

# Classification GCSE Biology: GCSE Biology

## CONTENTS:

1. Introduction
2. What is the Classification GCSE Biology?
3. Need for Classification of Animals
4. The Linnaean Classification System
5. Five Kingdom Classification
6. The Three-domain System of Classification
7. Binomial Nomenclature
8. FAQs

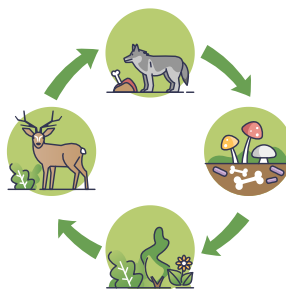
## 1. Introduction

- **Classification GCSE Biology** helps understand how organisms are organized.
- On the planet Earth, **millions of species** coexist with humans.
- Some of these species serve various **important** and **irreplaceable roles** in the **functioning of the ecosystem**.
- Therefore, it is **necessary** to **learn** about them.
- To make it easier, various systems of classification have been put forth.

### Real -life uses:



Agriculture importance



To understand evolutionary relationships



Medicine development

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## 2. What is Classification GCSE Biology?

- For their **easy identification**, the organisms have been **categorized** based on their **characteristics** and **structure**.
- The classification uses **sections** and their **smaller sub-sections**.
- This is to **segregate** them from **big groups** into single **individuals**.
- **Big groups** have the **highest number** of organisms, but only a **few similarities**.
- **Small groups** have the **lowest number** of organisms, but have **more similarities**.
- Various classification systems are described in this blog “Classification GCSE Biology.”

## 3. Need for Classification of Animals

- Due to classification, it makes it **easier** for us to **study** them.
- **Unknown organisms** can be **identified** by **comparing features** with already known organisms.
- **Similarities** and **differences** can be **easily understood**.
- Grouping organisms with similar features together may show **evolutionary relationships**.
- Organisms are called with different names worldwide. Classification **avoids confusion** caused due to this.

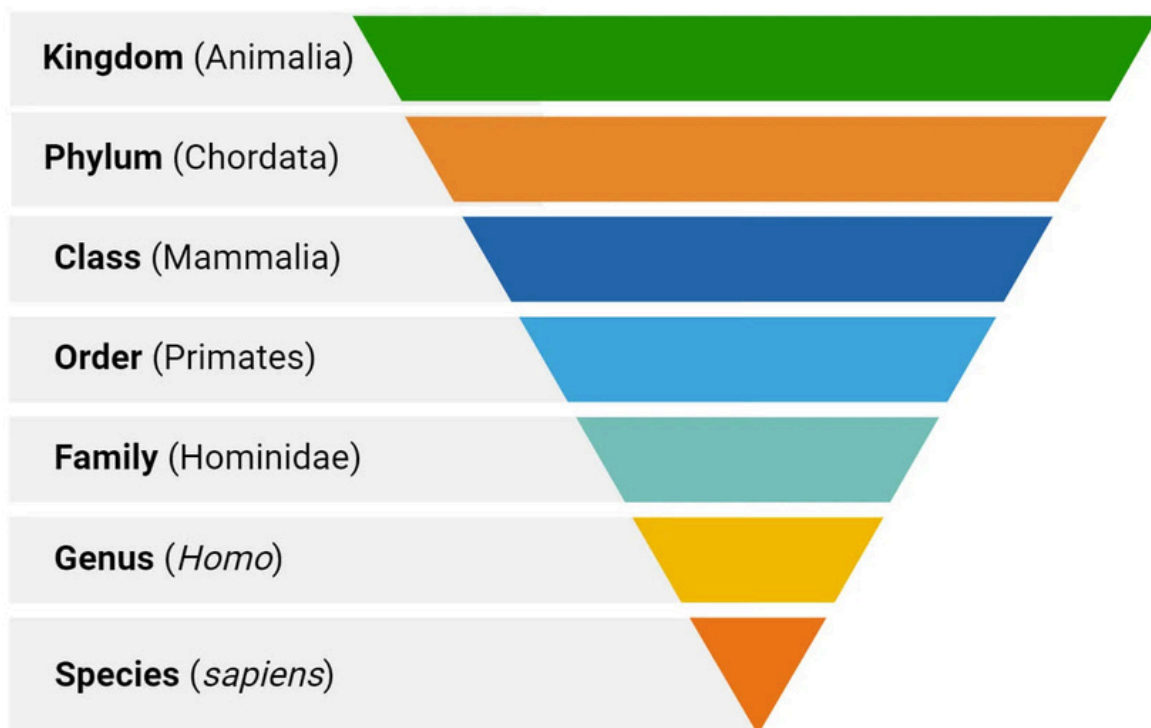
## 4. The Linnaean Classification System

