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?

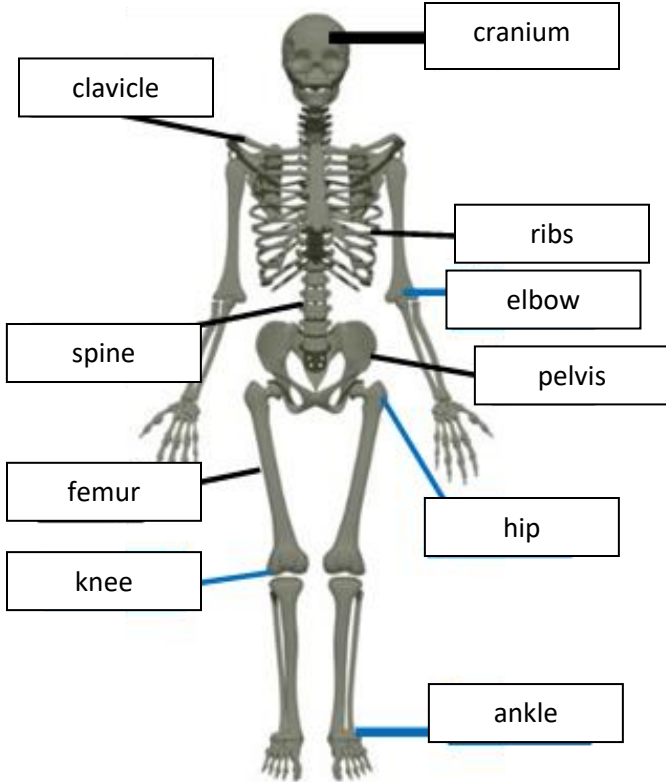
- **Joints** are where **bones** meet - they allow our bodies to move.
- **Muscles contract** and **relax**.
- If you place an **elbow** on a desk and lift your arm up, **muscles** in your upper arm (biceps) **contract** while **muscles** behind the upper arm (triceps) **relax**. The **muscles** work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

Investigate!

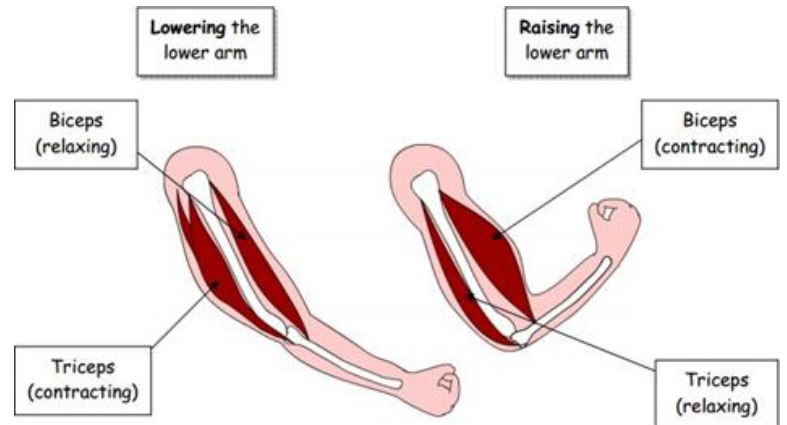
- Identify and group animals with and without skeletons and compare the ways in which they move.
- Match animals to their skeletons and explain your reasons for this.
- Explore ideas about what would happen if humans did not have skeletons.
- Identify which bones are used for support (e.g. backbone), which are used for protection (e.g. cranium) and which are used for movement (e.g. joints)

Diagram

The Human Skeleton



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 connects a muscle to a bone?

	Start of unit	End of unit
skeleton		
tendon		
joint		
Blood		

Question 5 – What does the prefix exo- tell us about skeletons?

Start of unit	End of unit

Question 6 – What is the purpose of a skeleton? (Tick all that apply)

	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....

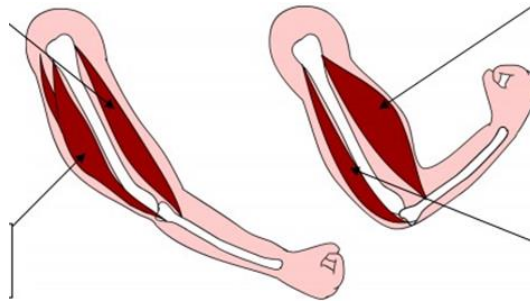
	Start of unit	End of unit
vertebrates		
invertebrates		

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

Question 9 – Complete the labels on muscles to show if they are contracting or relaxing.

Start of unit End of unit



Question 10 – Complete the labels on the skeleton so they have been named correctly.

Start of unit End of unit

