

Arthropoda Phylum
Most diverse Phylum

The total number of arthropod species exceeds the number of other animal phylum combined

900,000 have been recorded

Probably the same number are not found yet

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There are more beetle species that there are of all vertebrate

Arthropods means “jointed” “foot”

Like annelids have a coelom and segmented

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Appendages- structures that extend from the arthropod's body wall

Have joints and bend

Legs for walking

Antennae for sensing environment

Mouthparts

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Majority are small

Size range from 80 micrometers to 3.6 meters



http://www.afsc.noaa.gov/race/media/photo_gallery/invert_files/Red_king_crab.htm



http://biology.arizona.edu/sciconn/lessons2/Geiger/Picpages/parasitic_mites_and_blue_mold.htm

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Arthropods are divided into two groups
Subphylum Urinaria- with jaws

Subphylum Chelicerata or Subphylum
Crustacea with fangs and pinchers

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Characteristics of Arthropods

Jointed Appendages

Segmentation

Distinct head, often with compound eyes

Exoskeleton

Tracheae and spiracles

Open Circulatory system

Malpighian tubules

Wings

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Segmentation

Sometimes only exist during the larval Stage

Example caterpillar vs butterfly



[http://www.foagm.org/Album_02-07/caterpillar%20\(ID_\).jpg](http://www.foagm.org/Album_02-07/caterpillar%20(ID_).jpg)

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Adults have three distinct regions

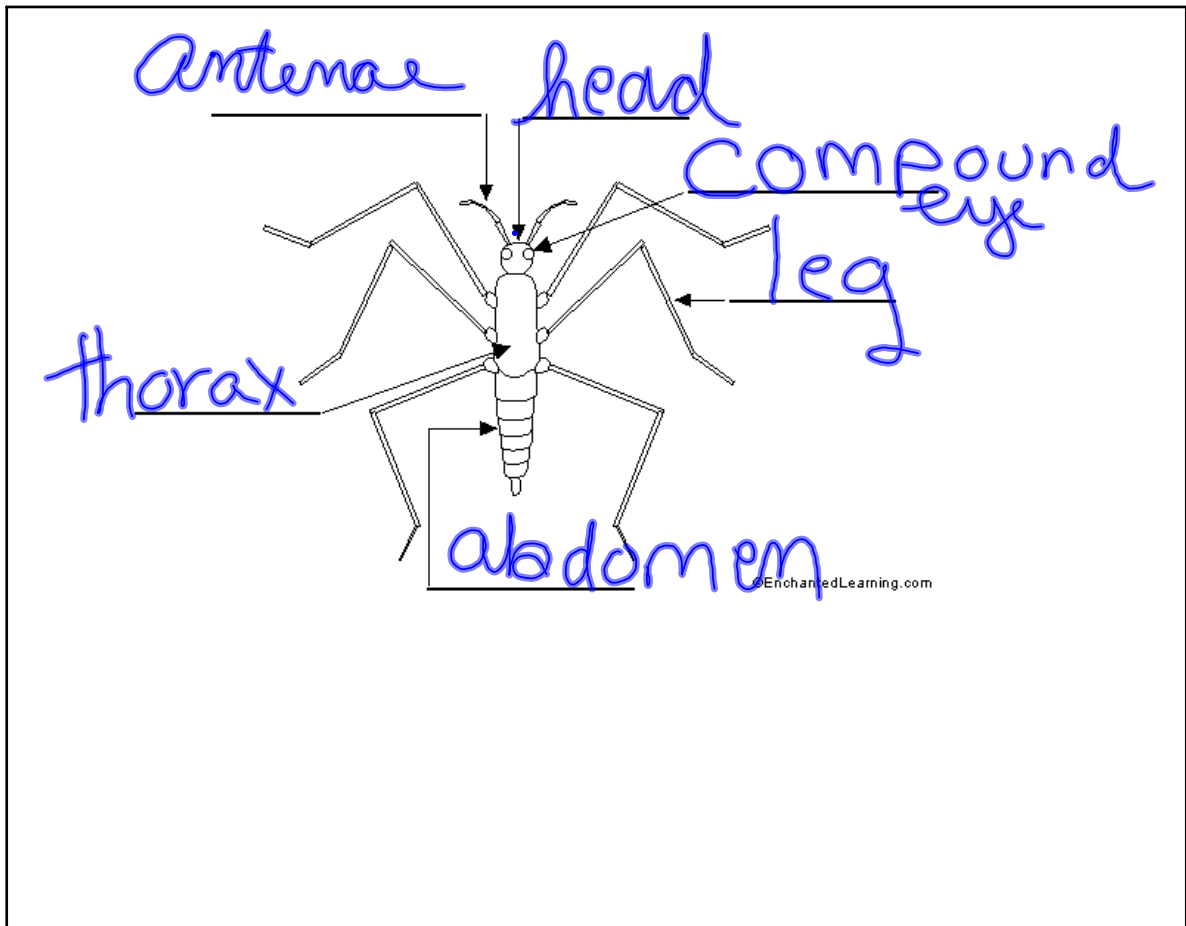
Head

Thorax

Abdomen

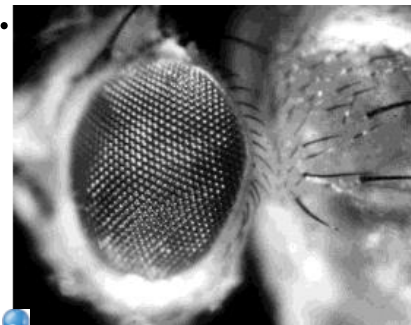
Some have a cephalothorax- head and thorax fused

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Compound eye- an eye made of thousands of individual visual units each with its own lens and retina. The brain received images from each and pieces them together.



<http://users.rcn.com/jkimball.ma.ultranet/BiologyPages/C/CompoundEye.html>

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Image is fuzzy but motion is seen quicker.

Why is this important?

defense

Some have single eyes, some have compound eyes, and some have both

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Exoskeleton

The shell is thinner and flexible where the joints are

Exoskeleton protects an arthropods from predators and helps prevent water loss

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The skeleton can not grow larger so they need to shed and discard their exoskeleton (molting)

Triggered by a release of hormones

The new skeleton is beneath and still soft.

The new skeleton then hardens.

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Respiration

Tracheae- a network of fine tubes

Air enters through the spiracles and passes into the tracheae delivering oxygen to the body

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Excretion

Malpighian tubules- slender
fingerlike extensions from the
arthropod's gut that are bathed by
the blood that surrounds them

like human
Kidney

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