

6.3.3 The understanding of genetics

AQA GCSE Biology (Higher) Question and answer notes

For more resources, visit www.mooramo.com

How to use these notes

These notes cover everything you need to know for this part of the specification. They have been written in question-answer format to make them easier for you to study from.

In order to study successfully, I recommend you do the following for each question and answer:

- Read it carefully and make sure you **understand** it.
- **Memorise** the answer.
- **Practice** applying your understanding to past exam questions.

A good way to memorise information is to use **retrieval practice**. This is when you practise retrieving information from your memory. You could do this by making a flashcard for each question with the question on one side and the answer on the other. Or you could use a flashcard app. Alternatively, use a sheet of paper to cover up the answer so you can only see the question. Try to answer the question and then check how you did.

You should practise retrieving each answer from your memory until you can do it perfectly. Even once you can retrieve the answer perfectly, your ability to retrieve it will probably fade as time passes without practising. Therefore you will need to keep going back to the questions that you have previously mastered and practising them again. However, each time you re-learn the answer, the memory will be stronger and will last longer than the time before.

Who carried out plant breeding experiments in the mid-1800s that contributed to our early understanding of genetics?

Gregor Mendel carried out plant breeding experiments in the mid-1800s that contributed to our early understanding of genetics.

Who was Gregor Mendel and how did he contribute to our understanding of genetics?

Gregor Mendel was a monk who carried out breeding experiments on plants in his monastery in the mid-1800s. He kept detailed records of how various characteristics were inherited by pea plants. Based on his calculations on this data, he worked out that the inheritance of each characteristic is determined by 'units' that are passed on to descendants unchanged.

What has happened to our understanding of genetics since Mendel's discoveries?

The importance of Mendel's discovery was not recognised until after he had died. In the late 1800s the behaviour of chromosomes was observed. Then, in the early 1900s, it was discovered that chromosomes behave in a similar way to Mendel's 'units'. This led to the idea that the 'units' are located on chromosomes. The 'units' were renamed to genes. In the mid-1900s, the structure of DNA was determined and the mechanism by which genes function was worked out.