Key to Common Pond Invertebrates


I. What major group does it belong to?

IA. If the animal has (a) 3 or more pairs of jointed legs; or (b) a recognizable head, or at least jaws or hooks at the front end, it is an **arthropod** (proceed to key A for arthropods)

IB. If the animal doesn’t have at least 3 pairs of jointed legs or a head, it is a **non-arthropod invertebrate** (proceed to key B for non-arthropod invertebrates)

A. Key for groups of arthropods

A1. If the animal has 3 pairs of legs (look carefully, some of the legs may be broken), or no legs, it is an **insect** (proceed to key C for insects)

A2. If the animal has 4 or more pairs of legs (look carefully, some of the legs may be broken), it is a **non-insect arthropod** (proceed to key D for non-insect arthropods)

B. Key for non-arthropod invertebrates

1a. Animal enclosed in a hard shell.....**Mollusks**...go to 2

1b. Animal not enclosed in a hard shell.....go to 3

2a. Animal enclosed in a 1-piece shell, usually coiled into a spiral, but sometimes shaped like a wide, flat cone.....**Snails (Gastropoda)**
2b. Animal enclosed in a 2-piece shell….**Clams and mussels (Bivalvia)**

3a. Animal shaped like a worm….go to 4  
3b. Animal a gelatinous colony, sometimes as large as a football, with small star-shaped individual animals visible….**Bryozoa**

4a. Animal very tough and muscular, obviously segmented, with suckers at both ends of the body….**Leeches (Hirudinea)** (don’t worry – most species don’t eat people!)

4b. Animal soft-bodied and without suckers…..go to 5
5a. Animal strongly flattened from top to bottom, moves by gliding….Flatworms (Turbellarians)

5b. Animal more or less round in cross-section (like a thread), moves by crawling (like an earthworm), often brownish….Oligochaeta

5c. Animal more or less round in cross-section (like a thread), moves by thrashing about, clear, usually very small (less than 1 cm long)….Roundworms (Nematoda)
C. Key for insects

1a. Without segmented legs…**True flies (Diptera)**

1b. With 3 pairs of segmented legs (some may be broken off!)…go to 2

2a. With large, functional wings….go to 3
2b. Without wings, or only with developing wingpads that couldn’t be used for flying…go to 4

3a. Hind wings formed into hard wingcovers; with chewing mouthparts….**Beetles (Coleoptera)**

3b. Only parts of the hind wings hardened; with sucking mouthparts…**True bugs (Hemiptera)** (watch out – some of these bite!)
4a. Animal small (less than 3 mm long), with a “spring” under the abdomen (hind part of the body)…Springtails (Collembola)

4b. Animal small or large, but never with a “spring” under the abdomen…go to 5

5a. Animal with 3 long “tails” (look closely – these may be broken off!)…go to 6
5b. Animal without 3 long “tails”…go to 7

6a. Tails as thin as a thread; animal with feathery gray gills on the sides of the abdomen…Mayflies (Ephemeroptera)

6b. “Tails” fleshy (these “tails” are actually gills); without gills on the sides of the abdomen….Damselflies (Odonata)
7a. Animal large and stout, with a long, extendable underjaw…**Dragonflies (Odonata)**

7b. Animal of various shapes and sizes, but never with a long, extendable underjaw…go to 8

8a. With sucking mouthparts in the shape of a long tube…**True bugs (Hemiptera)**
(watch out – some of these bite!)

8b. With chewing mouthparts that are not shaped like a long tube…go to 9
9a. Animal living in a case made of sand, bits of leaves, etc.; antennae very small and hard to see…**Caddisflies (Trichoptera)**

![Caddisflies](NABS(www.benthos.org))

9b. Animal free-living without a case; antennae usually clearly visible…**Beetles (Coleoptera)** or **Alderflies (Megaloptera)**

![Beetles and Alderflies](NABS(www.benthos.org))

**D. Key for non-insect arthropods**

1a. Animal ball-shaped, with 4 pairs of legs, often bright-colored, usually less than 3 mm long…**Water mites (Hydrarcarina)**

![Water mites](NABS(www.benthos.org))

1b. Animal very small (less than 2 mm long)…go to 2

1c. Animal more than 2 mm long…..go to 4
2a. Animal enclosed in a flattened shell…go to 3
2b. Animal tear-drop-shaped or cigar-shaped, not enclosed in a flattened shell…**Copepoda**

3a. Animal shaped like a tiny seed, without a distinct head…**Seed shrimp (Ostracoda)**

3b. Animal with a distinct head or “nose…”**Water-fleas (Cladocera)**
4a. Animal large (more than 2 cm long), with obvious claws (watch out)…**Crayfish** (Decapoda)

4b. Animal small (usually less than 2 cm long), without obvious claws…go to 5

5a. Animal flattened from side to side, usually yellow-brown…**Scuds** (Amphipoda)

5b. Animal flattened from top to bottom, usually gray…**Sow bugs** (Isopoda)