

BIOLOGY • CLASS 12

12

CHAPTER

Ecosystem

CHAPTER NOTES

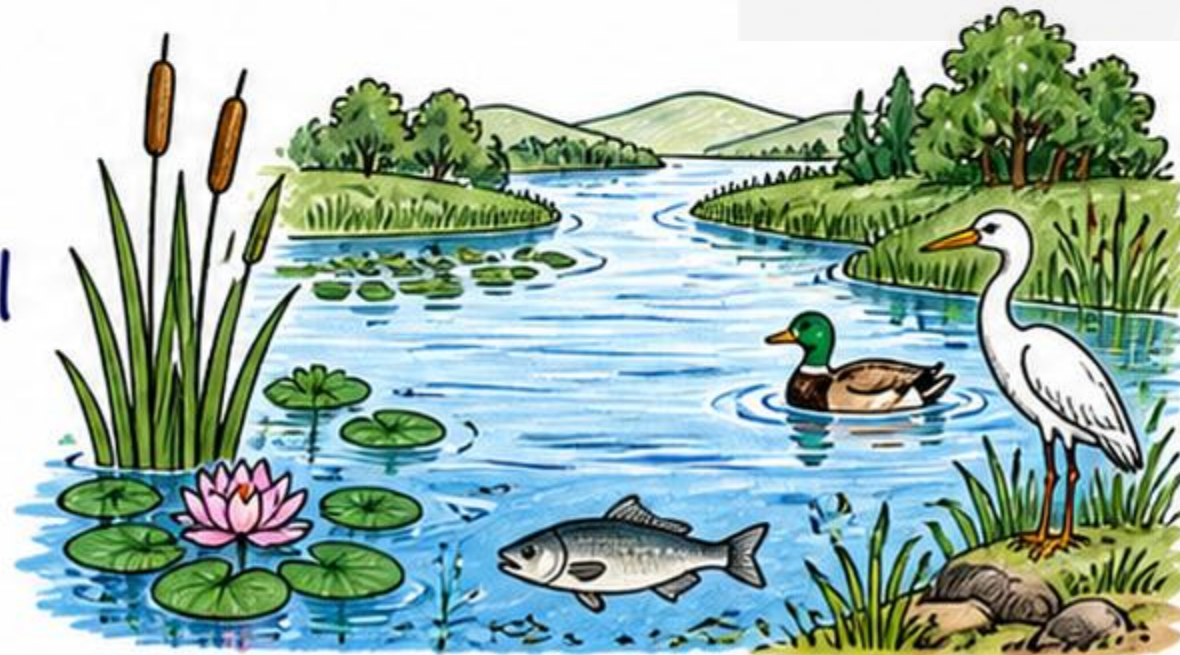


ECOSYSTEM: MEANING & TYPES

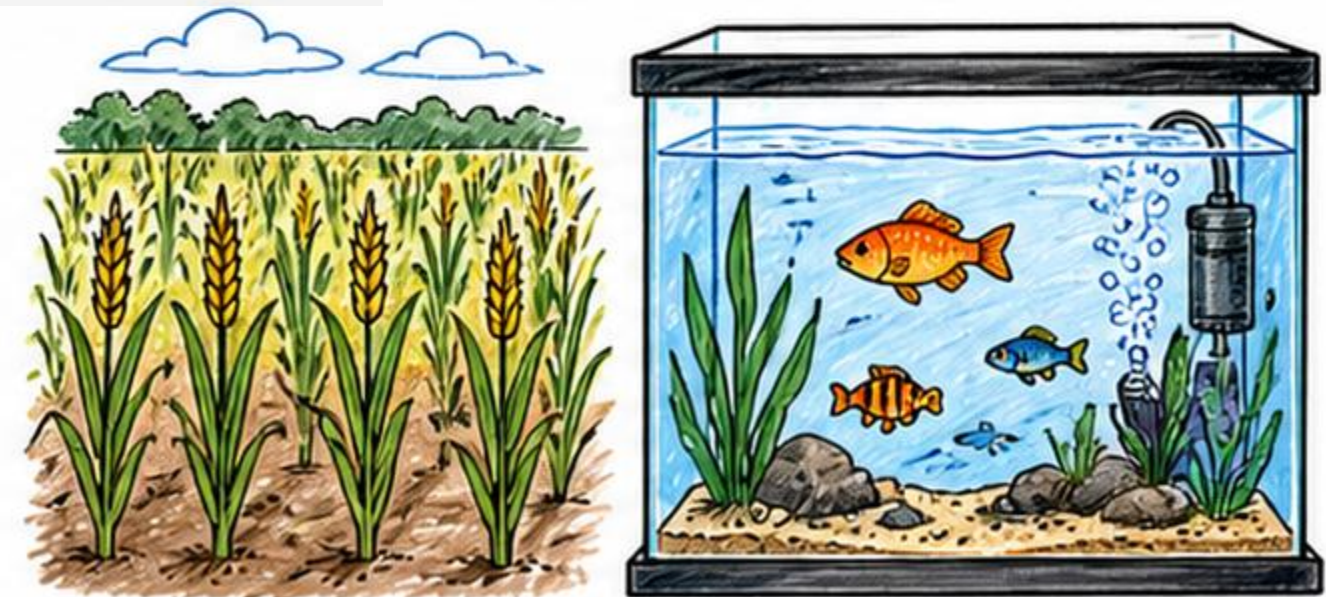
- An ecosystem is a functional unit of nature.
- Living organisms interact with one another and with the physical environment.
- Size may range from a small pond to a large forest or sea.
- The biosphere is the global ecosystem — a composite of all local ecosystems.



