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| **What will we be learning?** | **Why this? Why now?**  Previous Learning  Year 9 Cells  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 membranes  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:**  **Cell wall**  **Centrioles**  **Chloroplast**  **Cytoplasm**  **Eukaryotic cell**  **Golgi body/apparatus**  **Lysosome**  **Mitochondria**  **Nuclear Pore**  **Nucleus**  **Nucleolus**  **Plasma membrane**  **Organelle**  **Ribosome**  **Rough Endoplasmic Reticulum (RER)**  **Smooth Endoplasmic Reticulum (SER)**  **Vacuole** |
| **What will we learn?**   * *How to use of microscopy to observe and investigate different types of cell and cell structure in a range of eukaryotic organisms* * *How to prepare and examine microscope slides for use in light microscopy* * *How to use of staining in light microscopy* * *How to use drawings and annotated diagrams of whole cells or cells in sections of tissue* * *How to manipulate the magnification formula* * *The differences between magnification and resolution* * *The ultrastructure of eukaryotic cells and the functions of the different cellular components* * *To identify photomicrographs of cellular components in a range of eukaryotic cells* * *The interrelationship between the organelles involved in the production and secretion of proteins* * *The importance of the cytoskeleton* * *The similarities and differences in the structure and ultrastructure of prokaryotic and eukaryotic cells.*   **Misconceptions in this topic**   * Cells are not two dimensional! * Nuclei are stores of genetic information (not ‘brains of the cell’) * Mitochondria are the site of aerobic respiration (not cellular powerhouses!) * Microscopes DO NOT ‘zoom in’!! | |
| **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 | |