



SB4 Natural selection and genetic modification

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
Natural selection			
Explain evolution by natural selection using inherited variation, selection pressures and reproductive success.	☐	☐	☐
Explain why selection acts on existing variation rather than producing changes organisms need.	☐	☐	☐
Explain antibiotic resistance and other examples as evidence for natural selection.	☐	☐	☐
Calculate and interpret changes in resistant populations, distinguishing percentages from percentage points.	☐	☐	☐
Evolutionary evidence			
Compare Ardi, Lucy and Leakey fossil dates and the evidence for upright walking.	☐	☐	☐
Explain shared ancestry and limitations of the fossil record.	☐	☐	☐
Explain how stone tool development and surrounding layers provide evidence about human evolution.	☐	☐	☐
Classification			
Use binomial names and compare the characteristics of the traditional five kingdoms.	☐	☐	☐
Explain how genetic evidence led to the Bacteria, Archaea and Eukarya domains.	☐	☐	☐
Selective breeding			
Describe selective breeding stages and useful inherited traits in crops and animals.	☐	☐	☐
Evaluate selective breeding using genetic diversity, inherited disorders and animal welfare.	☐	☐	☐

My next revision priority _____



SB4 Natural selection and genetic modification

Personal learning checklist | 2 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
Genetic engineering			
Distinguish selective breeding from introducing a useful gene through genetic engineering.	☐	☐	☐
Explain how restriction enzymes, sticky ends, ligase and plasmid vectors produce recombinant DNA (Higher).	☐	☐	☐
Describe transferring recombinant plasmids into bacteria and producing a useful protein (Higher).	☐	☐	☐
Applications and evaluation			
Explain examples of genetic engineering in nutrition, medicine and useful protein production.	☐	☐	☐
Evaluate genetic engineering using evidence about benefits, ecosystem risks and practical and ethical concerns.	☐	☐	☐
Compare agricultural changes using yield data and percentage increases.	☐	☐	☐
Evolutionary evidence			
Describe Darwin and Wallace's contributions and how genetics strengthened natural selection.	☐	☐	☐
Explain how pentadactyl limbs support common ancestry despite different functions.	☐	☐	☐
Tissue culture and GM crops			
Describe plant tissue culture and evaluate cloning and animal-cell research.	☐	☐	☐
Evaluate GM crops, including Bt resistance, gene transfer, costs and environmental effects.	☐	☐	☐
Agricultural methods			
Explain fertiliser benefits and how runoff can cause eutrophication.	☐	☐	☐
Evaluate biological control and compare crop-management methods using evidence.	☐	☐	☐

My next revision priority _____