

WJEC Wales Biology GCSE

2.1 - Classification and Biodiversity

Flashcards

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What are the two broad groups of plants?



What are the two broad groups of plants?

Flowering and non-flowering



What are the two broad groups of animals?



What are the two broad groups of animals?

Vertebrates and invertebrates



What is the difference between vertebrates and invertebrates?



What is the difference between vertebrates and invertebrates?

Vertebrates have a backbone whereas invertebrates do not



Why are scientific names for organisms important?



Why are scientific names for organisms important?

So that there is no confusion and one universal name can be provided for each organism that everyone can understand



Give 2 ways that organisms can be classified



Give 2 ways that organisms can be classified

- Physical features
- Phylogenetic relationships



What are the 7 levels of classification?



What are the 7 levels of classification?

Kingdom

Phylum

Class

Order

Family

Genus

Species



Why are adaptations important?



Why are adaptations important?

Adaptations that mean organisms are more suited to their environment will help them to survive and reproduce as they will be able to outcompete other individuals



Give 4 things animals compete for



Give 4 things animals compete for

- Mates
- Space
- Food
- Water



Give 4 things that plants compete for



Give 4 things that plants compete for

- Light
- Water
- Minerals
- Space



What are the 2 different types of competition in an ecosystem?



What are the 2 different types of competition in an ecosystem?

Interspecific competition and intraspecific competition



What is interspecific competition?



What is interspecific competition?

Where organisms of **different species** compete for resources (e.g. food, water, shelter)



What is intraspecific competition?



What is intraspecific competition?

When organisms from the **same species** compete for resources (e.g. food, water, shelter)



Why is competition necessary in an ecosystem?



Why is competition necessary in an ecosystem?

Competition is necessary when resources are limited and it leads to evolution by natural selection



Define biodiversity



Define biodiversity

The variety of living organisms in an area.



Why is biodiversity important?



Why is biodiversity important?

- Different organisms can provide food or useful industrial materials
- Some animals or plants may have useful medicinal properties
- Ecotourism benefits communities



What is the Convention on International Trade in Endangered Species (CITES)?



What is the Convention on International Trade in Endangered Species (CITES)?

An international agreement that regulates the trade of endangered species so that their survival is not threatened and biodiversity can be maintained



What is the difference between conservation and preservation?



What is the difference between conservation and preservation?

Conservation is the sustainable and active management of an ecosystem whereas preservation aims to maintain an ecosystem in its current state



What is a Site of Specific Scientific Interest (SSSI)?



What is a Site of Specific Scientific Interest (SSSI)?

An area of regulated and conserved land due to its natural features or the species it contains



What are captive breeding programmes?



What are captive breeding programmes?

Captive breeding programmes are plans to help ensure the survival of a species by encouraging existing members of that species to breed together in enclosures (e.g. in zoos)



How are seed banks useful for preserving biodiversity?



How are seed banks useful for preserving biodiversity?

Seed banks store seeds in regulated environments to maintain copies of important genes in the seeds which can help to prevent extinction



What tool could be used to record the abundance of different plant species in a habitat?



What tool could be used to record the abundance of different plant species in a habitat?

A quadrat



Why is it important to take lots of readings in different areas when using quadrats?



Why is it important to take lots of readings in different areas when using quadrats?

So that the sample area is accurately represented



Why does the distribution of quadrats
need to be random?



Why does the distribution of quadrats need to be random?

To prevent biased results



What do transects measure?



What do transects measure?

The change in the distribution of organisms in an area



How do you set up a transect?



How do you set up a transect?

- Transects are lines that quadrats are placed along
- They are often long tape measures laid on the ground and quadrats are placed at regular intervals along them



Describe the mark-release-recapture method



Describe the mark-release-recapture method

- Use a trap to capture some animals
- Mark the captured animals
- Release the animals
- Set up the trap again in a couple of days
- Note the number of animals in the recapture and the number of those that are marked



How do you calculate population size
from a mark-release-recapture
investigation?



How do you calculate population size from a mark-release-recapture investigation?

$$\frac{M1 \times M2}{M3}$$

M1 - Marked in the first sample

M2 - Total caught in the second sample

M3 - Marked in the second sample



If a sample of 30 mice are captured, marked and released and a sample of 30 are recaptured with only 5 marked individuals, estimate the population size



If a sample of 30 mice are captured, marked and released and a sample of 30 are recaptured with only 5 marked individuals, estimate the population size

$$\begin{array}{l} M1 = 30 \\ \frac{30 \times 30}{5} \quad M2 = 30 \\ M3 = 5 \end{array}$$

$$\text{Population size} = \frac{900}{5} = \mathbf{180}$$



What assumptions are made when using the mark-release-recapture method?



What assumptions are made when using the mark-release-recapture method?

- There are no births or deaths
- There is no migration
- The marking method does not affect the individual's ability to survive
- The marks don't come off



State 2 methods of pest control



State 2 methods of pest control

Biological control

Pesticides



What is biological control?



What is biological control?

It is a method of controlling plant pests by deliberately introducing organisms that feed on the pests to decrease the number of them



Why are trials needed before the introduction of biological control?



Why are trials needed before the introduction of biological control?

- The effect on non-target species needs to be determined
- The effectiveness of the chosen biological control method needs to be assessed

