

New Terms - Kingdom Animalia - Invertebrates

- invertebrates** - animals without a backbone - includes: jellyfish, sea stars, worms, insects, clams, and more.
- vertebrates** - animals with a backbone - includes: fish, mammals, birds, and others
- Porifera** - the sponges, characterized by having no symmetry or organs and have specialized collar cells.
- Cnidaria** - sea anemones and jellyfish, have two different body forms: medusa and polyp
- radial symmetry** - defined as having body parts equally arranged regularly around a central axis - sort of like the spokes on a bicycle.
- bilateral symmetry** - used to describe those animals, where if divided down the middle, would have a right and a left half that would be mirror images of each other.
- nematocysts** - cells that are responsible for defense and capturing in the jellyfish and sea anemones, by stinging and stunning the prey.
- polyp** - the body form in cnidarians that is tube-like and attached to some form of substrate.
- medusa** - the bell-shaped form of cnidarians
- Platyhelminthes** - the flatworms and tapeworms, first phylum to show cephalization; have no coelom.
- cephalization** - term that describes that one end of an animal is the head
- Nematoda** - the roundworms; have a cuticle covering and are scavengers.
- pseudocoel** - false coelom
- Annelida** - the earthworms and leeches; first phylum to show segmentation; have excretory devices called nephridia, and a water based hydrostatic skeleton.
- coelom** - the main body cavity of most animals with three layers, it is also filled with fluid-filled space between the inner and outer layers.
- nephridia** - funnel-shaped excretory devices found in most every segment of the annelids to remove water and waste.
- hydrostatic skeleton** - water based skeleton providing shape and support to the annelids
- Mollusca** - snails, clams, and squid; characterized by a mantle, some type of modified foot, and bilateral symmetry.
- mantle** - a fold of tissue that is draped around the soft fleshy body of the animal.
- gastropods** - snails and slugs; literally stomach foot; feed with radula.
- bivalves** - clams, scallops, oysters; flattened shells in two halves; are filter-feeders

- cephalopods** - squid, octopus, nautilus; literally "head foot"; many move by jet propulsion; have large well developed eyes.
- Arthropoda** - spiders, crabs, insects; literally "jointed foot"; many go through a process called metamorphosis.
- exoskeleton** - an external body skeleton that provides protection and support
- antennae** - sensory organs located on the head of arthropods
- trachea** - branching networks that are attached to the spiracles and are responsible for carrying oxygen to the body of arthropods.
- spiracles** - microscopic holes in the bodies of arthropods that open and close to regulate air flow and water loss in arthropods.
- arachnids** - the spiders, scorpions, and ticks; characterized by book lungs for respiration.
- crustaceans** - shrimps, crabs, lobster; able to regenerate lost or damaged appendages
- insects** - beetles, bees, grasshoppers, roaches; have special excretory organs called Malpighian tubules.
- metamorphosis** - process by which a larval form changes into an adult; typically seen in butterflies that were caterpillars in their larval state.
- molting** - growth process in arthropods that involves shedding the old, smaller exoskeleton and secreting a new, larger exoskeleton.
- Echinodermata** - sea stars, sea urchins, sand dollars; literally "spiny skin"; noted for the water vascular system.
- endoskeleton** - internal support skeleton found in the echinoderms
- water vascular system** - system of canals in echinoderms that contain fluid which is supplied to the tube feet for feeding and movement.
- Chordata** - phylum characterized by animals that have a notochord, nerve cord, pharyngeal gill slits, and a tail that extends beyond the anus in some point of its development.
- notochord** - long rod of stiffened tissue that helps support the body.
- nerve cord** - runs parallel to the notochord and develops into the brain and spinal cord.
- pharyngeal gill slits** - paired organs that are used for respiration, feeding, or both.
- Urochordata** - the sea squirts, the invertebrate chordates
- chelicerae** - specialized appendages in the form of claws in some arthropods.
- compound eye** - an eye made up of many small eyes, like those seen in the insects.
- Malpighian tubules** - excretory devices in arthropods
- ganglia** - bundles of nerve found along the ventral nerve chord in some arthropods.
- mandibles** - in arthropods they are a pair of specialized appendages that form part of the mouth and are used for crushing food.