

Arthropoda

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 beetles species that there are of all vertebrates

Arthropods means “joint” “foot”

Like annelids have a coelom and segments

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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/inverte_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

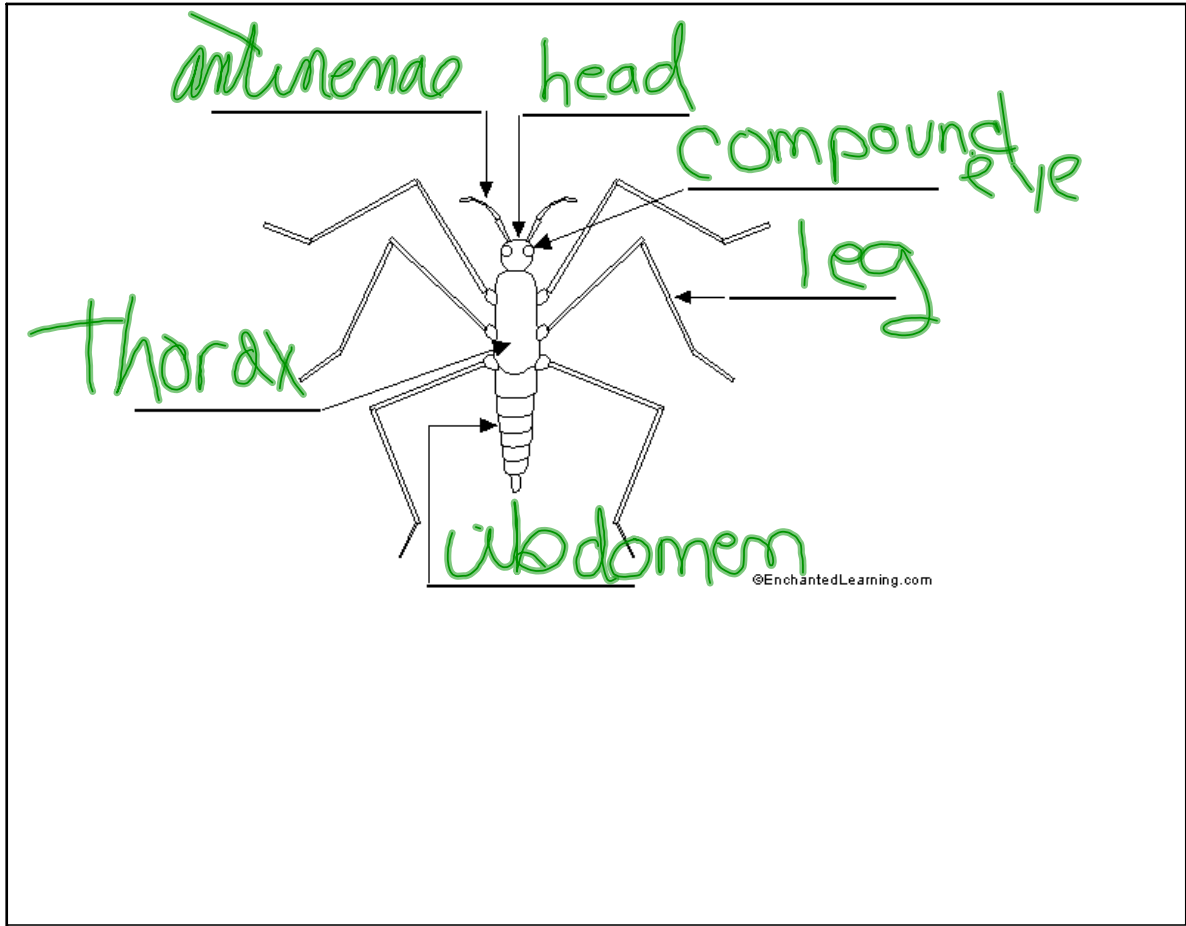
Head

Thorax

Abdomen

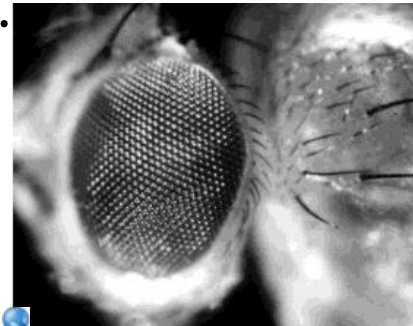
Some have a cephalothorax- head and thorax fused

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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

holes

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Excretion

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

human
like function
Kidney

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