

Phylum Arthropoda

General Characteristics of phylum shared by members of all subphyla:

- chitinous, hardened exoskeleton that must be shed to grow
- obvious segmentation (metamerism)
- paired, jointed appendages on many segments

Subphylum: Trilobita

body plan: head, thorax, pygidium
compound eyes
antennae
mandibles for feeding?
branched (biramous) appendages
respiration by gills?
able to roll up like pill bugs
once most common arthropod, now completely extinct

Subphylum: Myriopoda (centipedes, millipedes)

body plan: head, long trunk
lack compound eyes
single pair of antennae
mandibles for feeding
unbranched legs on most segments
respiration by tracheae

Major Groups:

Chilopoda (centipedes)
Diplopoda (millipedes)

Subphylum Chelicerata: (spiders, horseshoe crab, scorpions, mites, ticks)

body plan: cephalothorax, abdomen
most lack compound eyes
no antennae
chelicerae for feeding (no mandibles)
four pairs of unbranched legs
respiration by gills, book lungs, book gills or tracheae

Major Classes:

Merostomata (horseshoe crabs)
Arachnida (spiders, scorpions, mites & ticks)
Pycnogonida (sea spiders)

Subphylum Crustacea: (crabs, shrimp, crayfish, barnacles, pill bugs, water fleas)

body plan: cephalothorax, abdomen, tail
compound eyes
two pairs of antennae
mandibles for feeding
branched (biramous) appendages
respiration by gills
only subphylum that is mostly aquatic

Major Classes:

Malacostraca (shrimp, crab, pill bugs, amphipods)
Branchiopoda (water fleas, brine shrimp, fairy shrimp)
Maxillipoda (copepods, seed shrimp, barnacles)

Subphylum: Hexapoda (beetles, flies, bugs, crickets, mayflies, dragonflies, moths, wasps, etc.)

body plan: head, thorax, abdomen
compound eyes
single pair of antennae
mandibles for feeding
three pairs of unbranched legs
two pairs of wings
respiration by tracheae
includes only invertebrates that can fly

Major Groups:

Apterygota (wingless insects; springtails, silverfish)
Pterygota (flying insects; dragonflies, butterflies, etc)