Selection and evolution

A-Level Biology · Vocabulary in context

Word	Example
variation /ˌveərɪˈeɪʃn/	People's heights show **variation**.
allele /əˈliːl/	The gene for eye colour has a brown **allele** and a blue allele.
environmental factor /enˌvaɪrənˈmentl ˈfæktə/	Light is an **environmental factor** that affects plant height.
discontinuous variation /dɪskənˈtɪnjuːəs ˌveərɪˈeɪʃn/	Blood group shows **discontinuous variation**.
gene /dʒiːn/	A **gene** is a piece of DNA that codes for one protein.
continuous variation /kənˈtɪnjuːəs ˌveərɪˈeɪʃn/	Height shows **continuous variation**.
polygenes	Height is controlled by **polygenes**: many genes, each with a small effect.
null hypothesis /nʌl haɪˈpɒθəsɪs/	The **null hypothesis** says there is no difference between the groups.
population /ˌpɒpjʊˈleɪʃn/	All the rabbits in a field form a **population**.
offspring /ˈɒfsprɪŋ/	The **offspring** look like their parents.
compete /kəmˈpiːt/	Plants **compete** for light, water and space.
adapted /əˈdæptɪd/	A cactus is **adapted** to dry places.

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reproduce /rɪprə'djuːs/	Animals that survive can **reproduce** and pass on their genes.
natural selection /'nætʃərəl sɪ'lekʃn/	**Natural selection** means the best-suited animals survive and have young.
stabilising selection /'steɪbəlaɪzɪŋ sɪ'lekʃn/	**Stabilising selection** favours the average, such as babies of medium weight.
directional selection /daɪ'rekʃənl sɪ'lekʃn/	**Directional selection** favours one extreme, such as darker moths in sooty areas.
disruptive selection /dɪs'rʌptɪv sɪ'lekʃn/	**Disruptive selection** favours both extremes, such as very large and very small beaks.
founder effect /'faʊndə ɪ'fekt/	The **founder effect** happens when a few individuals start a new population.
genetic drift /dʒɪ'netɪk drɪft/	**Genetic drift** changes allele frequencies by chance, especially in small groups.
bottleneck effect /'bɒtəlnek ɪ'fekt/	The **bottleneck effect** happens when most of a population dies and few alleles survive.
mutation /mjuː'teɪʃn/	A **mutation** is a change in the DNA. DNA
antibiotic /ˌæntɪbaɪ'ɒtɪk/	An **antibiotic** kills bacteria.
resistance /rɪ'zɪstəns/	Bacteria that survive the antibiotic pass their **resistance** on to their offspring.

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Hardy–Weinberg principle /ˈhɑːdi ˈwaɪnbɜːg ˈprɪnsɪpl/	The **Hardy–Weinberg principle** says allele frequencies stay the same if nothing changes them.
allele frequency /əˈliːl ˈfriːkwənsi/	The **allele frequency** of the blue allele is 30%. 30%
genotype /ˈdʒenətaɪp/	Bb is a **genotype**. Bb
selective breeding /sɪˈlektɪv ˈbriːdɪŋ/	Farmers use **selective breeding** to get cows that give more milk.
artificial selection /ˌɑːtɪˈfɪʃl sɪˈlekʃn/	Dogs were made by **artificial selection**.
disease resistance /dɪˈziːz rɪˈzɪstəns/	Some wheat has **disease resistance**, so the fungus cannot harm it.
inbreeding /ˈɪnbriːdɪŋ/	**Inbreeding** means breeding closely related animals.
hybridisation /ˌhaɪbrɪdaɪˈzeɪʃn/	**Hybridisation** crosses two different varieties to combine their good features.
yield /jiːld/	Fertilisers increase the **yield** of crops.
inbreeding depression	**Inbreeding depression** makes offspring weaker when close relatives breed.
hybrid vigour	**Hybrid vigour** makes the offspring of two different lines grow strong.
evolution /ɪvəˈluːʃn/	Darwin explained **evolution** by natural selection.
species /ˈspiːsiːz/	Lions and tigers are different **species**.

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gene pool /dʒi:n pu:l/	A large **gene pool** has many different alleles.
sequence /'si:kwəns/	The **sequence** of bases in DNA codes for the order of amino acids. DNA
speciation /ˌspi:ʃi'eɪʃn/	**Speciation** is the forming of a new species.
isolation /ˌaɪsə'leɪʃn/	**Isolation** stops two groups from breeding together.
allopatric speciation /ˌælə'pætrɪk ˌspi:ʃi'eɪʃn/	In **allopatric speciation**, a new species forms after a mountain or sea separates two groups.
geographical separation /ˌdʒɪə'græfɪkl ˌsepə'reɪʃn/	**Geographical separation**, such as a river, keeps two groups apart.
sympatric speciation /'sɪmpətrɪk ˌspi:ʃi'eɪʃn/	In **sympatric speciation**, a new species forms in the same place as the old one.
polyploidy	**Polyploidy** gives a plant extra sets of chromosomes.

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