

# 6.1.4 DNA and the genome

## AQA GCSE Biology (Higher) Question and answer notes

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### 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.

### What is DNA?

DNA is a biological molecule which contains instructions for making proteins. It is a polymer made up of two strands which are coiled around each other to form a shape called a double-helix. In eukaryotes, DNA is found in the nucleus of each cell.

### What is a genome?

The genome of an organism is the entire genetic material of that organism (in other words, it is all of that organism's DNA).

### What is genome sequencing and how has it been used with the human genome?

Genome sequencing is when scientists find out the DNA sequence of an organism's genome. The entire human genome has now been sequenced.

**What are the medical benefits of sequencing the human genome?**

Sequencing the human genome allows scientists to:

- Search for genes linked to particular diseases
- Understand and treat inherited disorders

**Besides the medical benefit, what other benefit does the sequencing of the human genome have?**

Sequencing the human genome allows scientists to trace past human migration patterns.