- **Carl Linnaeus**, the father of modern taxonomy, developed a classification system.
- This system follows a **tiered categorization**, one group following another.
- It begins with broadly classifying living organisms into five kingdoms.
- The five kingdom classification includes **animals, plants, fungi, protists, and prokaryotes**.

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- **Kingdoms** are followed by **Phylum**, **Class**, **Order**, **Family**, **Genus**, and **Species**.

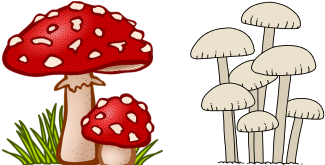
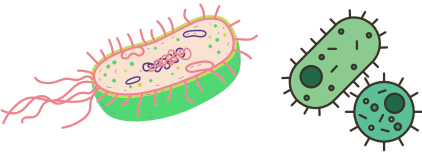
## Linnaeus System of Classification



## 5. Five Kingdom Classification

- This classification divides organisms into **five distinct groups**, known as **kingdoms**.
- Each kingdom consists of **organisms with similarities**.
- Out of all the tiers in the Linnaean classification, this group has the **lowest number of common features**.
- Features with examples of the five kingdoms in Classification GCSE Biology are given below:

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| Kingdom     | Examples                                                                            | Features                                                                                                        |
|-------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Animals     |    | Multicellular, cells organized as tissues and organs, with nuclei and no cell walls                             |
| Plants      |    | Multicellular, cells organized as tissues and organs, with nuclei, cell walls & chloroplasts for photosynthesis |
| Fungi       |  | Multicellular, present & feed on dead matter, cells with nuclei & cell walls                                    |
| Protists    |  | Mostly unicellular with nuclei and a few with cell walls                                                        |
| Prokaryotes |  | unicellular, no nuclei, cell walls present & flexible                                                           |

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## 6. The Three-domain System of Classification

- In 1990, Carl Woese gave a three-domain system to classify living organisms.
- **Archaea**, **Bacteria**, and **Eukaryota** are three domains of this system.

| Domains   | Examples                                         | Features                                                                                          |
|-----------|--------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Archaea   | <i>Methanobrevibacter smithii</i> (in human gut) | Prokaryotic cells with free genetic material in cytoplasm, found in extreme conditions            |
| Bacteria  | <i>E.coli</i> , <i>Lactobacillus</i>             | Prokaryotic cells with free genetic material in cytoplasm, no membrane-bound organelles           |
| Eukaryota | Plants, animals, fungi                           | Eukaryotic cells, genetic material in nucleus, membrane-bound organelles, single or multicellular |

## 7. Binomial Nomenclature

- Each organism's name has two parts: **genus & species**
- **Genus name** is written **first**, starting with a **capital letter**.
- **Species name** is written **second**, starting with a **lower-case letter**.
- Both written in **Italics** or **underlined separately** when **handwritten**.
- For example, *Homo sapiens* (Humans), & *Mangifera indica* (mango).

# Classification GCSE Biology: GCSE Biology

## 8. FAQs

### 1. What is classification in biology?

Classification is the organization of living organisms into groups based on their similar characteristics.

### 2. Who developed the modern classification system?

Carl Linnaeus developed the modern classification system.

### 3. What is Binomial nomenclature?

Binomial nomenclature is a system of naming organisms using two names: Genus & Species

### 4. What are the main classification groups?

Kingdoms, Phylum, Class, Order, Family, Genus, and Species are included in it.

### 5. What are the three domains of life?

The three domains of life are: **Archaea**, **Bacteria**, and **Eukaryota**.

### 6. What is a species?

A species is a group of organisms that can breed together to produce fertile offspring.

### 7. Why are scientific names used instead of common names?

Scientific names are used instead of common names, as they reduce confusion between different languages and are used worldwide.

### 8. How is the classification system organized today?

Modern classification uses: Physical characteristics, Genetic information (DNA), Evolutionary relationships.