



Macroinvertebrate ID

If we haven't already, ask why we call this module water canaries.

Does anyone know the story of the canaries in the mines?

The canaries in the mines were bio-indicators.

What are bio-indicators?

A bio-indicator is a species that is sensitive to disturbances in their habitat whose presence or absence tells us something about the level of disturbance.

For this module we are going to be using benthic macroinvertebrates as our bio-indicators or water canaries. Define Benthic Macroinvertebrates – Like politicians, bottom-feeding spineless creatures who you can see what they are doing, but only if you look real close.

Why do we use them for water quality?

- They don't move around much
- They're similar world wide
- They're relatively long-lived

We have developed a power point that we use in workshops and in classrooms that we use to practice identifying macroinvertebrates before we go out in the field.

Hand out drawing worksheets or have them open to them in their binders.

Begin Power Point presentation.

We are going to view a power point presentation that introduces macro ID and sensitivities. The majority of this power point will involve some macro ID practice where you will be shown slides of different macros for a short amount of time, and in that time you will have to draw them as best you can so that afterwards you can use the key to identify them. The first three slides we see show different resources available to you for identifying and working with macroinvertebrates. The fourth slide shows the macroinvertebrate key we use in the field. This is the key we will use to identify the critters in the next few slides. I will hand it out after you have drawn the critters.

The next slide shows an example of the worksheet and the characteristics that will be most important when you are detailing your critter.

The next three slides outline specific parts of each critter that should be focal points as we draw them.

Legs: How many? Are they fake or real?

Tails: How many? Are they long and thin or paddle-like?

Gills: Present or absent?



We are now going to do a practice ID so you can get an idea of how this works.

Have participants open to the first space for the practice drawing.

Take a look at this slide and try to get as much detail as possible while answering the questions on the right side of the picture.

Now you will see 15 different slides of critters. You will see each slide for two minutes. Remember you will be attempting to ID these critters from your drawings so get the important details down first, then you can go back and add detail to your drawing if there is time. Also, on some of the slides you may see more than one picture pick one of the pictures and go stick with that one. There is one slide, and you will know the one I am talking about when you see it, that has creatures that look very different, but I assure you they are all the same type of organism. Again, pick one and draw from that.

Start the slide show.

After the slide show finishes hand out the macro keys and give them ten minutes to ID their critters.

Go over the ID with the group being sure to mention all the key characteristics of each critter.

The final part of the power point details the sensitivities of the critters we may find. Our scale recognizes significance both in the presence and absence of certain critters.