

Characteristics Of Living Organisms

The 7 Characteristics for organism to be classified as living organism

Remember **MRS GREN** for remembering all 7.

M - Movement: Ability to move, e.g. bending, walking

R - Respiration: Ability to use energy by breaking down nutrient molecules

S - Sensitivity: Ability to sense and respond to changes in surroundings (stimuli)

G - Growth: Ability to develop with time

R - Reproduction: Ability to reproduce fertile offspring of the same kind

E - Excretion: Ability to remove metabolic waste, excess materials, and toxins from body

N - Nutrition: Ability to take in materials for energy

The Classification System

Classifying organisms into an internationally recognizable system until each organism can be separately recognized by a unique name. Organism classification is done by sequencing DNA bases.

King Phillip Came Over For Good Soup.

K - Kingdom

P - Phylum

C - Class

O - Order

F - Family

G - Genus

S - Species

The name of organism is written as Genus *species* with Genus starting from capital letter and species as italic.

Example: *Homo sapiens*

5 Main Kingdoms

1. **Animal** Kingdom
2. **Plant** Kingdom
3. **Fungus** Kingdom
4. **Prokaryote** Kingdom
5. **Protocist** Kingdom

Basic features are:

Animal:

- E.g. Lion
- Multicellular, no cell wall, no chlorophyll, have nucleus

Plant

- E.g. Money plant
- Multicellular, cell wall (cellulose), chlorophyll, have nucleus

Fungus

- E.g. Yeast
- Multicellular, cell wall (chitin), no chlorophyll, have nucleus

Prokaryote

- E.g. Bacteria
- Unicellular, cell wall (peptidoglycan), no chlorophyll, no nucleus or membranes

Protocist

- E.g. Amoeba
- Unicellular, cell wall, chlorophyll sometimes present, nucleus

Viruses are **not** classified as living organisms, but they have a protein coat and genetic

material.

Organism features

Vertebrates

Fish:

- scales
- fins
- eggs in water
- gills
- simple eyes

Amphibians:

- Moist skin
- webbed feet
- eggs in water
- 4 limbs

Reptiles:

- Dry skin
- Scales
- 4 legs (except snake)
- Shelled eggs on land

Birds:

- feathers
- wings
- egg with shell

Mammals:

- fur
- 4 limbs
- live young

Invertebrates

Insects:



Sourced from: <https://freeexamacademy.com>

- 3 pairs of legs
- head, thorax, abdomen
- one pair of compound eyes
- a pair of antennae
- may have wings

Arachnids:

- 4 pairs of legs
- cephalothorax & abdomen
- several pairs of simple eyes

Crustaceans:

- 5 pairs of legs
- cephalothorax & abdomen
- two pairs of antennae
- compound eyes

Arachnids:

- 10/10+ pairs of legs
- body has head, not obviously divided into thorax and abdomen
- simple eyes
- a pair of antennae

Ferns vs Flowering Plants

1. **Ferns** disperse via spores while **flowering plants** disperse via seeds
2. **Ferns** do not need pollen while **flowering plants** need them

Sourced from: <https://freeexamacademy.com>

Dichotomous keys:

They are keys used with simple yes no questions to classify an organism.

E.g. for classifying a fly

1. Does it have wings: Yes → go to 2, No → go to 3
2. One pair of wings: Yes → A, No → B
3. 3 pairs of legs: Yes → C, No → D

Since a fly has wings, and has 2 pairs of wings, B shows a fly.