

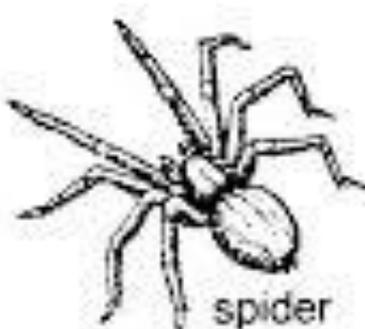


článkonožce

Phylum Arthropods



bee



spider



Examples of
some arthropods



crab

General characteristics

- *arthro* – joint, *pod* – leg
- 10 milion species (10^{18} individuals)
- all share similar development pattern and common body plan:
 - **jointed appendage**
 - **segmented body** (**head , thorax, abdomen**)
 - **exoskeleton** (made of chitin)
 - brain located in dorsal part of head
 - ventral nerv cord
 - opened circulation system

General characteristics

Includes 4 main classes:

Trilobita (trilobites)

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

Crustacea (crabs, lobsters, shrimps)

Uniramia (millipedes, centipedes and all insect)

Trilobita (trilobity)



Trilobit

Chelicerata (klepietkavce)



- special mouthparts
called **chelicera**

Crustacea (kôrovce)

FRESHWATER (microscopic forms)



Daphnia



Cyclops

TERRESTRIAL



extended

"Pill bug"
(*Porcellio
scaber*) 3x

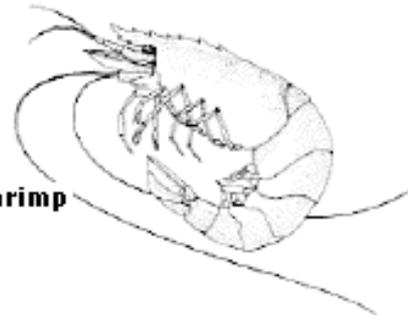


curled up

MARINE



Lobster



Shrimp



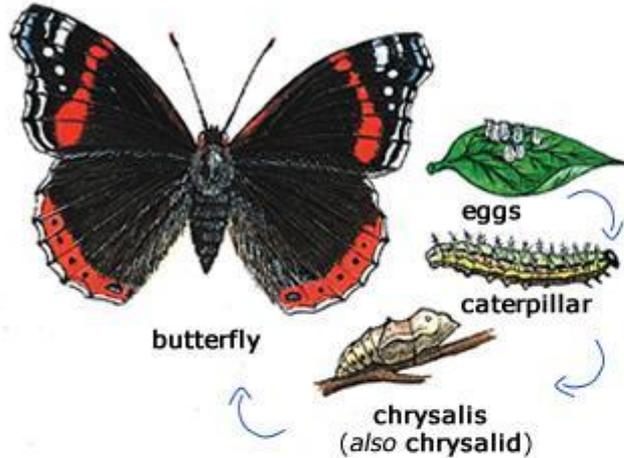
Crab



Barnacles

Uniramia

Insects



butterfly

eggs

caterpillar

chrysalis
(also chrysalid)



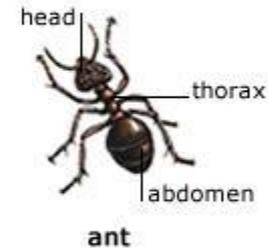
moth



flea



dragonfly



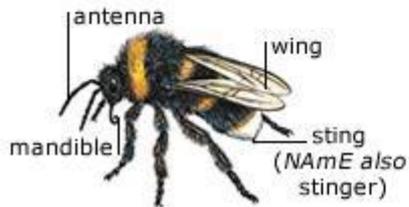
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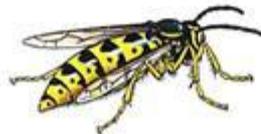
mosquito



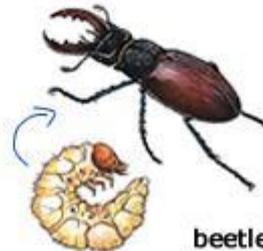
ladybird (BrE)
ladybug (NA ME)



