Natural Selection

AP Biology · Vocabulary in context

Word	Example
Evolution /ɪvə'luːʃn/	**Evolution** is change in a population over generations.
Natural selection /'nætʃərəl sɪ'lekʃn/	**Natural selection** favours the best-suited individuals.
competition /ˌkɒmpə'tɪʃn/	Two plants are in **competition** for light.
variation /ˌveərɪ'eɪʃn/	People's heights show **variation**.
Fitness /'fɪtnəs/	**Fitness** is how many offspring an individual leaves.
adaptations /ˌædæp'teɪʃnz/	Thick fur and sharp claws are **adaptations**.
sexual selection	Peacock tails are shaped by **sexual selection**.
artificial selection /ˌɑːtɪ'fɪʃl sɪ'lekʃn/	Dogs were made by **artificial selection**.
Population genetics /ˌpɒpjʊ'leɪʃn dʒɪ'netɪks/	**Population genetics** studies alleles in groups.
allele frequencies /ə'liːl 'friːkwənsiz/	**Allele frequencies** change as a population evolves.
gene flow /dʒiːn fləʊ/	**Gene flow** moves alleles between populations.
genetic drift /dʒɪ'netɪk drɪft/	**Genetic drift** changes allele frequencies by chance, especially in small groups.

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bottleneck effect /ˈbɒtəlnek ɪˈfekt/	The **bottleneck effect** happens when most of a population dies and few alleles survive.
founder effect /ˈfaʊndə ɪˈfekt/	The **founder effect** happens when a few individuals start a new population.
Hardy–Weinberg /ˈhɑːdi ˈwaɪnbɜːg/	The **Hardy–Weinberg** equation predicts allele frequencies with no evolution.
null hypothesis /nʌl haɪˈpɒθəsɪs/	The **null hypothesis** says there is no difference between the groups.
fossil record /ˈfɒsl ˈrekɔːd/	The **fossil record** shows life from long ago.
homologous structures /həˈmɒləgəs ˈstrʌktʃəz/	**Homologous structures** have the same origin, like human arms and bat wings.
vestigial structures /ˈvestɪdʒl ˈstrʌktʃəz/	**Vestigial structures** have lost their use, like the human appendix.
common ancestor /ˈkɒmən ˈænsestə/	Humans and chimps share a **common ancestor**.
phylogenetic tree /ˌfaɪləʊdʒˈnetɪk triː/	A **phylogenetic tree** shows how species are related.
molecular clock	A **molecular clock** uses DNA changes to estimate time.
cladogram /ˈklædəgræm/	A **cladogram** shows how groups of living things are related, like a family tree.
outgroup	An **outgroup** is a species outside the group being studied.

DNA

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shared derived characters	**Shared derived characters** show which species are closely related.
Speciation /ˌspiːʃɪˈeɪʃn/	**Speciation** forms new species.
reproductively isolated /rɪprəˈdʌktɪvli ˈaɪsəleɪtɪd/	The two groups became **reproductively isolated**: they can no longer breed.
biological species concept	The **biological species concept** defines a species by breeding.
prezygotic	**Prezygotic** barriers stop mating or fertilisation.
postzygotic	**Postzygotic** barriers act after fertilisation.
gradualism	**Gradualism** says evolution happens slowly.
punctuated equilibrium	**Punctuated equilibrium** says change comes in short bursts.
divergent evolution /daɪˈvɜːdʒənt ɪvəˈluːʃn/	**Divergent evolution** makes related species more different.
adaptive radiation /əˈdæptɪv ˌreɪdɪˈeɪʃn/	**Adaptive radiation** gives many species from one ancestor.
convergent evolution /kənˈvɜːdʒənt ɪvəˈluːʃn/	**Convergent evolution** makes unrelated species look alike.
diversity /daɪˈvɜːsɪti/	The rainforest has great **diversity** of life.
endosymbiosis /ˌendəʊˌsɪmbaɪˈəʊsɪs/	**Endosymbiosis** explains how mitochondria entered cells.

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analogous structures	Bird and insect wings are **analogous structures**.

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