

Animal Classification

sorting the animal kingdom by body plan, and the characters that place a new animal

Why classify, and on what *

- **classification** groups organisms by shared characters, so that a vast variety becomes manageable and relationships become visible
- the **hierarchy** runs kingdom, phylum, class, order, family, genus, **species**, each level narrower than the one before
- **species** is the basic unit: organisms that can interbreed and produce fertile offspring
- **binomial nomenclature**, from Linnaeus, gives every organism a **two word Latin name**: genus first with a capital, species second in lower case
- so the human is **Homo sapiens**, and the name is written in italics or underlined
- the characters used are **body plan** features that do not change with the environment, rather than habitat or colour

Kingdom _____

Family _____

Genus _____

Species _____



four rungs of the hierarchy, the narrowest at the bottom and the widest at the top: each step up gathers more organisms together and demands fewer shared characters of them

The characters that do the sorting *

- **symmetry**: **asymmetrical** with no plan, **radial** with many planes through a centre, or **bilateral** with one plane giving mirror halves
- **germ layers**: **diploblastic** animals have two layers and **triploblastic** have three, the third allowing complex organs
- **coelom**: a true body cavity between the gut and the body wall. **Coelomate** animals have one, **acoelomate** do not
- the coelom matters because it **lets organs move independently** of the body wall
- **notochord**: a stiff supporting rod along the back. Its presence divides the whole kingdom into **chordates** and **non chordates**
- **segmentation** is the repeated division of the body into similar units, seen first in the annelids

The non chordate phyla

Phylum	Marker	Example
Porifera	pores, no true tissues	sponge
Coelenterata	radial, diploblastic, stinging cells	hydra, jellyfish
Platyhelminthes	flat body, no coelom	tapeworm
Aschelminthes	round body, false coelom	roundworm
Annelida	true segmentation	earthworm
Arthropoda	jointed legs, exoskeleton	insects, crab
Mollusca	soft body, often a shell	snail, octopus
Echinodermata	spiny skin, water vascular system	starfish

Arthropoda is the largest phylum in the whole animal kingdom, and Echinodermata is the odd one out among non chordates in being radially symmetrical as an adult while its larva is bilateral

