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| **What will we be learning?**  **GCSE Unit: Cell Biology** | **Why this? Why now?**  **GCSE Course:**  AQA Trilogy  AQA Separate Biology  **What other GCSE Science units does this unit relate to?**  **Organisation** – 4.2.1 principles of organisation, 4.2.2 animal tissues, organs and organ systems including; digestive system, heart, blood, lungs, cancer 4.2.3 Plant tissue organs and systems  **Infection and Response** – 4.3.1.6 white blood cells  **Bioenergetics** – 4.4.1 photosynthesis, 4.4.2 Respiration  **Inheritance, Variation & Evolution** – 4.6.1 meiosis, chromosomes, DNA, genetic inheritance  **Homeostasis and Response** -4.5.2 nerve cells | **Key Words:**  eukaryote  prokaryote  nucleus  cytoplasm  mitochondria  ribosomes  vacuole  cell membrane  chloroplast  cell wall  plasmid  specialisation  differentiation  stem cell  microscope  objective lens  eye piece lens  focus  magnification  resolution  field of view  mitosis  chromosomes  diffusion  osmosis  active transport  partially permeable  concentration gradient |
| **What will we learn?**  **Useful equations/formulae/maths skills for this unit:**  Orders of magnitude  Converting millimetres to micrometres (x 1000)  Standard form, significant figures and decimal places  Interpret graphs  Plot graphs  **Magnification = size of image**  **size of real object**  **Misconceptions in this topic**  The nucleus is the brain of the cell – no, a brain is an organ too big to fit in a cell, it is made of cells! The nucleus controls the cell and contains genetic information  Animal cells have cell walls – no, plant cells and bacteria have cell walls. Both animal cells and plant cells have cell membranes  Cell specialisation and differentiation are the same thing – no, cells are adapted to carry out their functions, this is specialisation. Stem cells will differentiate to form different types of cells in the body/plant | |
| **What opportunities are there for wider study?**  **If you are interested in this unit, what careers does it relate to?**  Research scientist, cell biologist, geneticist, microbiologist, medical careers  **Collins Revision guide relevant pages for this unit:**  Higher and Foundation Trilogy books P.16-23, 34-35, 56-57  Separate Biology books P.8-15, 26-29, 56-59 | |
| **How will I be assessed?**  **Deep Marking Task Title for this unit:** Required Practical on Osmosis write up | |