

WJEC England Biology GCSE

7.3 - Variation and evolution

Flashcards



What is the difference between asexual reproduction and sexual reproduction?



What is the difference between asexual reproduction and sexual reproduction?

- Asexual reproduction involves mitosis to produce genetically identical copies
- Sexual reproduction involves the combination of sperm and egg cells to create a zygote



Give one advantage and one disadvantage of sexual reproduction



Give one advantage and one disadvantage of sexual reproduction

Advantage - It introduces variation

Disadvantage - It is slower and produces a limited number of offspring



Give one advantage and one disadvantage of asexual reproduction



Give one advantage and one disadvantage of asexual reproduction

Advantage - It produces lots of offspring quickly

Disadvantage - It does not introduce variation and so all offspring are susceptible to the same environmental pressures as the parents



What are the two types of variation?



What are the two types of variation?

Genetic variation and environmental variation



State 2 traits in humans caused only by genetic variation



State 2 traits in humans caused only by genetic variation

- Eye colour
- Blood type



State 2 traits in humans caused by a mix of environmental and genetic variation



State 2 traits in humans caused by a mix of environmental and genetic variation

- Height
- Weight



What is a mutation?



What is a mutation?

A random change in the genetic material of an organism



Give 3 environmental factors that can increase the chance of mutations



Give 3 environmental factors that can increase the chance of mutations

- Exposure to UV radiation
- Exposure to X-rays
- Certain chemicals, particularly those found in cigarette smoke



Define evolution



Define evolution

Evolution is a change in the genetic makeup of a population over time due to natural selection which can result in a new species being formed



Describe the process of natural selection



Describe the process of natural selection

- Populations are naturally varied due to random genetic mutations
- Some of these mutations provide a selective advantage
- These organisms survive and reproduce, passing on the successful genes



Which organisms are more likely to breed and pass on their genes?



Which organisms are more likely to breed and pass on their genes?

The individuals that are best adapted to their environment



Give 2 pieces of evidence for evolution



Give 2 pieces of evidence for evolution

- Fossils
- Antibiotic resistance



Describe how antibiotic resistance arises



Describe how antibiotic resistance arises

- A random genetic mutation causes a bacterium to become resistant to the antibiotic
- When the antibiotic is used, all the bacteria that do not have the mutation are killed
- The population containing just the resistant bacteria then begins to grow



What are the 3 main domains?



What are the 3 main domains?

Bacteria

Archaea (ancient bacteria)

Eukaryota (organisms with defined nuclei)



How were the 3 domains established?



How were the 3 domains established?

Through the analysis of different organism's genetic material



How did the theory of natural selection come about?



How did the theory of natural selection come about?

Important information about the interactions of species collected by Darwin in the Galapagos islands and Wallace by collecting organism specimens helped to develop the theory

