Edexcel IAL Biology A-level
4.14-4.18 - Biodiversity

Flashcards

Define classification

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The process of naming and organising organisms into groups based on their phenotypic and genotypic characteristics and evolutionary history

What is the species concept?

What is the species concept?

The species concept is a way of defining a species as organisms which can interbreed to produce fertile offspring

Can the classification of an organism change?

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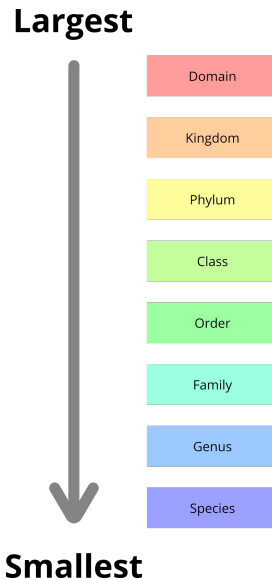Yes, the classification of an organism may change as new information becomes available

Name the seven groups in the hierarchy of taxons, from largest to smallest

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Largest

| Domain |
| Kingdom |
| Phylum |
| Class |
| Order |
| Family |
| Genus |
| Species |

Smallest

Name the three domains

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Archaea, Bacteria, and Eukarya

How was the three domain system of classification developed?

How was the three domain system of classification developed?

- By analysing molecular differences between organisms to determine their evolutionary relationships

- Evidence showed that the kingdom 'prokaryotae' could be divided into two groups. All other organisms are eukaryotes

What is Bacteria?

What is Bacteria?

- One of the three domains

- Consists of 'true' bacteria

- Also known as Eubacteria

What is Archaea?

What is Archaea?

- One of the three domains

- Made up of primitive bacteria existing in extreme environments, e.g. extremophile prokaryotes

- Also known as Archaebacteria

What is Eukarya?

What is Eukarya?

- One of the three domains

- Consists of all eukaryotic organisms

How are different types of evidence used in classification?

How are different types of evidence used in classification?

- **Observations** (e.g. fossils) - organisms grouped based on similar physical characteristics.

- **Biochemical methods** (e.g. DNA genetic fingerprinting)

What is the greenhouse effect?

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The increase of global temperatures caused by the trapping of solar heat by gases in the atmosphere

How might global warming affect the natural world?

How might global warming affect the natural world?

- Temperature, rainfall, light levels etc. all affect survival

- Habitats may be destroyed by deforestation or flooding

- Species may need to change their habitat, or face **extinction**

Give 3 ways that biodiversity is threatened by human activity

Give 3 ways that biodiversity is threatened by human activity

- Pollution

- Habitat destruction

- Poaching and hunting

What is deforestation?

What is deforestation?

The removal of trees from land which is subsequently used to grow crops or provide space for cattle

Outline the consequences of deforestation

Outline the consequences of deforestation.

- Loss of biodiversity
- Climate change
- Habitat loss
- Soil erosion
- Desertification
- Lowland flooding

Define biodiversity

Define biodiversity

The number and variety of living organisms in a given region. It is affected by environmental, genetic and human factors

What is endemism?

What is endemism?

A term which refers to a species that is unique to a specific geographic location

What is the heterozygosity index?

What is the heterozygosity index?

A measure of the proportion of a population which is heterozygotic.

How is the heterozygosity index calculated?

How is the heterozygosity index calculated?

$$H = \frac{Number\ of\ hetrozygotes}{Number\ of\ individuals\ in\ the\ population}$$

What statistical technique is used to compare biodiversity in different habitats?

What statistical technique is used to compare biodiversity in different habitats?

Simpson's index of biodiversity (D)

How is the Simpson's index of biodiversity calculated?

How is the Simpson's index of biodiversity calculated?

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

N = Total number of organisms

n = Total number of organisms of the species of interest