Cell Structures

Plasma membrane

Function
The plasma membrane regulates interactions between the cell and the environment; allowing nutrients to enter and wastes to exit.

Description
The plasma membrane is made of a phospholipid bilayer. A single phospholipid has a hydrophilic head and a hydrophobic tail.

Location
The plasma membrane surrounds the cell to contain its fluids (cytoplasm) and organelles.

Cytoplasm

Function
The cytoskeleton is a vast network of proteins that support the cell. Cytosol holds organelles in place, and aids in waste break down and energy transformation (metabolism).

Consists of…
Cytoplasm refers to the contents inside cells which consists of three things: cytosol, cytoskeleton, and organelles.

Description
Cytosol is a gel-like fluid that fills the cell. The cytoskeleton is a vast network of proteins ("microtubules") that support the cell.

Organelles

Function
Organelles are specialized subunits that perform specific functions, and can be thought of as "Little Organs" within the cell.

Lysosomes
Lysosomes are fluid-filled 'bags', containing digestive chemicals for breaking down food molecules, cell wastes, and worn-out cell parts. They also defend against infection.

Nucleus
A spherical membrane-bound organelle that holds the cell's genetic material (DNA) and acts as the cell's "brain", as it tells the rest of the cell how to function.

Mitochondria
Mitochondria is the site of respiration which converts chemical energy stored in food (glucose) into ATP (the cell's energy source), CO_2, and H_2O.

Nucleolus
The nucleolus is a dense, protein-rich region within the nucleus that produces subunits to form ribosomes. It is visibly darker than the rest of the nucleus

Endoplasmic reticulum
ER is a series of folded membranes which process substances to send to the cell membrane to be exported. Smooth ER has no ribosomes and processes lipids. Rough ER is studded with proteins that are placed into sacs for processing

Ribosomes
Ribosomes are non-membrane bound structures which receive directions from the nucleus on how, when, and in what order to make specific proteins. They are free floating in the cytosol or bound to the ER

Golgi apparatus
Also known as the *Golgi Body* are stacked, flattened membranes which modify proteins that are then packaged into vesicles. Vesicles are small membrane-bound sacs that carry products across the cell