

Edexcel (B) Biology A-level

3.3 - Biodiversity

Flashcards

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What is biodiversity?



What is biodiversity?

The variety of living organisms. It can be assessed at different levels; within a habitat at the species level (index of diversity) or within a species at the genetic level (variety of alleles).



How do you calculate index of diversity (d)?



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$$d = \frac{N(N - 1)}{\sum n(n - 1)}$$

N = total number of organisms of all species.

n = total number of organisms of each species.

Σ = sum of



What is an allele?



What is an allele?

Different forms of a particular gene, found at the same locus (position) on a chromosome. A single gene could have many alleles.



How does a species' variety of alleles relate to biodiversity?



How does a species' variety of alleles relate to biodiversity?

Within a species, all organisms have the same gene pool. However each organisms will have a different combination of alleles. A wider variety of alleles within a species increases diversity.



Give reasons why we should maintain biodiversity.



Give reasons why we should maintain biodiversity.

- More stable, resilient populations
- Ecotourism opportunities
- Provide sources of medicine
- Stabilise soils
- Increase the gene pool



Define conservation.



Define conservation.

The protection and management of species and habitats, in order to maintain biodiversity. Can be in-situ (in an organism's habitat) or ex-situ (outside an organism's habitat).



Give examples of in-situ conservation.



Give examples of in-situ conservation.

- Protected habitats e.g. National Parks that protect the species there from depletion.
- Education programmes that teach people about the importance of biodiversity.



Give advantages and disadvantages of in-situ conservation.



Give advantages and disadvantages of in-situ conservation.

- + Protects more than one species, cheap, few resources required.
- Hard to enforce legislation, populations may still decline.



Give examples of ex-situ conservation.



Give examples of ex-situ conservation.

- Zoos where endangered species can be carefully bred to increase genetic diversity and prevent inbreeding.
- Seed banks store seeds carefully to keep them viable, to prevent certain species from going extinct.



Give advantages and disadvantages of in-situ conservation.



Give advantages and disadvantages of ex-situ conservation.

- + Requires little space, eliminates predators and poachers.
- Expensive, can't fully recreate natural habitat, disease spreads quickly.