bumblebee



wasp



beetle

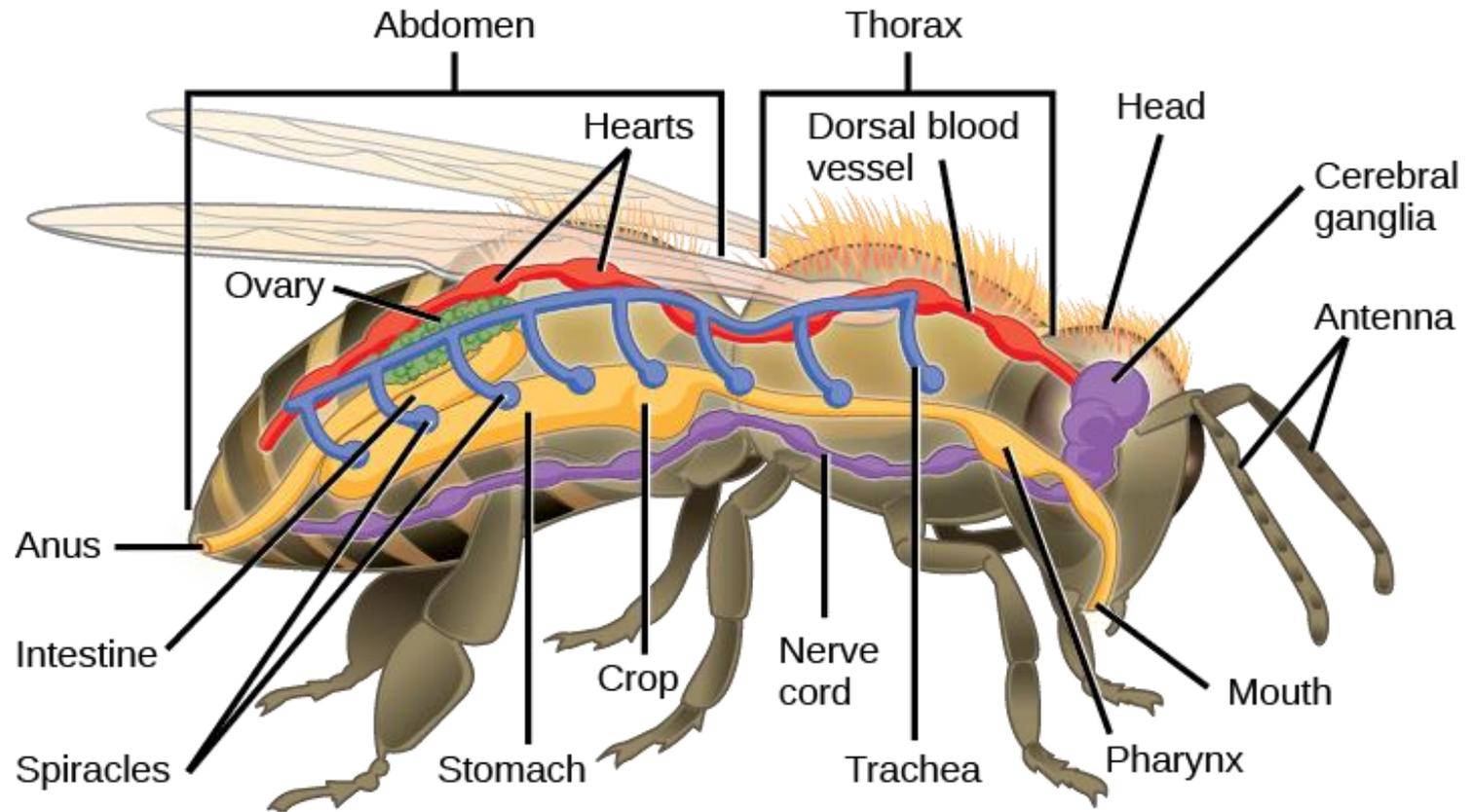
larva



grasshopper

- huge group

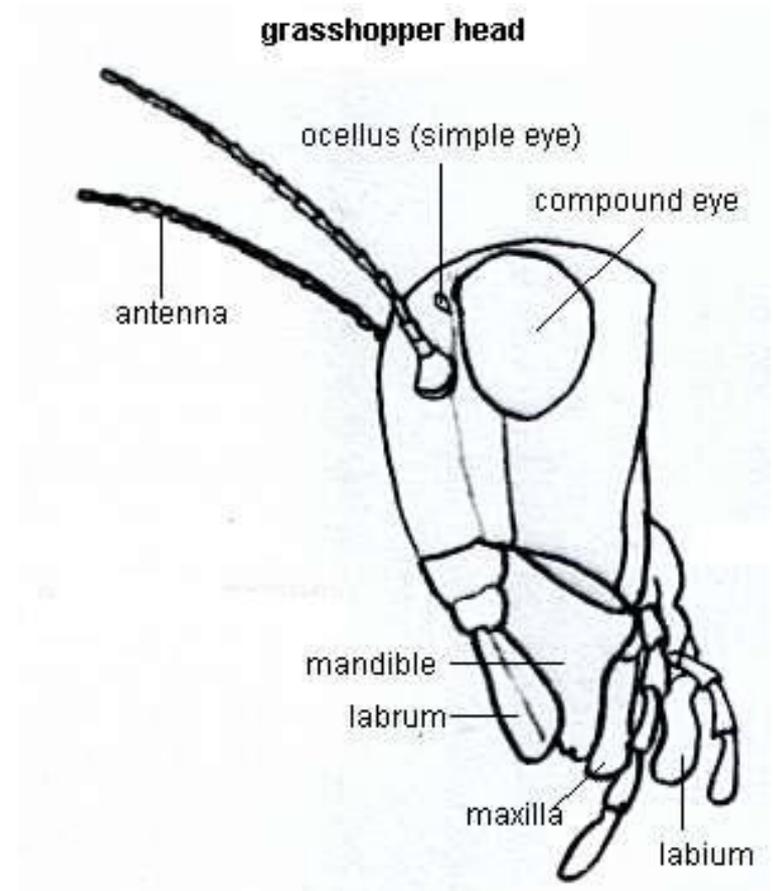
Structures and functions



Structures and functions

Digestive system

