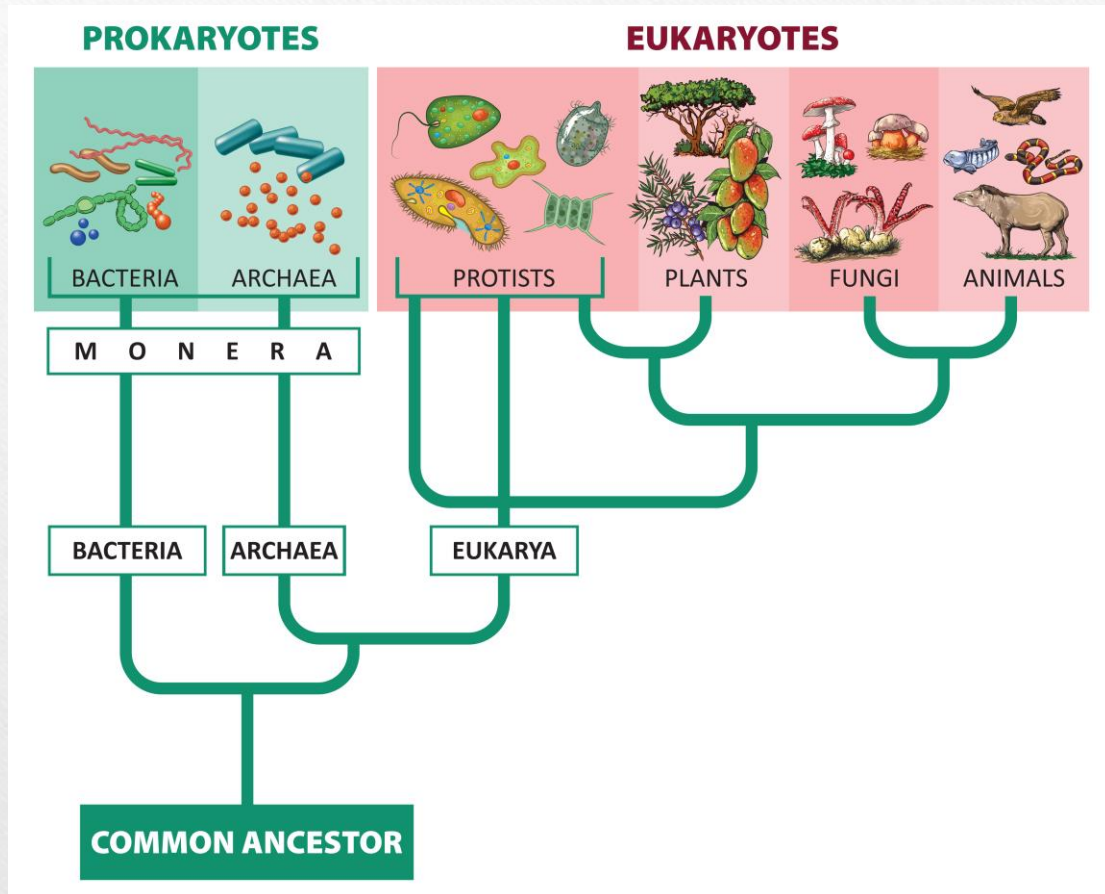


10th Grade

# Amoeba and Hydra

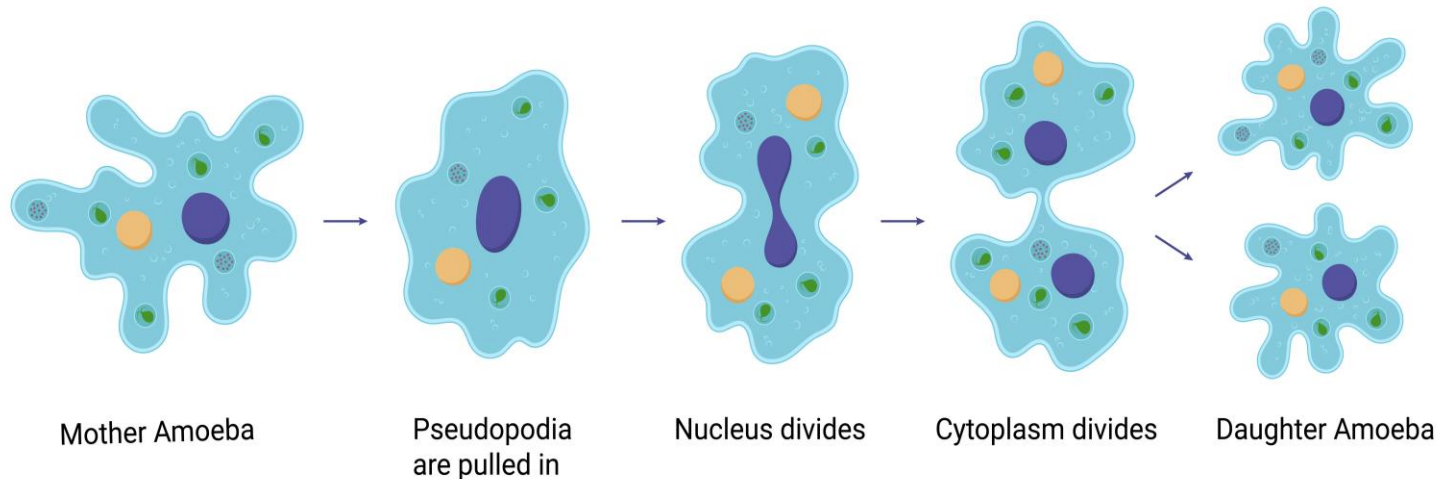
# What are eukaryotes and prokaryotes?

