



## **Appendix E: Suggestions for teaching about aquatic invertebrates**

### **How to explain the term “aquatic macroinvertebrate”**

When teaching students about aquatic macroinvertebrates for the first time, it is often helpful to break down the word. Ask students first what the word “aquatic” means. When the correct definition is given, do the same with the words “macro” and “invertebrate”. Although the term invertebrate refers to any animal without a backbone, be sure to emphasize insects since these lessons deal mostly with insects. Explain to them that although the term “macro” means big (opposite of micro) these bugs are not huge, but large enough to see without a microscope. Have the kids put the words together, i.e. aquatic macroinvertebrate means ‘big water bugs’.

### **Ideas to introduce adaptations**

Explain to your students that aquatic macroinvertebrates need special adaptations to survive and live underwater. You can ask how the invertebrates might breathe underwater. A lot of students probably understand that fish breathe with gills, so you can say they breathe similar to fish. However, some invertebrates do not have gills, but instead use a breathing tube. You can relate this to kids using snorkels when they go swimming.

Stoneflies have gills in their armpits (the point where the legs attach to the thorax). If students have the opportunity to observe stoneflies in a tub of water the stoneflies may begin to do “push-ups”. This is an excellent opportunity to discuss adaptations. Stoneflies live in fast flowing water where dissolved oxygen is abundant and easily acquired as water moves over their gills. Dissolved oxygen is less abundant in still water and the stoneflies have to do “push-ups” to force water over their gills. This is similar to students breathing hard after they have run across the playground.