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| **What will we be learning?**  | **Why this? Why now?**Previous Learning Year 9 CellsFuture 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 membranesYear 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:****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’!!
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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 |