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| **What will we be learning?**  **GCSE Unit:** **Inheritance, Variation and Evolution** | **Why this? Why now?**  **GCSE Course:**  AQA Separate Biology  **What other GCSE Science units does this unit relate to?**  **Cells** – 4.1.1 cell structure, 4.1.2 cell division  **Infection and Response** – 4.3.1.8 resistant bacteria  **Ecology** – 4.7.1 adaptations | **Key Words:**  asexual  mitosis  meiosis  gametes  zygote  clone  DNA  nucleotide  bases  genome  chromosome  gene  allele  dominant  recessive  homozygous  heterozygous  genotype  phenotype  fertilisation  cystic fibrosis  polydactyly  mutation  natural selection  evolution  selective breeding  genetic engineering  restriction enzymes  transgenic organism  classification  domain  genus  species  binomial name  taxonomic group |
| **What will we learn?**  **Useful equations/formulae/maths skills for this unit:**  Probability  Ratios, fractions and percentages  Interpret tables and graphs  Plot graphs from given data  **Misconceptions in this topic**  Mutations are bad – not always, some mutations can be beneficial and bring about natural selection.  Natural selection and evolution are the same thing – no, natural selection is the process that over time brings about evolution which is a change in a species.  Genetic engineering and selective breeding are the same thing – no, selective breeding is choosing characteristics of individuals and allowing them to breed. Genetic engineering is inserting a gene from a different organism into the DNA of an organism you want to change. We have been selectively breeding for hundreds of years, but we have only been able to genetically engineer organisms recently. | |
| **What opportunities are there for wider study?**  **If you are interested in this unit, what careers does it relate to?**  geneticist, forensic scientist, food technology, farmer, horticulturalist, agronomist, doctor, nurse, midwife, genetic counsellor, academic researcher, immunologist, pharmacologist, plant breeder/geneticist  **Collins Revision guide relevant pages for this unit:**  P.74-85, 104-107, 112-115 | |
| **How will I be assessed?**  **Deep Marking Task Title for this unit:** Genetic Engineering | |