

# Characteristics of Amphibia



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1. Aquatic or semiaquatic (freshwater), air and water breathing, carnivorous, cold-blooded, oviparous, tetrapod vertebrates.
2. Head distinct, trunk elongated. Neck and tail may be present or absent.
3. Limbs usually 2 pairs (tetrapod), some limbless. Toes 4-5 (pentadactyle) or less. Paired fins absent. Median fins, if present, without fin rays.
4. Skin soft, moist and glandular. Pigment cells (chromatophores) present.
5. Exoskeleton absent. Digits clawless. Some with concealed dermal scales.
6. Endoskeleton mostly bony. Notochord does not persist. Skull with 2 occipital condyles.

7. Mouth large. Upper or both jaws with small homodont teeth. Tongue often protrusible. Alimentary canal terminates into cloaca.
8. Respiration by lungs, skin and mouth lining.
9. Larvae with external gills which may persist in some aquatic adults.
10. Heart 3-chambered (2 auricles+1 ventricle). Erythrocytes large, oval and nucleated.
11. Body temperature variable (poikilothermous).
12. Kidneys mesonephric. Urinary bladder large. Urinary ducts open into cloaca. Excretion ureotelic.

13. Brain poorly developed. Cranial nerves 10 pairs
14. Nostrils connected to buccal cavity. Larval forms and some aquatic adults with lateral line system.
15. Sexes separate. Male without copulatory organ. Gonoducts open into cloaca. Fertilization mostly external. Females mostly oviparous.
16. Development indirect. Cleavage holoblastic but unequal. No extra-embryonic membranes. Larva a tadpole which metamorphoses into adult.

Thank you!

