▶ Video explanation (YouTube Short)

The Living World: Chapter Introduction

1. What is "living"?

A mule eats and grows but cannot reproduce, yet it is alive. So some common features of life are not **defining** features (found in all living things and in no non-living thing).

Feature	Defining?	Reason
Growth	No	Mountains, boulders and sand mounds also grow, by accumulation from outside; living things grow from inside
Reproduction	No	Mules, sterile worker bees and infertile couples do not reproduce
Metabolism	Yes	The sum of all chemical reactions in the body; no non-living object shows it
Cellular organisation	Yes	All living organisms are made of cells
Consciousness	Yes	Living organisms sense and respond to their surroundings

2. Biodiversity

About **1.7–1.8 million species** have been described so far. This variety of living organisms is **biodiversity**.

3. Why scientific names?

One plant has different local names (aam in Hindi, mango in English). Scientists need one name for each organism that is the same everywhere.

Binomial nomenclature (Carolus Linnaeus): every organism gets two names, the **genus** and the **specific epithet**.
Mango: *Mangifera indica* · Human: *Homo sapiens*

Rules: names are in Latin (or Latinised) and printed in italics (underlined separately when handwritten); the genus starts with a capital letter, the specific epithet with a small letter; the author's name may follow in abbreviated form.

4. Taxonomic hierarchy

Organisms are placed in a hierarchy of categories (ranks):

Kingdom → Phylum (Division for plants) → Class → Order → Family → Genus → Species

From kingdom to species, the organisms in a group share more and more characters. **Species** is the basic unit.

Solved example. Human: Kingdom Animalia, Phylum Chordata, Class Mammalia, Order Primata, Family Hominidae, Genus *Homo*, Species *sapiens*.

Key takeaways

- Metabolism, cellular organisation and consciousness define life; growth and reproduction do not.
- About 1.7–1.8 million species are described.
- Binomial nomenclature: genus + specific epithet (Linnaeus).
- Kingdom → phylum → class → order → family → genus → species.

Practice questions (CBSE style)

1. (MCQ) Which is a defining property of life? (a) growth (b) reproduction (c) metabolism (d) movement
2. (MCQ) Binomial nomenclature was given by (a) Darwin (b) Linnaeus (c) Mendel (d) Hooke
3. (Very short) In *Mangifera indica*, which word is the genus?
4. (Very short) Arrange: order, kingdom, species, family.
5. (Short) Why is growth not a defining feature of living organisms?
6. (Short) Write two rules for writing scientific names.
7. (Application) A sterile worker bee cannot reproduce. Is it living? Explain.
8. (Application) Find the mistake: "homo Sapiens".

Answer key

1. (c) metabolism.
2. (b) Linnaeus.
3. *Mangifera*.
4. Kingdom → order → family → species.
5. Non-living masses also grow (by accumulation from outside), so growth is not unique to life.
6. Two words, genus capitalised and specific epithet in small letters; printed in italics or underlined separately when handwritten.
7. Yes: it shows metabolism, cellular organisation and consciousness; reproduction is not a defining feature.
8. The genus must start with a capital letter and the epithet with a small letter: *Homo sapiens*.

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