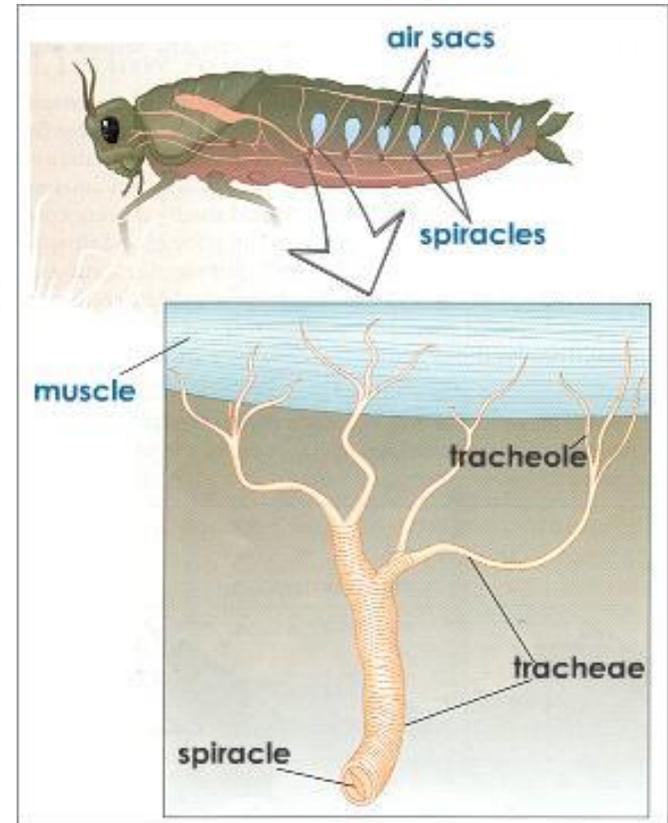
- **complete digestive tract**
(mouth → anus)
- many arthropods have **specialized feeding parts**
- every mode of feeding present in this group (ex. predator, filter-feeders, parasites, scavengers, herbivors...)



