



SB3 Genetics

Personal learning checklist | 1 of 2

GCSE Edexcel Separate Sciences | Biology Paper 1

Name _____ Class _____ Date _____

Tick one box for each statement. Red: need help. Amber: partly confident.
Green: can do independently.

I can	Red	Amber	Green
Reproduction and chromosomes			
Compare mitosis and meiosis, including chromosome number, daughter cells and genetic variation.	☐	☐	☐
Explain how haploid gametes and fertilisation restore the diploid chromosome number.	☐	☐	☐
DNA and extraction			
Describe DNA nucleotides, the double helix and complementary base pairing.	☐	☐	☐
Explain the relationships between chromosomes, genes, alleles and the genome.	☐	☐	☐
Explain the stages of fruit DNA extraction and the roles of detergent, salt, filtration and cold ethanol.	☐	☐	☐
Interpret visible extracted DNA and explain safe handling of ethanol.	☐	☐	☐
Inheritance language			
Distinguish genotype from phenotype and homozygous from heterozygous alleles.	☐	☐	☐
Explain dominant and recessive inheritance using correctly cased allele symbols.	☐	☐	☐
Genetic crosses and pedigrees			
Construct monohybrid Punnett squares from parental genotypes and possible gametes.	☐	☐	☐
Calculate genotype and phenotype ratios, probabilities and expected offspring numbers.	☐	☐	☐
Explain why predicted inheritance ratios are not guaranteed in small families.	☐	☐	☐
Interpret pedigree symbols and infer affected, carrier and possible unaffected genotypes.	☐	☐	☐
Use an XX/XY genetic diagram to explain sex determination and its probabilities.	☐	☐	☐

My next revision priority _____



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Variation and genomes			
Explain genetic and environmental variation, including the effects of multiple genes.	☐	☐	☐
Explain how mutations and sexual reproduction create genetic variation and affect phenotype.	☐	☐	☐
Distinguish continuous and discontinuous variation and interpret suitable frequency graphs.	☐	☐	☐
Evaluate medical uses and limitations of Human Genome Project information.	☐	☐	☐
Reproduction and inheritance evidence			
Compare advantages and disadvantages of sexual and asexual reproduction.	☐	☐	☐
Explain Mendel's experiments, conclusions and why acceptance was delayed.	☐	☐	☐
Protein synthesis and variants			
Explain how DNA base order determines amino-acid sequence, protein shape and function (Higher).	☐	☐	☐
Describe transcription and translation using RNA polymerase, mRNA, ribosomes and tRNA (Higher).	☐	☐	☐
Compare effects of coding and non-coding DNA variants on protein production and phenotype (Higher).	☐	☐	☐
Multiple alleles and sex linkage			
Use codominance and multiple alleles to predict ABO blood groups and probabilities.	☐	☐	☐
Explain X-linked recessive inheritance and calculate probabilities for sons and daughters (Higher).	☐	☐	☐

My next revision priority _____