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| **What will we be learning?****Year 12 Cell Division** | **Why this? Why now?**Previous Learning Year 11 CellsFuture Learning Year 12 patterns of inheritanceYear 12 biotechnology and cloningEnquiry ProcessesAnalyse 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 understoodYeast 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?**CareersForensics Biochemistry Medicine Laboratory Work Teaching Pharmacology BiotechnologySTE(A)M https://highcliffe.sharepoint.com/sites/LearnSTEM |
| **How will I be assessed?**End of topic assessment PAG 1.1 |