

# 1.1.1 Eukaryotes and prokaryotes

## 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 are cells?

Cells are the basic building blocks of all living organisms.

### What are organisms that are made up of one cell called?

Organisms that are made up of one cell are called unicellular organisms.

### What are organisms that are made up of multiple cells called?

Organisms that are made up of multiple cells are called multicellular organisms.

### What are sub-cellular structures?

Sub-cellular structures are the structures that are found within cells.

**What are prokaryotic cells?**

Prokaryotic cells are small, simple cells that do not have a nucleus or many other sub-cellular structures.

**What are eukaryotic cells?**

Eukaryotic cells are large, complex cells that have a nucleus and many other sub-cellular structures.

**What are prokaryotes? Which groups of organisms are prokaryotes?**

Prokaryotes are organisms that have prokaryotic cells. Bacteria and archaea are prokaryotes.

**What are eukaryotes? Which groups of organisms are eukaryotes?**

Eukaryotes are organisms that have eukaryotic cells. Plants, Animals, Algae and Fungi are eukaryotes.

**What features do all eukaryotic cells share?**

Eukaryotic cells are large cells with their DNA enclosed in a nucleus. They all have a cell membrane, cytoplasm, ribosomes and mitochondria.

**What features do all prokaryotic cells share?**

Prokaryotic cells are small cells. Their DNA is loose in the cytoplasm (not in a nucleus). They all have a cell membrane, cytoplasm, cell wall and ribosomes.

**What is the DNA like in a prokaryotic cell?**

Prokaryotic cells usually have one large loop of DNA called a chromosome. They often also have small loops of DNA called plasmids.

**What are centimetres and what are they abbreviated to?**

A centimetre (abbreviated to cm) is  $1 \times 10^{-2}$ m.

**What are millimetres and what are they abbreviated to?**

A millimetre (abbreviated to mm) is  $1 \times 10^{-3}$ m.

**What are micrometres and what are they abbreviated to?**

A micrometre (abbreviated to  $\mu\text{m}$ ) is  $1 \times 10^{-6}$ m.

**What are nanometres and what are they abbreviated to?**

A nanometre (abbreviated to nm) is  $1 \times 10^{-9}$ m.

**How do you convert between units of measurement?**

To convert from a smaller unit to a bigger unit, divide by the number of times bigger the new unit is.

To convert from a bigger unit to a smaller unit, multiply by the number of times smaller the new unit is.