- All living organisms can be broadly divided into two groups — **prokaryotes** and **eukaryotes** — which are distinguished by the relative complexity of their cells. Eukaryotes are highly organized unicellular or multicellular organisms, such as animals and plants. Prokaryotes, on the other hand, are basic single-celled organisms, such as **bacteria** and **archaea**.



# What is Amoeba?

## Binary Fission in Amoeba



Amoebas are eukaryotes. Their single cells, like those of other eukaryotes, possess certain characteristic features: Their cellular contents are enclosed within a cell membrane, and their **DNA** is packaged into a central cellular compartment called the nucleus. In addition, they contain specialized structures called organelles, which perform a range of cellular functions including **energy** production and **protein** transport.



# What is Budding?

- Budding is an asexual mode of producing new organisms. In this process, a new organism is developed from a small part of the parent's body. A bud which is formed detaches to develop into a new organism.

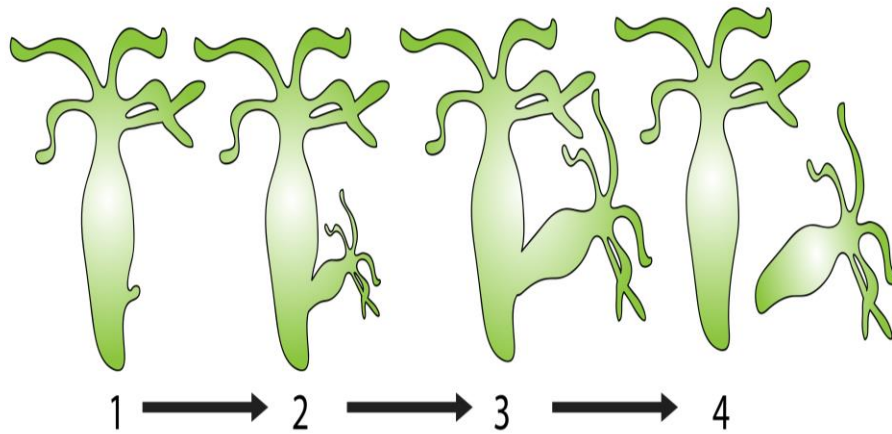
## What is Hydra?

Hydra is exclusively a freshwater organism having different species. It is very small, just a half centimeter long. It is a cnidarian having a tubular body which is composed of a head, distal end and a foot at the end.

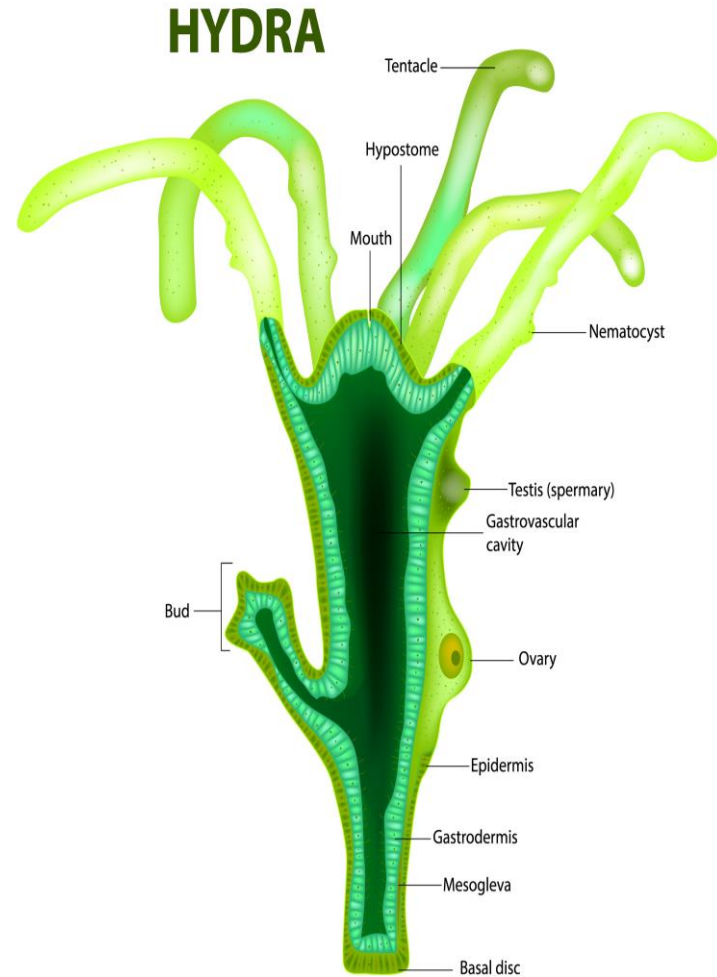
2. Budding in hydra involves a small bud which is developed from its parent hydra through the repeated mitotic division of its cells. The small bud then receives its nutrition from the parent hydra and grows healthy. Growth starts by developing small tentacles and the mouth. Finally, the small newly produced hydra gets separated from its parent hydra and becomes an independent organism.



# What is Hydra?



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## Difference between binary fission in Amoeba and budding in Hydra?

Amoeba	Hydra
1) It is the kind of asexual reproduction in which the parent splits to give rise to two daughter organisms.	1) Asexual reproduction in which a novel organism enlarges from a bud in the parent.
2) Both the cytoplasm and the nucleus of the parent break up into two parts.	2) The bud or the latest organism remains attached to the parent and gets separated on maturation.
3) The parent replicates its genetic material and divides it equally between the two daughters.	3) This bud is just a consequence of cells at one particular site.
4) Unsymmetrical division	4) Symmetric division