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| **What will we be learning?**  | **Why this? Why now?**Previous Learning Year 9 CellsYear 12 Cell StructureFuture Learning **NB this unit underpins much of A level Biology!****The following units however will need specific knowledge of subcellular structures to be recalled**Year 12 biomolecules and nucleic acidsYear 13 photosynthesisYear 13 RespirationEnquiry ProcessesAnalyse Patterns, Draw conclusions, Present data, Justify opinions, Collect data, Present data, Plan variables | **Key Words:****Carrier protein****Channel protein****Cholesterol****Fluid mosaic model****Glycolipids****Glycoproteins** **Partially permeable****Phospholipid****Active transport****ATP (adenosine triphosphate)** **Co-transport** **Concentration gradient** **Diffusion** **Facilitated diffusion** **Flaccid****Hypotonic****Hypertonic** **Isotonic****Lysis****Osmosis** **Passive movement****Plasmolysis****Solute****Solution****Solvent****Turgid****Turgor pressure****Water potential** |
| **What will we learn?*** The roles of membranes within cells and at the surface of cells.
* How to describe the fluid mosaic model of membrane structure and the roles of its components.
* The factors affecting membrane structure and permeability.
* How to carry out practical investigations into factors affecting membrane structure and permeability.
* How to describe the movement of molecules across membranes.
* How to carry out practical investigations into the factors affecting diffusion rates in model cells.
* How to describe the movement of water across membranes by osmosis and the effects that solutions of different water potential can have on plant and animal cells.
* How to carry out practical investigations into the effects of solutions of different water potential on plant and animal cells?

**Misconceptions in this topic*** Language used to describe diffusion, active transport and osmosis must be chosen carefully to avoid ambiguity or confusion
* The use of the work ‘concentration’ when describing osmosis should be avoided!
* Plant cells CAN recover from incipient plasmolysis – they cannot from full plasmolysis
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| **What opportunities are there for wider study?**CareersBiochemistry Biotechnology Forensics Laboratory Work Medicine Pharmacology Science STE(A)M https://highcliffe.sharepoint.com/sites/LearnSTEM |
| **How will I be assessed?**End of topic assessment PAG 5.1PAG 8.1 |