

Biology - Key Stage 4

# Speciation

Mrs Gibbs



**OAK**  
NATIONAL  
ACADEMY

# Independent task

- 1) What theory did Alfred Russel Wallace propose in 1858, at the same time as Charles Darwin?
- 2) What did Alfred Russel Wallace use as supporting evidence for his theory?
- 3) What other theory did Alfred Russel Wallace pioneer?



## Put the stages of speciation into the correct order

- Mutations lead to new alleles
- Speciation (populations can no longer breed to produce fertile offspring)
- Best adapted in each area survive, breed and pass alleles onto offspring
- Geographical separation
- Different environmental conditions

1.

2.

3.

4.

5.



## Exam-style question 2

It is thought that Madagascar used to be a part of Africa. Approximately 150 million years ago, Madagascar split from Africa and is now a separate island.

A species of rat only unique to Madagascar is believed to share a common ancestor with a similar species in Africa.

Suggest how a new species of rat has evolved on Madagascar. **(6)**

Event	Explanation in relation to question
Geographical separation	
Different environmental conditions	
Mutations lead to new alleles	
Those best adapted in each area survive, breed and pass alleles onto offspring.	
Speciation (can no longer breed to produce fertile offspring)	



# Exam question 3

1) The process of evolution has produced many new species.

Explain how evolution produces new species. **(6)**

*The quality of written communication will be assessed in your answer.*



## Exam question 3

2) A team of scientists are looking for new species in the Amazon jungle.

They discover an unusual beetle.

Explain what would prove that it was a new species.

**(2)**

