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| **What will we be learning?**  **Year 12 Cell Division** | **Why this? Why now?**  Previous Learning  Year 11 Cells  Future Learning  Year 12 patterns of inheritance  Year 12 biotechnology and cloning  Enquiry Processes  Analyse Patterns, Draw conclusions, Present data, Justify opinions, Collect data, Present data, Plan variables | **Key Words:**  **Anaphase**  **Asexual**  **Binary fission**  **Cancer**  **Carcinogen**  **Cell cycle**  **Chromatid**  **Chromatin**  **Continuous variation**  **Crossing over**  **Cytokinesis**  **Diploid**  **Fertilisation**  **Gamete**  **Genetic variation**  **Haploid**  **Homologous chromosomes**  **Independent assortment**  **Interphase**  **Meiosis**  **Metaphase**  **Mitosis**  **Mutation**  **Prophase**  **Random fertilisation**  **Random sample**  **S phase**  **Spindle fibre**  **Standard deviation**  **Telophase**  **Tumour** |
| **What will we learn?**   * What is the cell cycle and how is it regulated? * The main stages of mitosis and the significance of mitosis in life cycles * The main stages of meiosis and the significance of meiosis in life cycles * How cells of multicellular organisms are specialised for particular functions * The features and differentiation of stem cells * The potential uses of stem cells in research and medicine   **Misconceptions in this topic**  Location of plant growth is restricted to meristems (shoot tip, root tip, cambium) unlike more complex areas of growth in animals – this tends to be poorly understood  Yeast DO NOT go through mitosis – they bud!  Bacteria DO NOT go through mitosis – they go through binary fission! | |
| **What opportunities are there for wider study?**  Careers  Forensics Biochemistry Medicine Laboratory Work Teaching Pharmacology Biotechnology  STE(A)M  https://highcliffe.sharepoint.com/sites/LearnSTEM | |
| **How will I be assessed?**  End of topic assessment  PAG 1.1 | |