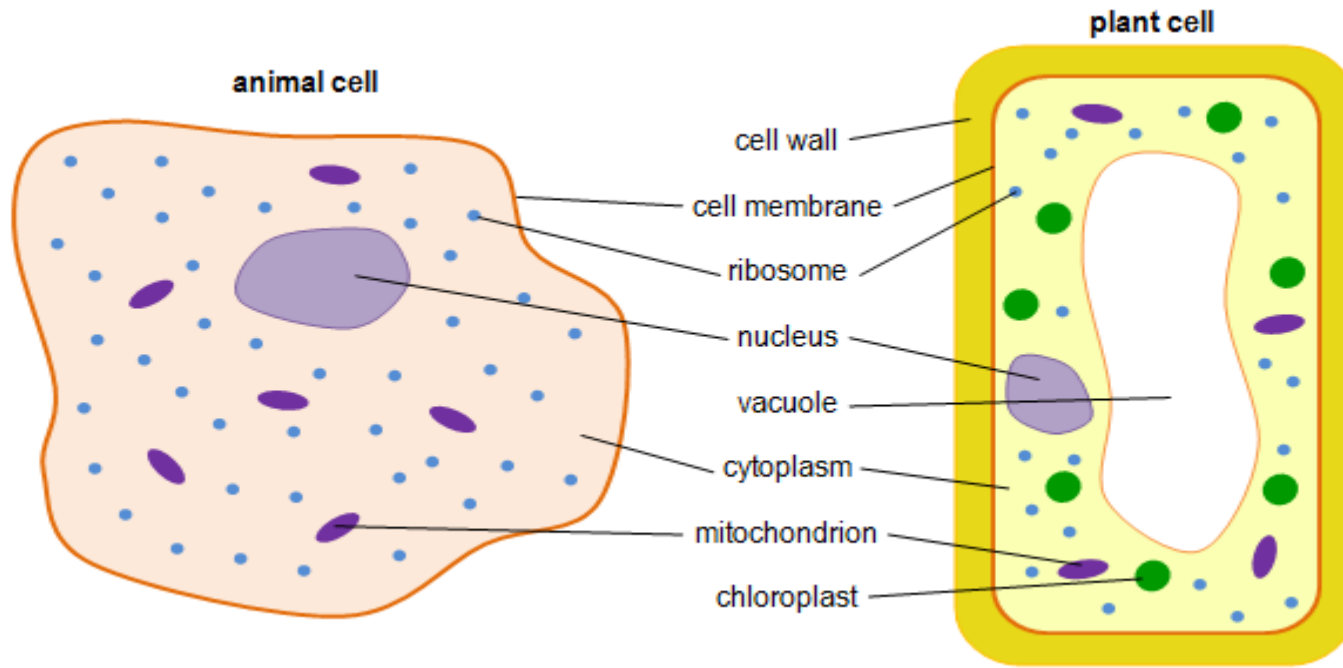


# 4.1 Cell Biology

## Eukaryotes

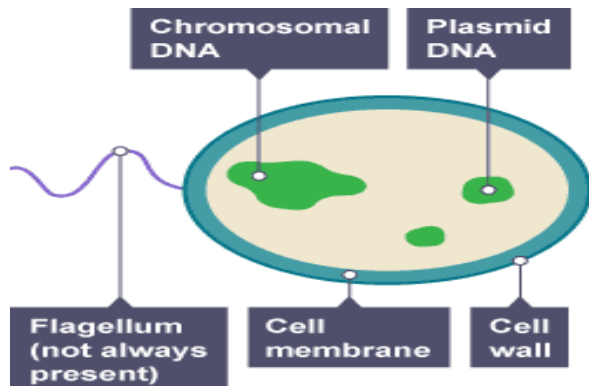
E.g. plant and animal cells



$$\text{Magnification} = \frac{\text{Size of image}}{\text{Size of real object}}$$

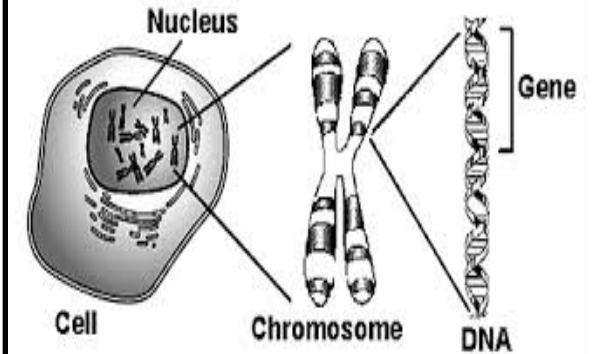
## Prokaryotes

E.g. bacteria:



Specialised cell	Adapted to carry out a specific function
Differentiation	Process by which specialised cells are formed
Stem cell	Undifferentiated cell which can form different cell types
Therapeutic cloning	Transferring nucleus of adult cell to empty egg cell to make tissues / organs used medically

## Mitosis and Cell Cycle



- **Cell cycle:** stages in which a cell divides.
- **Mitosis:** stage of cell cycle where copied DNA divides.
- Before a cell divides it has to increase number of organelles such as mitochondria and ribosomes; DNA has to be copied also.
- **Cell division by mitosis** is important for **growth** and **development** in multicellular organisms.

Cell division

