

6.4.1 Classification of living organisms

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.

What is classification?

Classification is the process of sorting living organisms into groups. This can be done based on their structure and characteristics or based on how closely related they are.

Who developed the traditional system of classifying organisms? What is this system called?

Carl Linnaeus developed the traditional system of classifying organisms. This system is called the Linnaean system.

How are organisms grouped within the Linnaean system of classification?

The Linnaean system of classification involves the following levels of classification: kingdom, phylum, class, order, family, genus and species. Individual organisms are grouped in species, species are grouped into genera, genera into families and so on.

How are organisms named in the Linnaean system of classification?

In the Linnaean system of classification, organisms are named using the binomial system. In this system, each organism's name is its genus name followed by its species name.

What has caused classification to change since Linnaeus first developed his system?

The following factors have caused classification to change since Linnaeus first developed his system:

- Microscopes have improved, allowing scientists to see organisms' internal structures in more detail.
- Our understanding of biochemical processes has improved.
- We have discovered DNA and genetics.

How are organisms classified today?

Today, the three-domain system is used to classify organisms. In this system, organisms are grouped into the following three domains: bacteria, archaea and eukaryota. Bacteria are true bacteria, archaea are primitive bacteria that often live in extreme environments, and eukaryota are the eukaryotes (plants, fungi, animals and protists).

How did the three-domain system of classification come about?

The three-domain system of classification was developed by a scientist called Carl Woese. He developed it on the basis of evidence from chemical analysis.

What is an evolutionary tree?

An evolutionary tree is a diagram used to show how different organisms are related to each other.