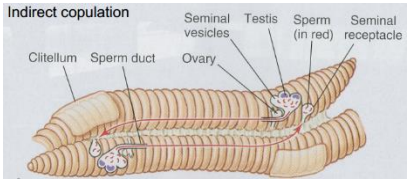
Oligochaetes – earthworms



- Less differentiation of head region
- Reduced sense organs
- No parapodia
- Clitellum (always visible) – thickened non-segmented part of the body that secretes a viscid sac in which the eggs are deposited
- Each segment has 4 pairs of chaetae (chitinous bristle)
- Best developed septa & have sphincters around septa to control the flow of fluid
- Move by Peristalsis & use coelom as a hydrostatic skeleton
- Contract & shorten longitudinal and circular muscles for locomotion
- Hermaphrodites & during copulation there is mutual sperm transfer
- Clitellum secretes mucous egg sac (slime tube) & the clitellum secretes a chitin-like material to form a cocoon – fertilisation with the cocoon

Hirudinea – leeches

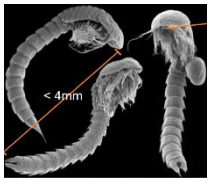
- Fixed number of segments
- Anterior & Posterior suckers
- No parapodia or chaetae
- Loss of structure is related to their mode of locomotion
- Challenges – finding hosts, accessing blood, evading host defences and keeping the hosts blood flowing
- Used to treat blood clots

Echidnodermata – sea stars to sea cucumbers etc

- Deuterostome Development – cleavage is radial & indeterminate, coelom formation has folds/outpocketings of the archenteron and the blastopore becomes the anus
- The larvae have bilateral symmetry, the radial symmetry of adults is secondary
- 6 Echidnodermata classes

Brachiopoda –

- Presence of gills on many appendages
- Some have carapace covering body & legs
- E.g. Daphnia
- Optional dormant stage in life cycle



Cephalocarida –

- Blind
- Most primitive of all crustaceans

Maxillopoda – barnacles, copepods & fish lice

Ostracoda –

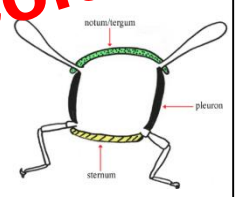
- Two valves

Remipedia –

- Live underground in saline aquifers
- Blind

Malacostraca – crabs, lobster, shrimp & woodlice

Hexapods – insect



- 3 pairs of legs
- 2 pairs of wings on the thorax – longitudinal and cross veins & evolution of sclerites enables insects to fold their wings over their abdomen
- A pair of compound eyes
- Tracheal system for gas exchange – spiracles lead to trachea
- Mouth parts – labrum, mandible (cutting & tearing), maxilla (handling food), maxillary palp, labium (handling food) & labial palp
- Mouth adaptations – piercing-sucking, siphoning, knifelike & sponging
- 3 segments of thorax – pro, mesa & meta (thorax)

- Legs attach to the pleuron
- Heart is a tube with openings called ostia
- Malpighian tubules lie in the hemocoel for excretion & water balance
- Genitals – females (spermatheca & bursa copulatrix) & males (seminal vesicle & accessory glands)
- Copulation – inflatable penis deposits spermatophore inside female, sperm is released & stored in the spermathecae
- Eggs – coated with shell-like membrane & laid through ovipositor