effects on the bilayer

ethanol: causes the cell surface membrane to dissolve

cold temperature: saturated fatty acids become more compressed which lessens the fluidity of the bilayer however unsaturated fatty acids counteract this by becoming more fluid

warm temperatures: the membrane becomes more fluid and more permeable, proteins may move around, and the tertiary structure of proteins may denature, the proteins in the cytoskeleton may also break causing the membrane to collapse

glycoprotiens are proteins attached to carbohydrates and can act as antigens and receptors, or even take part in some reactions

transport

osmosis: the net movement of water from an area of higher water potential to an area of lower water potential

active transport: the movement of molecules against their concentration gradient with the aid of ATP

bulk transport: the use of endocytosis and exocytosis when molecules are too large to enter or leave the cell, this also requires ATP

diffusion: the net movement of molecules down their concentration without the use of ATP

facilitated diffusion: a passive process of the movement of molecules from an area of higher concentration to an area of lower concentration with the aid of a carrier protein

transport (cont)

-diffusion does not require ATP as all molecules have kinetic energy and are always moving no matter if they are stirred or shaken, they move from an area of higher concentration to an area of lower concentration

-the concentration is maintained as the product which enter the cell get used up

factors which affect the rate of diffusion include: temperature, diffusion distance, surface area, concentration gradient and the size of diffusing molecules
-biological membranes within cells such as cristae in mitochondria and thykaloids in chloroplasts are used to increase surface area

associated practical

measuring temperature	measuring solvents
1) cut pieces of beetroot into samples of the same size using a borer	1) cut pieces of beetroot into samples of the same size using a borer
2) wash each of the samples to remove all the excess pigment released from boring	2) wash each of the samples to remove all the excess pigment released from boring
3) place each of the samples into test tubes containing a specified quantity of water	3) place each of the samples into test tubes containing a specified quantity of water

associated practical (cont)

4) run many water baths at different temperatures	4) add different volumes of the solvent into the test tubes
5) place the test tubes into the water baths for a specified period of time	5) leave for a specified period of time
6) remove the beetroot to stop more pigment being released	6) remove the beetroot to stop more pigment being released
7) use a colorimeter to measure the light intensity	7) use a colorimeter to measure the light intensity
8) record the results on a table	8) record the results on a table

the phospholipid bilayer is partially permeable, and is referred to having a fluid mosaic model, it has the following functions:
1) regulating transport into and out of the cell
2) metabolic pathways
3) antigens and cell signalling receptors
4) release of chemicals from the cell