

# Edexcel (B) Biology A-level

## 3.2 - Natural selection

### Flashcards

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# Why does natural selection occur?



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1. Predation
2. Disease
3. Competition

All resulting in differential survival and reproduction.



Explain how natural selection results in development of new characteristics.



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- Random mutations result in new alleles.
- Some alleles give the possessor an advantage over the rest of the species, making them more likely to survive and reproduce.
- Their offspring receive the new allele, and frequency continues to increase over many generations.



What are three types of adaptation? Give examples of each.



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- Anatomical (changes to body structure) e.g. oily fur.
- Physiological (changes to bodily processes) e.g. venom production.
- Behavioural (changes to actions) e.g. hibernation.



# Define a niche.





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The role of a species within its environment. Species sharing the same niche will compete with each other.



# Define speciation.



## Define speciation.

Where a population is split and reproductively isolated, there are different selective pressures on the two groups. If the genetic makeup changes to the extent the two groups can no longer interbreed, they have become separate species.



# What is meant by allopatric speciation?



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Speciation resulting from a physical barrier e.g. river, mountain range. The environments occupied by the two groups are different, and therefore different alleles are favoured.



# What is meant by sympatric speciation?



What is meant by sympatric speciation?

Speciation resulting from a non-physical barrier e.g. a mutation that no longer allows two organisms to produce fertile offspring. Any changes in anatomy or behaviour may also prevent breeding.



# How does evolution relate to bacterial antibiotic resistance?





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Bacteria can develop mutations that make them resistant to antibiotics, which they will then pass on when they reproduce. This is an evolutionary 'race', meaning we always have to be developing new treatments.