Structures and functions

Respiratory system

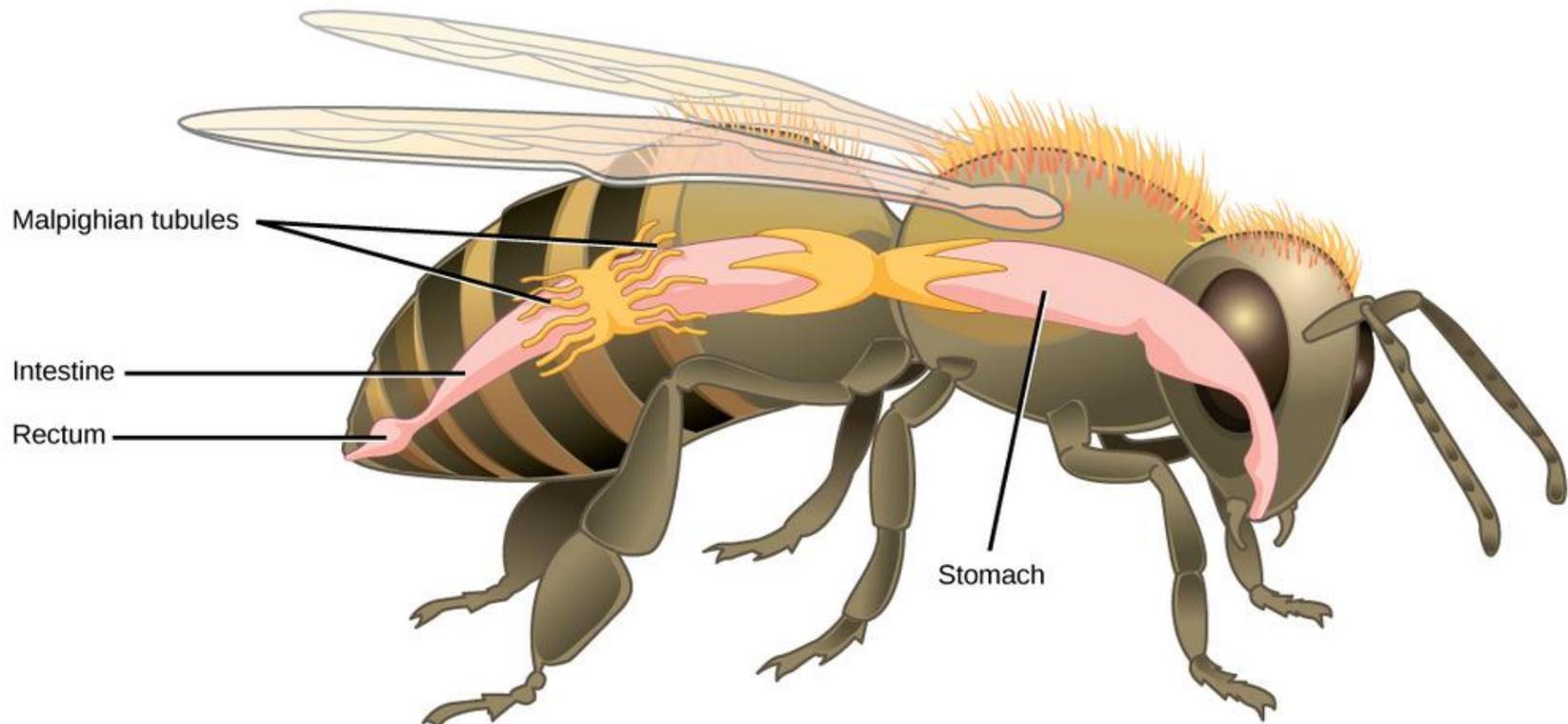
- **gills** – in crabs
- **air sacs** – in spiders
- **tracheae** – network of tubes that carry air straight to cells (insect)

