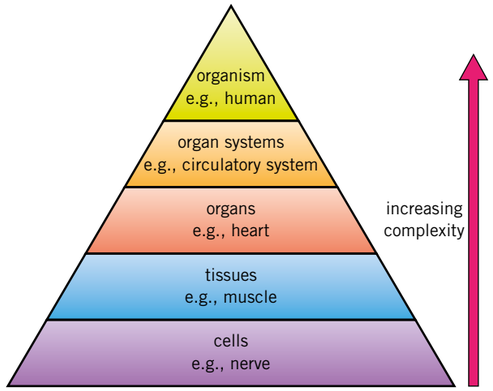
B1 Chapter 8: Organisms
Knowledge organiser

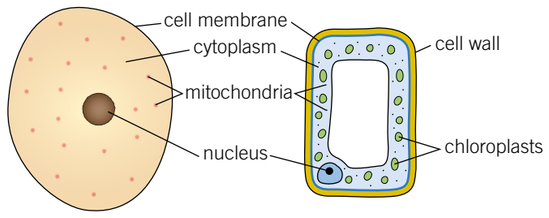
Activate
Question • Progress • Succeed

Levels of organisation



Plant and animal cells

- To be able to **observe** a **cell** we need to use a **microscope**, this magnifies the cell to a point to which we can see it
- Plant and animal cells have small structures inside known as **organelles**, each of these performs a certain role which allows the cell to survive

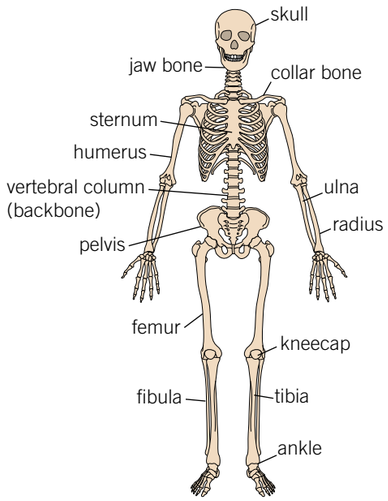


Specialised cells

- **Specialised cells** are designed to carry out a particular function, because of this they have specific features and adaptations to allow them to carry this out
- Both plant and animal cells can be specialised, with these specialised cells working together to help the organism to survive

The skeleton

- The **skeleton** is made up of 206 **bones** which are a type of **tissue**
- Bones have a blood supply and are a living tissue
- The skeleton is part of the **muscular-skeletal system**
- The four main functions of the skeleton are:
  - To support the body – to keep you upright and hold **organs** in place
  - Protect organs – such as the skull protecting the brain
  - Movement – by working with muscles to allow you to move
  - Making blood cells – the **bone marrow** produces red and white blood cells



Muscles

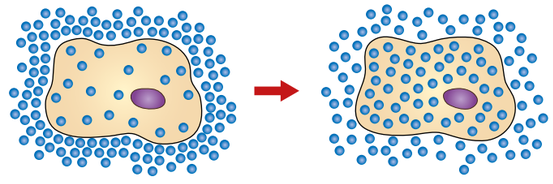
- **Muscles** are a type of tissue which allows movement
- They pull on tendons which in turn pull on bones to allow movement
- Muscles like the triceps and biceps are known as **antagonistic muscle pairs**, they work together –as one contracts, the other will relax

Organs

- An organ is a group of tissues that have the same function
- They can work with other organs in an **organ system**, such as the respiratory system which uses organs like the heart and lungs to transfer oxygen around the body
- Vital organs are the organs that need to keep functioning for an **organism** to stay alive, e.g. the heart

Movement into and out of cells

- The process in which substances move into and out of cells is known as **diffusion**
- This occurs across the **cell membrane**
- During diffusion particles move from an area of high **concentration**, to an area of low concentration



- Oxygen and nutrients enter the cell by diffusion, carbon dioxide and waste products leave

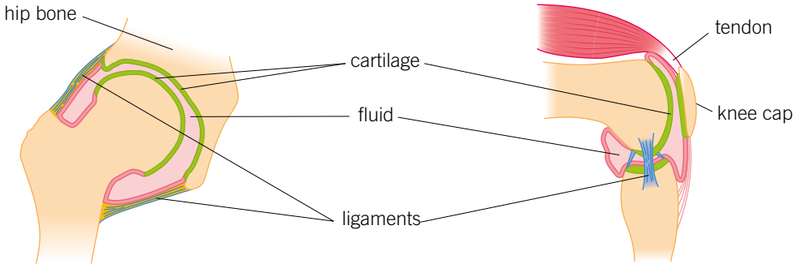
Movement

Joints occur between bones and allow movement, there are three main types of joints

Hinge	Ball and socket	Fixed
For back and forward movement, e.g. knees	*For movement in all directionse.g. hips*	*Do not allow movement, e.g. skull*

Joints have three main types of tissue:

Ligaments	**Cartilage**	**Tendons**
Connect bone to bone	*Coats the end of bones as a protection*	*Connects bone to muscle*



Key terms Make sure you can write definitions for these key terms.

antagonistic muscle pair *bone* *bone marrow* *cartilage* *cell* *concentration* *diffusion* *joints* *ligaments* *microscope* *muscular skeletal system* *nucleus* *organ* *organism* *organ system* *skeleton* *specialised cells* *tendons* *tissue*