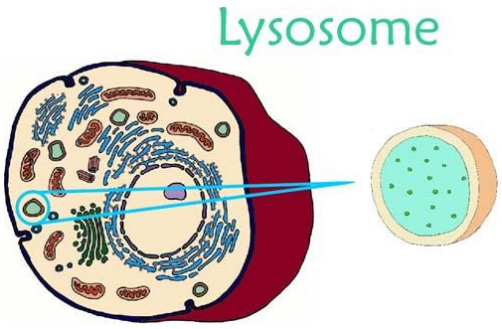
Lysosome

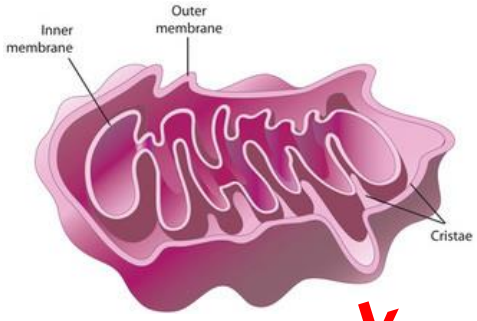
the rubbish bin of the cell. The PH level is low (acidic) which degrades proteins that are no longer needed or are a danger to the cell. They contain powerful digestive enzymes and are 500 nanometres in diameter.



Mitochondria

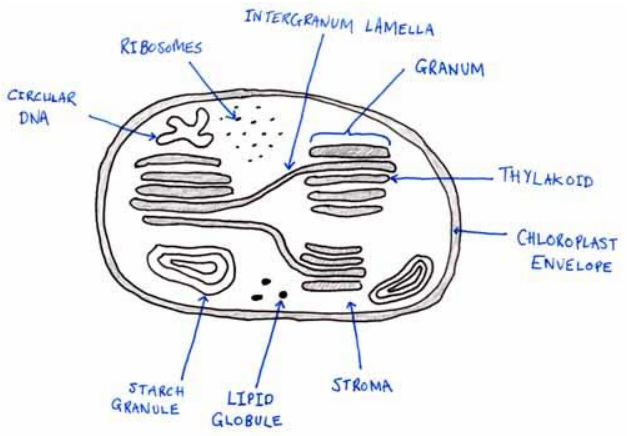
this is where metabolism happens. These organelles make all the energy (in the form of ATP) that the cell needs. They have two membranes, the inner membrane has folds called cristae, this makes the surface area bigger so that more chemical reactions can take place. They have their own DNA and ribosomes so they can make their own proteins. They can also reproduce using fission, similar to bacteria. They account for about 20% of the cells volume, are found in the cytoplasm and are 2 – 8 micrometres long.

Mitochondria function during aerobic respirations and produce energy in the form of ATP.



Chloroplasts

disk shaped structures that are about 5-10 micrometres in length. Like mitochondria, chloroplasts have two membranes. The inner membrane is called the Stroma and is a fluid filled with enzymes for the light independent reactions of photosynthesis. Inside this membrane, are stacks of disk shaped sacs called thylakoids. These contain chlorophyll and other photosynthetic pigments. The light dependent reactions of photosynthesis occur in the thylakoids. Chloroplasts have their own DNA and ribosomes so that they can replicate themselves as they grow and divide.



Plasma membrane

this is what separates the inside of the cell from the outside. It is composed of lipid (fat) molecules that prevent hydrophilic (water loving) molecules from passing through. Hydrophobic molecules can pass through the membrane. Small molecules such as oxygen, carbon dioxide and water are able to pass through the membrane, but larger molecules like amino acids are carefully regulated.