

Biology cells organelles assignment



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Biology- cell organelles assignment Animal cells: Introduction: An animal cell is called a eukaryotic cell; it has a cell membrane, cytoplasm and a nucleus. The cell surface is covered by a membrane only. The cell membrane is strong and keeps the cell together even though it is thin and flexible. The cell membrane also controls what goes in and out of the cell e. g. nutrients go in and waste comes out. The cytoplasm is inside the nucleus and it controls the cells activities.

An animal is made up of thousands of cells with different cells to do different things i. e. tissue cells and blood cells. Tissue cells form the brain, these are specialized cells called neurone or nerve cells. The brain is an organ made up of different tissues. Blood is made up of cells, red blood cells mainly their job is to carry oxygen around the body to the organs. The following is a glossary of animal cell terms From cross-section of an animal cell diagram Cell membrane - the thin layer of protein and fat that surrounds the cell.

The cell membrane is semi permeable, allowing some substances to pass into the cell and blocking others. Centrosome - (also called the "microtubule organizing centre") a small body located near the nucleus - it has a dense centre and radiating tubules. The centrosome is where microtubules are made. During cell division (mitosis), the centrosome divides and the two parts move to opposite sides of the dividing cell. The centriole is the dense centre of the centrosome. Cytoplasm - the jellylike material outside the cell nucleus in which the organelles are located.

Golgi body - (also called the Golgi apparatus or Golgi complex) a flattened, layered, sac-like organelle that looks like a stack of pancakes and is located

near the nucleus. It produces the membranes that surround the lysosomes. The Golgi body packages proteins and carbohydrates into membrane-bound vesicles for "export" from the cell. Lysosome - (also called cell vesicles) round organelles surrounded by a membrane and containing digestive enzymes. This is where the digestion of cell nutrients takes place.

Mitochondrion - spherical to rod-shaped organelles with a double membrane. The inner membrane is infolded many times, forming a series of projections (called cristae). The mitochondrion converts the energy stored in glucose into ATP (adenosine triphosphate) for the cell. Nuclear membrane - the membrane that surrounds the nucleus. Nucleolus - an organelle within the nucleus - it is where ribosomal RNA is produced. Some cells have more than one nucleolus. Nucleus - spherical body containing many organelles, including the nucleolus.

The nucleus controls many of the functions of the cell (by controlling protein synthesis) and contains DNA (in chromosomes). The nucleus is surrounded by the nuclear membrane. Ribosome - small organelles composed of RNA-rich cytoplasmic granules that are sites of protein synthesis. Biology- cell organelles assignment Animal cells: Rough endoplasmic reticulum - (rough ER) a vast system of interconnected, membranous, infolded and convoluted sacks that are located in the cell's cytoplasm (the ER is continuous with the outer nuclear membrane).

Rough ER is covered with ribosomes that give it a rough appearance. Rough ER transports materials through the cell and produces proteins in sacks called cisternae (which are sent to the Golgi body, or inserted into the cell

membrane). Smooth endoplasmic reticulum – (smooth ER) a vast system of interconnected, membranous, infolded and convoluted tubes that are located in the cell's cytoplasm (the ER is continuous with the outer nuclear membrane). The space within the ER is called the ER lumen. Smooth ER transports materials through the cell.

It contains enzymes and produces and digests lipids (fats) and membrane proteins; smooth ER buds off from rough ER, moving the newly-made proteins and lipids to the Golgi body, lysosomes, and membranes. Vacuole – fluid-filled, membrane-surrounded cavities inside a cell. The vacuole fills with food being digested and waste material that is on its way out of the cell. | |

Biology- cell organelles assignment Plant cells: Introduction: Plant cells make their own food by photosynthesis, this happens in the leaves of green plants. Carbon dioxide and water are converted into glucose and oxygen.

The glucose is then turned into starch, fats and oils for storage which is then used to make cellulose for cell walls, proteins for growth and repair and energy by a process called respiration. The following is a glossary of plant cell terms from cross-section of a plant cell diagram: Amyloplast – an organelle in some plant cells that stores starch. Amyloplasts are found in starchy plants like tubers and fruits. Adenosine triphosphate – is a high-energy molecule used for energy storage by organisms. In plant cells, adenosine triphosphate is produced in the cristae of mitochondria and chloroplast.

Cell membrane – the thin layer of protein and fat that surrounds the cell, but is inside the cell wall. The cell membrane is semi permeable, allowing some

substances to pass into the cell and blocking others. Cell wall – a thick, rigid membrane that surrounds a plant cell. This layer of cellulose fibre gives the cell most of its support and structure. The cell wall also bonds with other cell walls to form the structure of the plant. Centrosome – (also called the “microtubule organizing centre”) a small body located near the nucleus – it has a dense centre and radiating tubules.

The centrosome is where microtubules are made. During cell division (mitosis), the centrosome divides and the two parts move to opposite sides of the dividing cell. Unlike the centrosomes in animal cells, plant cell centrosomes do not have centrioles. Chlorophyll – chlorophyll is a molecule that can use light energy from sunlight to turn water and carbon dioxide gas into sugar and oxygen (this process is called photosynthesis). Chlorophyll is magnesium based and is usually green. Chloroplast – an elongated or disc-shaped organelle containing chlorophyll.

Photosynthesis (in which energy from sunlight is converted into chemical energy – food) takes place in the chloroplast. Cristae – (singular crista) the multiply-folded inner membrane of a cell’s mitochondrion that are finger-like projections. The walls of the cristae are the site of the cell’s energy production (it is where adenosine triphosphate is generated). Cytoplasm – the jellylike material outside the cell nucleus in which the organelles are located. Golgi body – (also called the Golgi apparatus or Golgi complex) a flattened, layered, sac-like organelle that looks like a stack of pancakes and is located near the nucleus.

