

## Chapter 1 : Cell and Transport Study Guide | CourseNotes

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Every living organism is made up of cells or just one in the case of bacteria. Your body is composed of microscopic cells that are only visible if viewed under a microscope. All the animals, trees and plants are made up of cells that share many similar characteristics. They all have cell membranes separating them from the outside environment, DNA to store information, RNA to pass this information to the ribosome- and ultimately protein that is translated from the RNA. The cell membrane, or plasma membrane separates the cell from exterior environment and is composed of a phospholipid bilayer. It is composed of phospholipids which each have a polar hydrophilic head and a polar hydrophobic tail. The polarity of the phospholipids helps them self assemble into a structure where the hydrophobic tails all face inward away from the aqueous interior and exterior of the cell. Transmembrane proteins pass all the way through the membrane, while peripheral proteins only pass through one side of the bilayer. Transmembrane proteins are often involved in the transport of compounds and nutrients across the lipid bilayer since only small hydrophobic molecules, water and gas can diffuse freely through the hydrophobic interior. Organelles of the Cell Eukaryotic cells all organisms except bacteria and archaea prokaryotes have complex organelles which are surrounded by their own membrane similar to the cell membrane. Each cell has one nucleus. Within the nucleus is a structure called the nucleolus which is the site of ribosome assembly. The image below is an image of a cell with the nucleus stained blue and the multiple mitochondria stained red Mitochondria - often referred to as the "powerhouse" of the cell, this is the organelle that generates ATP the energy currency of the cell. Mitochondria have a highly folded inner membrane that provides surface area for the enzymatic reactions that produce ATP. The interior of the two membranes is called the matrix, the space in between the two membranes is called the intermembrane space and the folds created by the inner membrane are called cristae. Mitochondria also contain their own DNA which encodes some of the enzymes that are used inside the mitochondria. Endoplasmic reticulum - the system of membranes used for the folding and transport of proteins. Golgi apparatus - used for modifying and packaging of proteins Chloroplast - in plants this organelle is responsible for the reactions of photosynthesis Cell Parts There are other important components of the cell that are not considered organelles since they are not surrounded by their own lipid bilayer. Lysosomes - where the breakdown of nutrients can occur using enzymes Cell Membrane - this is the structure composed of a lipid bilayer that separates the cell from the outside environment Cell Wall - found only in plant and bacteria this structure is found outside the cell membrane and serves as a more rigid protective barrier Differences Between Eukaryotes and Prokaryotes Bacteria and archaea which are seldomly mentioned are prokaryotes. The term prokaryotes is derived from pro before and karyon nucleus: This is because it is thought that bacteria are still very similar to their primitive ancestors which did not have a nucleus. So- bacteria prokaryotes do not have a nucleus, while all eukaryotic cells do have a nucleus this is a popular question for exams- and a common mistake. Bacteria also lack all other membrane bound organelles. Bacteria do not have:

## Chapter 2 : Chapter 5 Cell Transport studyguide -

*Cells & Cell Transport Study Guide Which of the following is the correct order of organization of structures in living things, from simplest to most.*

## Chapter 3 : Cell membrane & Transport Study Guide -

3. *rudolf VIRCHOW- \*all living things are made of cells, \*the cell is the smallest living thing that can carry out life processes, \*cells come from pre-existing cells Explain the difference between active transport and passive transport.*

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### Chapter 4 : Cell Transport Study Guide | Essay Writing Service A+

*Distinguish between a stem cell and a differentiated cell. Give 3 examples of differentiated cells. NUMBER AND NAME THESE LEVELS OF ORGANIZATION IN THE CORRECT ORDER FROM SIMPLEST TO MOST COMPLEX.*

### Chapter 5 : Cell Parts and Functions Study Guide - calendrierdelascience.com

*Javascript not enabled Name: Cell membrane & Transport Quiz True/False Indicate whether the statement is true or false. TF 1. During diffusion, molecules diffuse from a region where their concentration is low to a region where their concentration is higher, until the particles are evenly dispersed.*

### Chapter 6 : Cell and Cell Transport study calendrierdelascience.com

*Cells & Transport Study Guide Cell Theory 1) All living things are made up of cells 2) Cells are the basic units of structure and function in an organism 3) New cells are produced from existing cells Scientists: Robert Hooke Coined word?cell?*