TERRESTRIAL — forest, grassland, desert



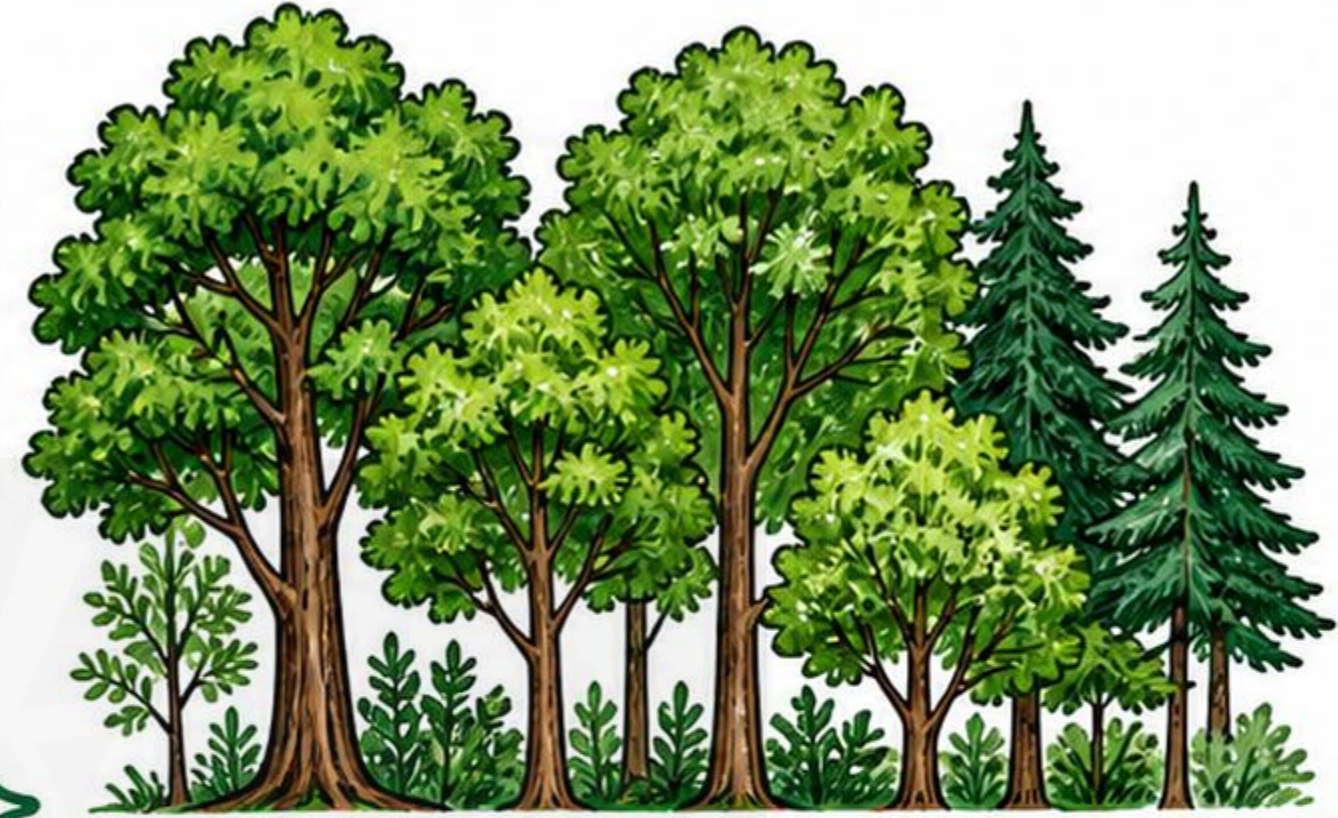
AQUATIC — pond, lake, wetland, river, estuary



MAN-MADE — crop field, aquarium

ECOSYSTEM STRUCTURE

- Abiotic components: air, water, soil, light, temperature and inorganic substances.
- Biotic components: producers, consumers and decomposers.
- Species composition = identification and enumeration of plant and animal species.
- Stratification = vertical distribution of species at different levels.



