

## **9Ae Natural Selection**

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### **Notes:**

All characteristics vary slightly amongst the members of a species.

### **Example:**

If conditions in a habitat change, then variation in a characteristic may help some members of a species to survive better than others. Imagine a new predator moves into the area in which jack rabbits live. By chance, some jack rabbits will have slightly longer hind legs that allow them to run faster. These are the jack rabbits that are more likely to survive and reproduce. So, the next generation of jack rabbits will have slightly more rabbits with longer hind legs. This process is known as **natural selection**.

**Charles Darwin** and **Alfred Russel Wallace** both came up with the idea that if natural selection happening over and over again, over a long period of time, that causes **evolution**.

### **Course book questions:**

- 1) Genes.
- 2) **a** They were less easy to spot on the blackened buildings and trees by birds that eat them.  
  
**b** More of the pale moths were eaten, so a greater proportion of the moths that reproduced were black and their **genes** were carried into the **next generation**. Because more moths in the next generation carried the genes for 'blackness' there were more black moths.

3) **a** It has decreased because the buildings have been cleaned/factories do not produce all the smoke that they used to.

**b** The black moths are more easily seen against the paler trees and buildings and so are more likely to be eaten by the birds. So more pale moths survive and reproduce and so the next generation contains a greater proportion of pale moths.

4) Not included.

5) **a** an idea about how or why something occurs that can be tested.

**b** when there is a lot of evidence from experiments to support the hypothesis

6) **a** change in characteristics over time.

7) Not included.