The Golgi body packages proteins and carbohydrates into membrane-bound vesicles for export from the cell. Granum – (plural grana) a stack of thylakoid disks within the chloroplast is called a granum. Biology- cell organelles assignment Plant cells: Mitochondrion – spherical to rod-shaped organelles with a double membrane. The inner membrane is infolded many times, forming a series of projections (called cristae). The mitochondrion converts the energy stored in glucose into ATP (adenosine triphosphate) for the cell. Nuclear membrane – the membrane that surrounds the nucleus.

Nucleolus – an organelle within the nucleus – it is where ribosomal RNA is produced. Nucleus – spherical body containing many organelles, including the nucleolus. The nucleus controls many of the functions of the cell (by controlling protein synthesis) and contains DNA (in chromosomes). The nucleus is surrounded by the nuclear membrane photosynthesis – a process in which plants convert sunlight, water, and carbon dioxide into food energy (sugars and starches), oxygen and water. Chlorophyll or closely-related pigments (substances that colour the plant) are essential to the photosynthetic process.

Ribosome – small organelles composed of RNA-rich cytoplasmic granules that are sites of protein synthesis. Rough endoplasmic reticulum – has a vast system of interconnected, membranous, infolded and convoluted sacks that are located in the cell's cytoplasm (the endoplasmic reticulum is continuous with the outer nuclear membrane). Rough endoplasmic reticulum is covered with ribosomes that give it a rough appearance. Rough endoplasmic reticulum transport materials through the cell and produces proteins in sacks

called cisternae (which are sent to the Golgi body, or inserted into the cell membrane).

Smooth endoplasmic reticulum – is a vast system of interconnected, membranous, infolded and convoluted tubes that are located in the cell's cytoplasm (the endoplasmic reticulum is continuous with the outer nuclear membrane). The space within the endoplasmic reticulum is called the endoplasmic reticulum lumen. Smooth endoplasmic reticulum transport materials through the cell. It contains enzymes and produces and digests lipids (fats) and membrane proteins; smooth endoplasmic reticulum buds off from rough endoplasmic reticulum, moving the newly-made proteins and lipids to the Golgi body and membranes. thylakoid – part of the chloroplasts in plant cells, located within the inner membrane of chloroplasts, between the grana. Thylakoid disk – thylakoid disks are disk-shaped membrane structures in chloroplasts that contain chlorophyll. Chloroplasts are made up of stacks of thylakoid disks; a stack of thylakoid disks is called a granum.

Photosynthesis (the production of molecules from sunlight) takes place on thylakoid disks. Vacuole – a large, membrane-bound space within a plant cell that is filled with fluid.

Most plant cells have a single vacuole that takes up much of the cell. It helps maintain the shape of the cell. Biology- cell organelles assignment The cell is a building block that makes up every living thing. Everything that is alive is made up of one or more cells. All animals and plants are made up of cells; they have the following features in common: nucleus, cytoplasm, cell membrane, mitochondria and ribosomes. But plant cells also have a cell wall, chloroplasts and vacuole. Plant cells have a cell wall but animal cells do not.

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All cells are covered by a cell membrane and come in different shapes; the contents of a cell are called protoplasm, this includes the substance within and the cell and it can be divided into two categories cytoplasm and the nucleus. The Physical properties of protoplasm are that it is a transparent and jelly-like material; the consistency varies from the contents of a fresh egg (runny) to that of semi-solidified gelatine or jelly. If the protoplasm is more liquid it is called a sol, if more gelatinous, a gel. The chemical properties of protoplasm can also be divided into two categories- inorganic and organic substances.

Inorganic substances are water, which make up 90% of the protoplasm, mineral salts, and gases such as oxygen and carbon dioxide. Organic substances include proteins, carbohydrates, lipids, nucleic acids and enzymes. Functions of the Protoplasm Reproduction where the Cells divide to form identical cells. Reaction where cells like the ones in your eye react to light. Chemical which are carried out inside the cell, such as respiration in the mitochondria; Excretion where Cells must get rid of excretory wastes; they usually do this by pushing waste out of the cell through the cell membrane.

Many of the parts inside the cell work together for example: The nucleus which controls the cell and contains DNA works with Ribosomes which originate inside the nucleolus and use molecular messenger ribonucleic acid to obtain DNA from the nucleus to build cellular proteins. The endoplasmic reticulum which is a complex series of folded membranes is connected to the membrane around the nucleus. The endoplasmic reticulum extends to the

cells cytoplasm to create a chemical communication pathway between the membrane and the cytoplasm.

The endoplasmic reticulum then transports proteins within the cell. The Golgi apparatus also works with the endoplasmic reticulum as it is where the proteins are prepared for transport. The vesicles are storage organelles but also move chemicals to other parts of the cell that need it, sometimes to the Golgi apparatus to help with protein preparation. Biology- cell organelles assignment There are 11 systems in the human body, each one has cells. Cells make tissue; tissue makes organs and organs function together to support life in an organism. These systems are:

The circular or cardiovascular system The digestive system The endocrine system The excretory system The immune system The integumentary system The lymphatic system The muscular skeletal system The nervous system The reproductive system The respiratory system They all work together to keep us alive and make us mammals. Biology- cell organelles assignment Bibliography: [www. enchantedlearning. com](http://www.enchantedlearning.com) www. bbcbitesize. co. uk www. badhonhara. com www. library. thinkquest. org www. talktalk. co. uk/encyclopedia www. ehow. com www. biology. clc. uc. edu www. bcb. uwc. ac. za