TOP —
TREES



MIDDLE —
SHRUBS



BOTTOM —
HERBS &
GRASSES

FOUR FUNCTIONS OF AN ECOSYSTEM

1. PRODUCTIVITY –
input of organic
matter

2. DECOMPOSITION –
breakdown and
recycling

3. ENERGY FLOW –
transfer through
food chains/webs

4. NUTRIENT CYCLING –
repeated reuse
of nutrients



INPUT → TRANSFER → OUTPUT

These processes make the ecosystem function as one unit.

POND ECOSYSTEM: COMPONENTS



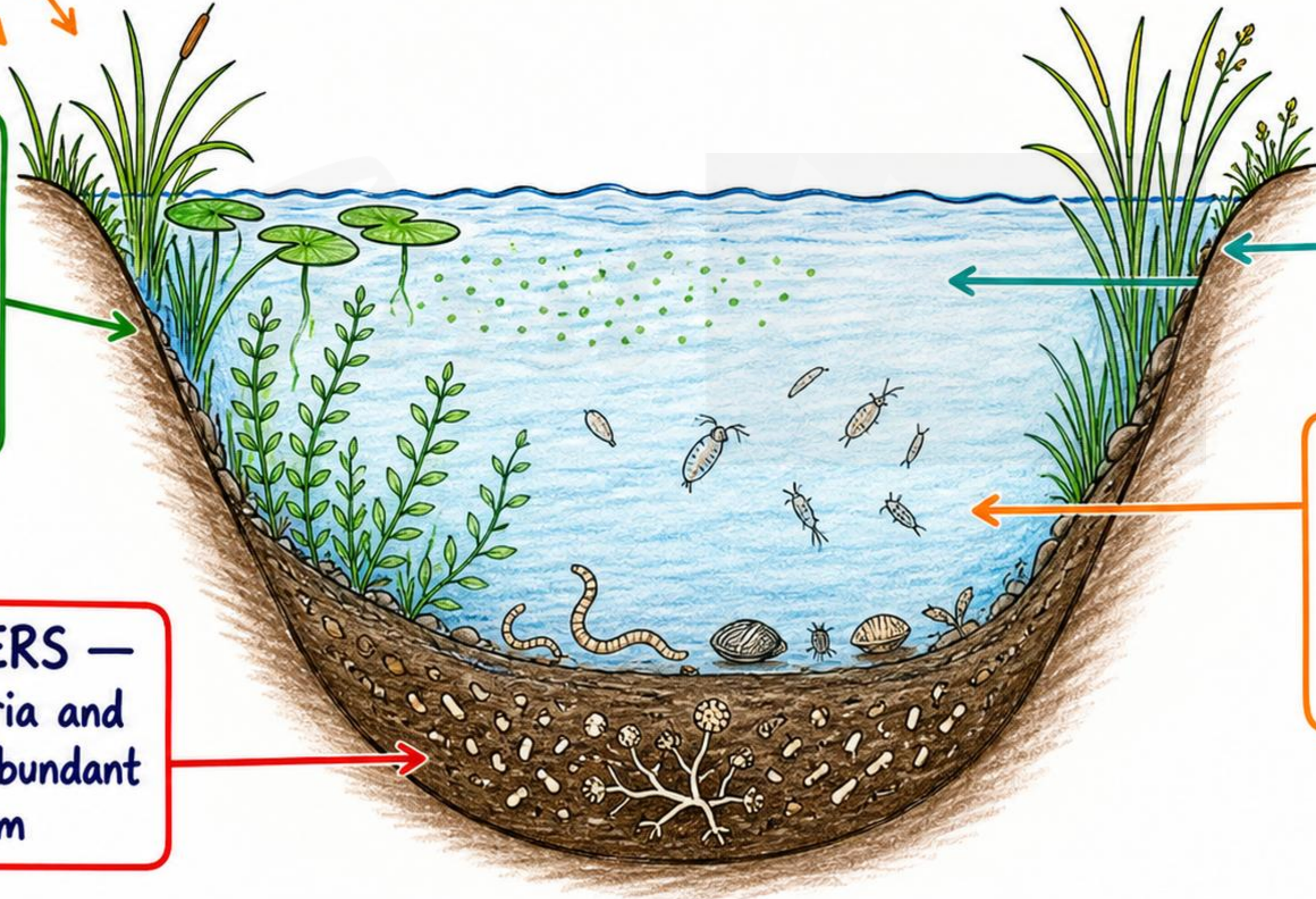
Solar input, temperature and day-length regulate pond functioning.

PRODUCERS —
phytoplankton,
algae, floating,
submerged and
marginal plants

ABIOTIC —
water;
dissolved inorganic
and organic
substances;
bottom soil

DECOMPOSERS —
fungi, bacteria and
flagellates, abundant
at the bottom

CONSUMERS —
zooplankton,
free-swimming
and bottom-dwelling
animals





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