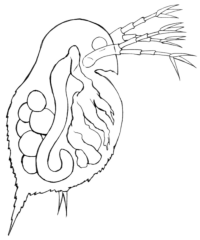
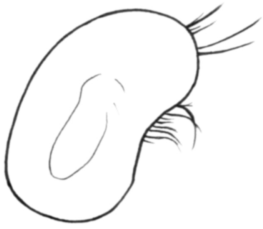
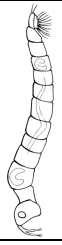
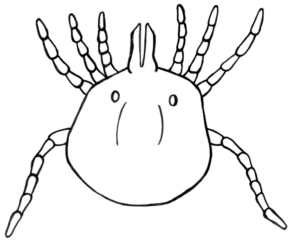
Microinvertebrate Guide

This sheet contains some basic information regarding taxonomy, identification and handling of several species of microinvertebrates common to many benthic communities. Parents and educators are encouraged to consult other sources such microbiologists and laboratory guides for proper safety and handling procedures of microscopes, laboratory equipment and microorganisms.

Crustaceans have rigid, segmented bodies with exoskeltons. Most live in aquatic and marine environments, but there are examples that live on land (i.e. land crabs and pill bugs). They often have a larval form before developing into adults.

	**Water Fleas (Family *Daphnia*), despite their name, are not insects. They are easily identified by their jerky movements and kidney like shape, where the head is fused to the body. They are often grown as live aquarium food and for research, as their internal structures are visible through their transparent bodies.**
	**Seed Shrimp (Class *Ostracod*) have a large head, small thorax and seven pairs of appendages, inside a shell like-structure with a hinge, similar to a clam or mussel.**
	**Glochidia (Order *Unionoida*) are the larval stages of several aquatic and marine mussels that usually live in a commensal relationship (benefiting, without harm) with fish. After hatching, they attach to a fish, eventually dropping off into the substrate and developing into juvenile mussels.**

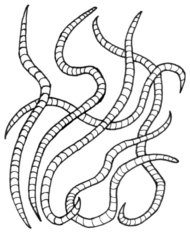
Insects have an exoskeleton, six legs and a body with three segments (a head, thorax and abdomen).

	**Phantom Midge Larva or Glassworms (Family *Chaoboridae*) are the completely transparent larval stage of the midge fly. They are known as fearsome predators of other microinvertebrates such as daphnia and mosquito larva.**
	**Water mites (Order *Trobidiformes*, Unranked Subgroup *Hydrachnidiae*) have eight legs and soft, flat, round bodies. Some species have more visible palps (mouthparts) than others. With many species found all over the world, the life cycle and taxonomy of many water mites are not well understood.**

Hydrozoans are a class of small, predatory organisms, closely related to jellyfish and corals. Although most associated with marine environments, several aquatic species exist. Their complex life stages (that allow them to reproduce both sexually and asexually) and soft bodies (that easily fall apart when removed from the water), make them difficult to classify and study.

	**Hydra (Genus *Hydra*) have a tubular body and an adhesive 'foot' that allows them to stick to surfaces. The number of tentacles on the opposite end of its body varies with species and is used to sting and capture small invertebrates such as Daphnia.**

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

	**To the naked eye, Tubifex worms (Genius *Tubifex*) look like a mass of fine, tangled red or black threads. But when viewed under a microscope, their segmented bodies can be easily seen. Although they are often sold as fish food, they can sometimes transmit disease or cause gastric disorders in aquarium fish.**