Organisms

2. Cells

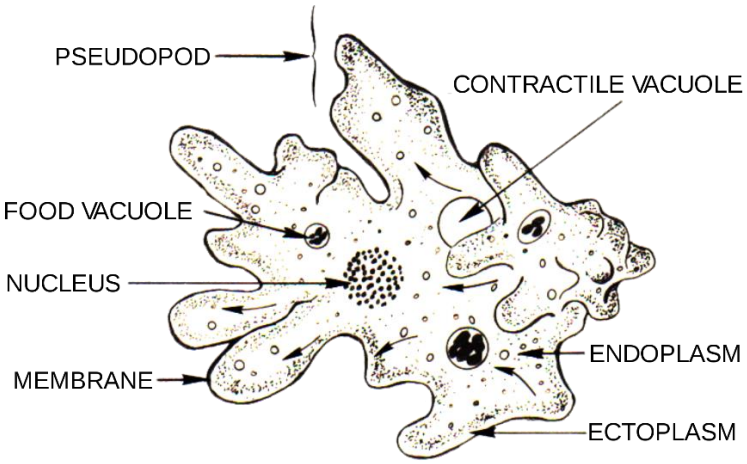
CONCEPT 4

UNICELLULAR ORGANISMS

NOTES

Unicellular organisms are living things that are made of just one cell. Although these organisms may seem simple, they can in fact be very complex. Adaptations in their structure, as well as how they feed and how they move, make them well suited for life in their environment.

A type of animal-like unicellular organism is the **amoeba.** The amoeba is a protozoa, a type of unicellular organism that live in water or damp places. It has adaptations that makes it behave like an animal. It produces pseudopodia (false feet) which helps it to move in order to find food or escape from predators. Food is surrounded and taken through the cell membrane. Some amoeba act as predators themselves to engulf other unicellular organisms.



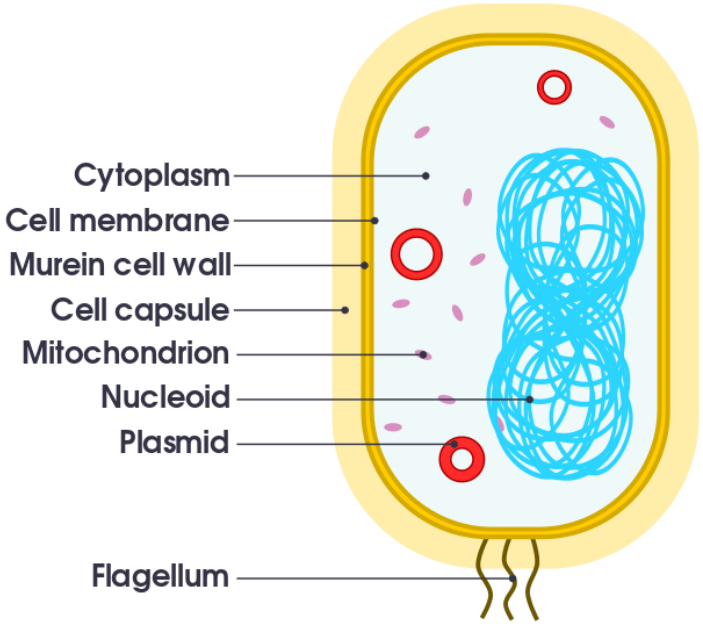
A type of plant-like unicellular organism are **algae,** which make their own food due to containing chloroplasts.

A type of fungus-like unicellular organism is **yeast.** Yeast have a cell wall, like plant cells, but no chloroplasts. This means sugar must be absorbed for nutrition, rather than making food by photosynthesis. Yeast can reproduce by producing a bud, which grows until it is large enough to split from the parent cell.

Prokaryotes and eukaryotes

Unicellular organisms can be classified into two main groups: **prokaryotes** and **eukaryotes.**

Bacteria are examples of prokaryotes. Their cell structure are simpler and smaller than those of eukaryotes, which can be up to 200 times bigger. These cells do not contain membrane bound organelles such as the nucleus or mitochondria. Instead, a single loop of DNA is free in the cytoplasm. Although simple, these bacteria come in various shapes and sizes. They are adapted to different environments, ranging from temperatures below freezing to under-sea volcano vents.



A eukaryotic cell is a cell that has a membrane-bound nucleus and other membrane-bound specialised organelles including mitochondria, vacuoles and chloroplasts. The word eukaryotic means “true nucleus,” alluding to the presence of the membrane-bound nucleus in these cells. The word “organelle” means “little organ,” and, as already mentioned, organelles have specialised cellular functions, just like the organs of your body.

Examples of eukaryotes are amoeba, euglena, fungi (such as yeast) and paramecium. These have external features that enable them to survive. For example, euglena have a flagellum as a propeller to move around. They also have an eyespot which is used to ‘see’ light to help guide euglena towards patches of light for photosynthesis- like plants, euglena have chloroplasts to make their own food.