Macroinvertebrate Mayhem

GEORGIA project WET WATER EDUCATION TODAY

- What do we need to survive? Water, Shelter, Oxygen and Food (write them on the board)
    - Animals and bugs also need those things to survive. If they do not havethem or if it is dirty/polluted, they cannot live.

    - Some animals are more tolerant to "dirtier" conditions. They may not needas much oxygen or their food sources may not be as tainted. Whereas, some animals/bugs need very clean conditions to survive.

    - Today, we are going to talk about Macroinvertebrates.
        - Macro means big (enough to see them)
        - Invertebrate means an animal without a backbone
        - These Macroinvertebrates live under the water. They need cleanwater to survive. From the water, they get their oxygen, food, shelter and of course water.

    - From Macroinvertebrates, we can tell how clean the water is. If there are no bugs in the water, we can say that the water must not be suitable for thebugs to live in and therefore it is not safe for us to drink and play in. If there are a lot of bugs in the water of many different kinds, we can say thatthe water is safe to drink and play in.

    - Today, we are going to go and collect Macroinvertebrates from your stream and put them into groups to tell how clean the water is. First, we have to learn about the types of bugs in the water and how to tell them apart and how to tell from our collection if the water is clean or not.

    - Hand out Macroinvertebrates (one to each student, make sure that students that are in a group have different bugs). Have them look at their bug and compare it with other students in their group. Think of a couple things that make their bug unique from the other ones in their group. Have each student briefly tell the class what makes their bug different.

    - Another important factor is diversity. Diversity means how many different kinds of bugs there are in the water. If there are 20 of the samebug, the water might not be safe enough to drink. If there are 20 different/unique bugs, the water is very healthy

    - Now, are we ready to collect and match Macroinvertebrates?! We are going to be a homeowner that lives next to the Chattahoochee River. We are concerned about the cleanliness of our water, so we are going to collectand match Macro Invertebrates. There are three different homeowners: a person from a forest, a person from a farm and a person from the city.

- Here are the rules. Each group has a board in front of them, a stack of colored cards and a map. To find out where you are collecting bugs look on your map and match up the color of your cards to a color on the map. There are three colors: Green, Yellow and Blue. Describe the places and locations. Each card is a bug that has been collected

- Ok, now everyone match the picture on the cards to the picture on the game board. Some of you guys will have more than one for each bug, just stack them on top of each other.

- Give the students time to do this.

- When finished, we have to analyze our results and see how clean the Chattahoochee is by our house. The board is separated into three sections: Group 1, Group 2 and Group 3.

    - Group 1 are the type of bugs that do not like to live in dirty water. They will usually only live in very clean water.
    - Group 2 are the bugs that can live in very clean water and water that is somewhat dirty – they are in-between.
    - Group 3 are the type of bugs that can live in dirtier water that the bugs from Group 1 and Group 2 will not live.
    - Look at your board and count how many bugs you have in each group. What do you think that means about your quality?

- Also, we talked about diversity – how many different kinds of bugs are in the stream. How many different bugs total to you have on your board? Which group has the most stacks – Green, Blue or Yellow?

- Have the Green/Yellow/Blue Groups tell everyone what they found

- If time permits, have the students talk in groups about why the Green Group's part of the Chattahoochee River might be "cleaner" than the blue groups. What are some land uses at your site (what is happening in the city, on the farm, in the forest.

    - Look at your map - Do a lot of people live in the forest? What do you see a lot of in the forest (trees)
    - What is happening on the farm? – fertilizer, cows and their manure, pesticides, less trees to provide shade and food.
    - What would be happening in the city? – people are littering into the streams, storm drain run off, factories.
    - What are the things that might cause the water to be dirtier further down the Chattahoochee?