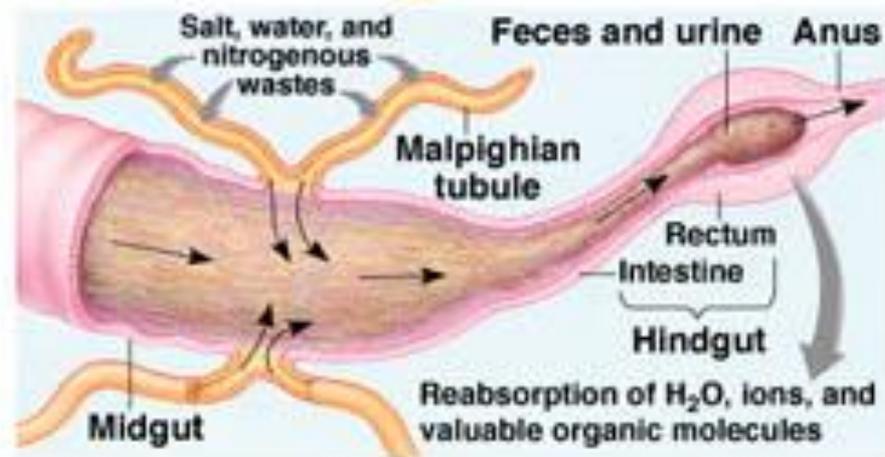
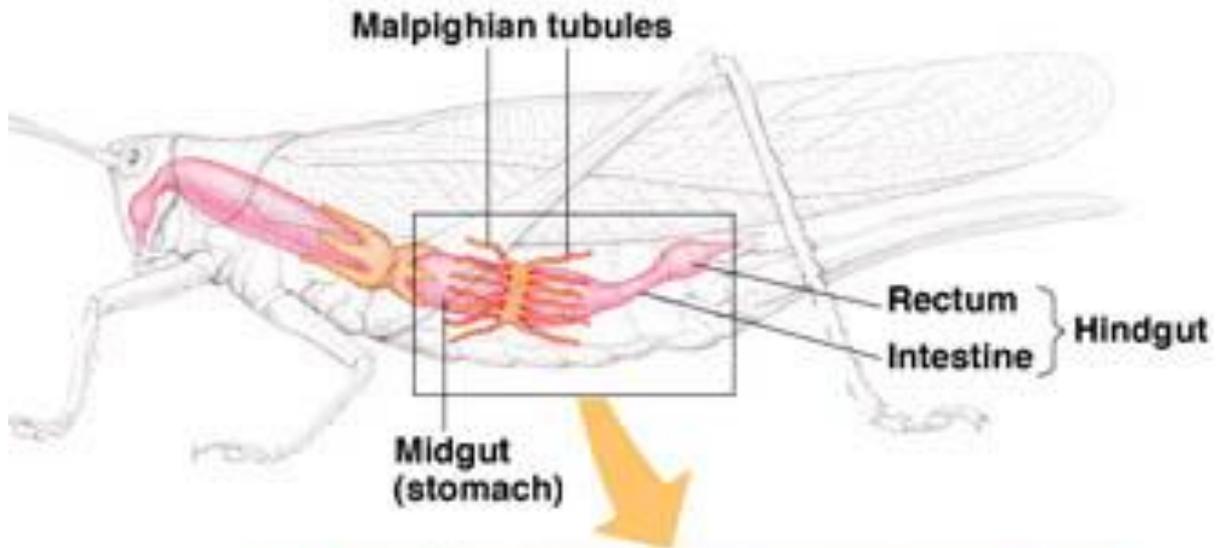


Structures and functions

Excretory system

- **Malpighian tubules** (terrestrial arthro.)
- **gills** (aquatic arthro.)

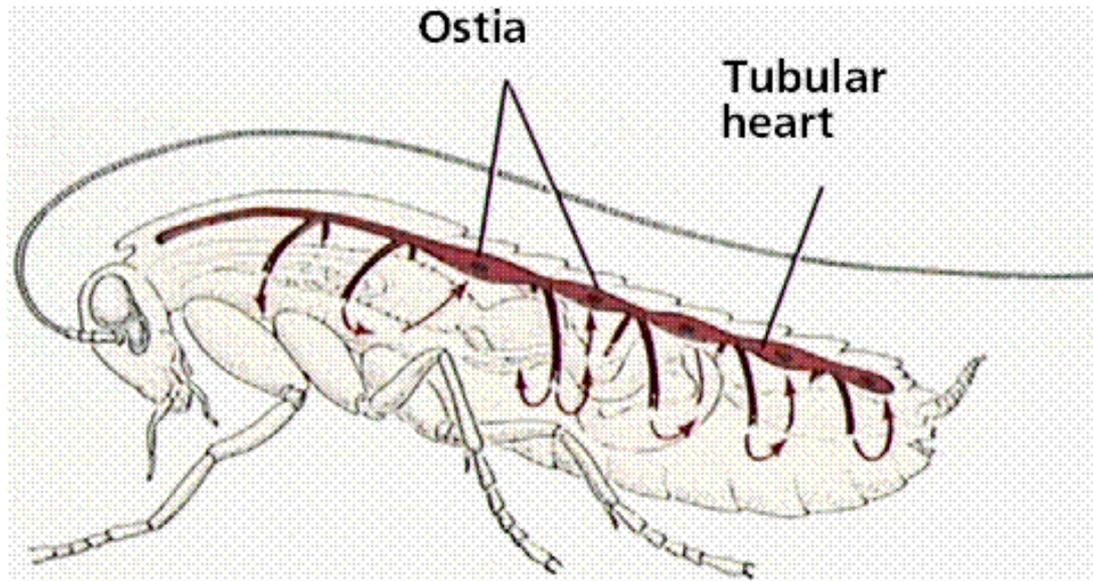




Structures and functions

Circulatory system

- **open circulatory system** – heart pumps **hemolymph** (blood) through open space (sinuses)



Structures and functions

Nervous system

- **brain** which consists of **two ganglia**
- **ventral nerve cord**
- **ganglia** along the cord
- many **senses organ** presents (eyes, antenna, chemoreceptors...)

