

CLASSIFICATION 2 - Form 3 Biology Notes

- [General Principles of Classification](#)
- [Binomial Nomenclature](#)
- [General Characteristics of Kingdoms](#)
 - [Kingdom Monera](#)
 - [Kingdom Protocista](#)
 - [Kingdom Fungi](#)
- [Kingdom Plantae](#)
 - [Division Bryophyta](#)
 - [Division Pteridophyta](#)
 - [Division Spermatophyta](#)
- [Kingdom Animalia](#)
 - [Phylum Arthropoda](#)
 - [Phylum Chordata](#)
- [Construction and Use of Dichotomous Keys](#)
 - [Rules Used to Construct a Dichotomous Key](#)
 - [Some Common Features Used for Identification](#)
- [Practical Activities](#)
 - [To Examine Bryophyta](#)
 - [To Examine Pteridophyta](#)
 - [To Examine Spermatophyta](#)
 - [Examination of Arthropoda](#)
 - [Examination of Chordata](#)

[General Principles of Classification](#)

- Classification is the science that puts organisms into distinct groups to make their study easy and systematic.
- Modern scientific classification is based on structure and functions.
- Organisms with similar anatomical and morphological characteristics are placed in one group while those with different structures are grouped separately.
- Modern studies in genetics and cell biochemistry are used to give additional help in classifying organisms.
- There are seven major taxonomic groups.
- The kingdom is the largest group.
- Others are phylum (division for plants) class, order, family, genus and species, the smallest.

[Binomial Nomenclature](#)

- Living organisms are named using Latin or Latinised names.
- Every organism has two names.
- This double naming is called **binomial nomenclature**.
- This system of naming was devised by Carolus Linnaeus in the 18 th Century.
- The first name is the generic name - the name of the genus.
- The second name is the name of the species.
- The generic name starts with a capital letter while that of the species starts with a small letter.
- The names are written in italics or are underlined in manuscripts.

Examples:

Bean = *Phaseolus vulgaris*.

- *Phaseolus* is the generic name,
- *vulgaris* is specific name.

Dog = *Canis familiaris*.

- *Canis* is the generic name
- *familiaris* the specific name.

General Characteristics of Kingdoms

Organisms are classified into five kingdoms.

- Monera,
- Protoctista,
- Fungi,
- Plantae
- Animalia.

Viruses do not fit neatly into any of the above kingdoms.

- They are simple and not cellular.
- They are metabolically inactive outside the host cell.
- Most of them can be crystallised like chemical molecules.
- Therefore they do not exhibit the characteristics of living organisms.

Characteristic	Monera	Protoctista	Fungi	Plantae	Animalia
Cell type	Prokaryotic	Eucaryotic	Eucaryotic	Eucaryotic	Eucaryotic
Unicellular Multicellular	Unicellular	Unicellular and multicellular	Unicellular and multicellular	Multicellular	Multicellular
Mode of Feeding	Autotrophic or heterotrophic by absorption	Autotrophic or heterotrophic by absorption or phagocytosis	Heterotrophism by absorption	Autotrophism	Heterotrophic by ingestion
Reproduction	Asexual by binary fission	Asexual binary fission fragmentation, Sporulation	Asexual fission Fragmentation sporulation	Asexual by sporulation, and fragmentation, Sexual	Sexual

Kingdom Monera

General Characteristics

- Unicellular and microscopic
- Some single cells ,others colonial
- Nuclear material not enclosed within nuclear membrane-prokaryotic
- Have cell wall but not of cellulose.
- Have few organelles which are not membrane bound
- Mitochondria absent
- Mostly heterotrophic, feeding saprotrophically or parasitically,some are autotrophic.
- Reproduction mostly asexual through binary fission
- Most of them are anaerobes but others are aerobes
- Most move by flagella
- Examples include *Escherichia coli*, *Vibrio cholerae* and *Clostridium tetani*.