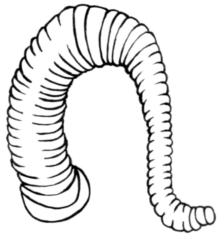
One Fish at a Time

Macroinvertebrate Guide

This sheet contains some basic information regarding taxonomy, identification and handling of several species of macroinvertebrates common to many aquatic environments. Parents and educators are encouraged to consult other sources such as naturalists and field guides for more information particular to their area.

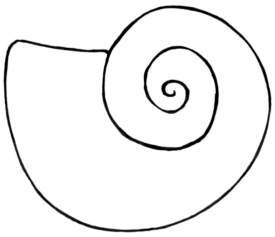
Annelids such as worms and all have soft and segmented bodies.

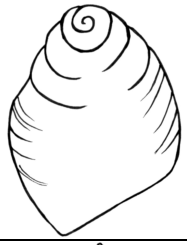
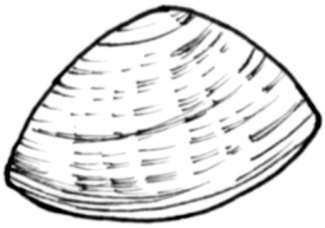
	**Leeches (Subclass *Hirudinea*) have flat, dark coloured bodies and are all hermaphrodites, containing both male and female sex organs. A few species may bite and drink human blood, but many species are harmless to people, drinking the blood of other animals or eating small invertebrates.**

Nematomorpha are an entire phylum of parasitic worms, similar to, but not to be confused with nematode worms. Their taxonomy is not well understood at this point.

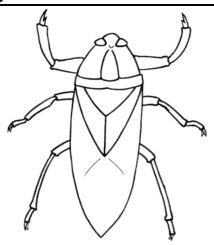
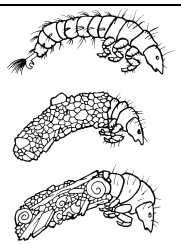
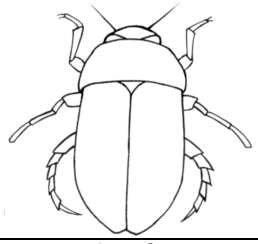
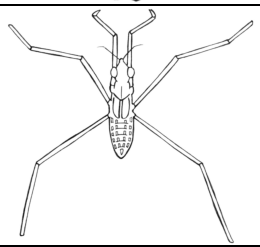
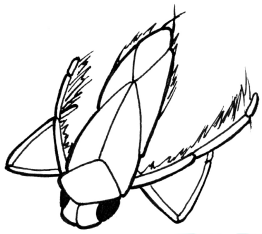
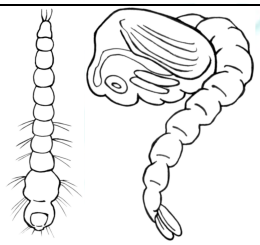
	**Horsehair or Gordian Worms (Phylum *Nematomorpha*) are often found forming tangled, knotted masses in and around water during the spring. Their lava parasitizes various insects, taking control of their brains and causing them to drown in water, before emerging as adults. Thankfully, they are harmless to humans.**

Molluscs form plates or shells around their bodies. Their shells are often left behind long after the animal inside has died.

	**Ramshorn Snails (Family *Planorbidae*) and Valve snails (Family *Valvatidae*) have shells that form a single flat (depressed) coil, similar to a piece of coiled hose or the horn of a ram. Valve snails also have an operculum; a small, hard structure attached to the snail's body that seals off the opening of the shell for protection.**

	**Freshwater Limpets (Family *Planorbidae*, Tribe *Ancylini*) have simple, flat, uncoiled, cone shaped shells. Most species are marine, but freshwater species can be found around the world.**
	**River or Mystery Snail (Family *Viviparidae*) shells are described as oblong, or taller than its spiral is wide.**
	**Periwinkles (Infra Order *Littorinimorpha*) have oblong shells similar to *Viviparidae*, belong to a different taxonomic family.**
	**Trumpet Snails (Clade *Sorbeoconcha*) have very oblong shells that are much taller than they are wide.**
	**Nerite Snails (Family *Neritidae*) have globose shells, with a spiral about as wide as it is tall.**
	**Freshwater Mussels (Order *Unionoida*) are bi-valve molluscs (have two shells) that have a larval stage called glochidia, that attach to fish. One species (*Margaritifera margaritifera*) is used to produce freshwater pearls.**

Insects have an exoskeleton, six legs and a body with three segments (a head, thorax and abdomen).

	**Toe Biters or Giant Water Bugs (Family *Belostomatidae*) have flat, oval shaped bodies and can grow very large, some species reach up to 12 cm in length. They should be handled with caution as they may 'play dead' and have a very painful bite. Males will carry eggs on their back.**
	**Caddisfly Larvae (Order *Trichoptera*) can be found in many different aquatic environments, but are generally most common in clean water. Some species produce silk cases and stick materials such as rocks, twigs and shells on them to hide and protect their soft bodies.**
	**Predaceous Diving Beetles (Family *Dytiscidae*) have round, oval bodies and flat, hairy hind legs. Found in a wide variety of colors, most are black, brown or dark green in color and some have gold highlights. They should be handled with caution as many can bite.**
	**Water Striders (Family *Gerridae*) can often be seen hunting for small invertebrates while skating on top of quiet water bodies such as ponds. They use surface tension and tiny hairs at the ends of their legs to repel water and avoid sinking.**
	**Water Boatman (Family *Corixidae*) swim right side up, while Backswimmers (Family *Notonectidae*) swim upside down, using their hind legs like oars. They should be handled with care, as they can stab people with their sharp mouthparts (similar to a mosquito).**
	**Mosquito (Family *Culicidae*) Larva can often be seen wiggling just below the surface of the water. They have four instars, shedding their exoskeleton each time before metamorphosis into a Pupa. Although the pupa is less active, it must swim to the surface to breathe frequently and to complete its emergence as an adult.**