Structures and functions

Musculatural system

- **movement only in joints**
- muscle attached inside of the exoskeleton
- arthropodes **moult** when they grow because the exoskeleton won't expand

Structures and functions

Musculatural system



Structures and functions

Reproduction system

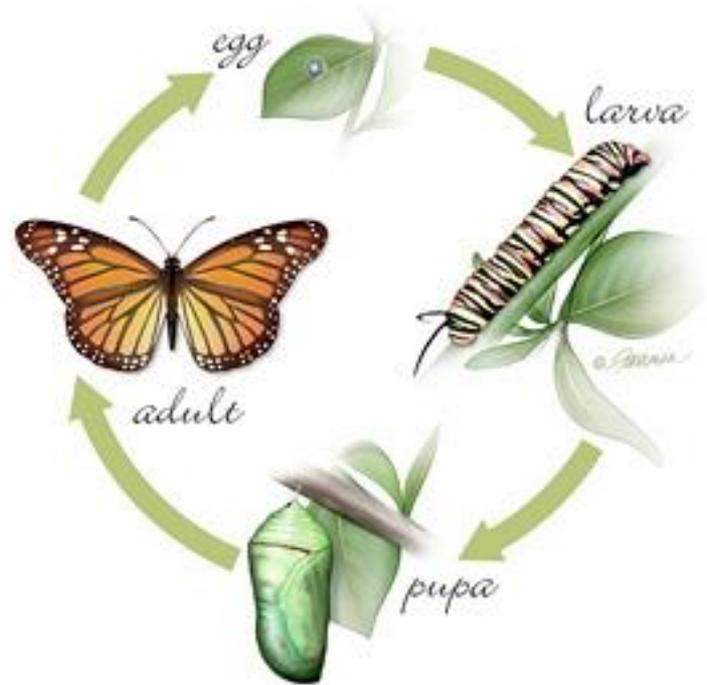
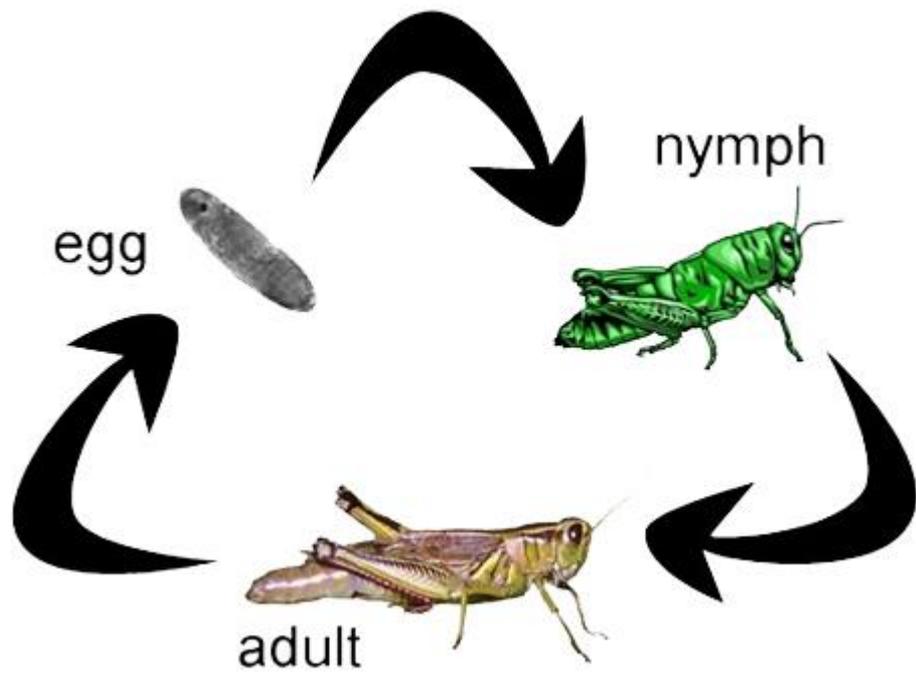
- separate sexes (gonochorists)
- sexual dimorphism
- usually **internal fertilization**
- many arthropods undergo **metamorphosis** (indirect development)

Incomplete metamorphosis

Babies look like **miniature adults**. They increase in size as they grow older, but do not change over all form.

Complete metamorphosis

Eggs hatch into the larvae (**immature stages that do not look like adults**). As larvae grow, they change shape dramatically.



Ecology

HOMEWORK