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| **What will we be learning?** | **Why this? Why now?**  Previous Learning  Year 9 Cells  Year 12 Cell Structure  Future 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 acids  Year 13 photosynthesis  Year 13 Respiration  Enquiry Processes  Analyse 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 | |
| **What opportunities are there for wider study?**  Careers  Biochemistry 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 5.1  PAG 8.1 | |