**Ask the Bugs!** Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Biological Assessment Activity



**Background Information**

 What can help determine the quality of water than the organisms that live in them? Biologists will specifically look at the macroinvertebrates in a body of water to help determine the water quality. Macroinvertebrates are aquatic insects or insect larvae that live their lives on the bottom of the water. These insects are either tolerant or intolerant to pollution found in the water. As a result the types of insects found in the stream can indirectly tell you the quality of water. If you find a large amount of insects that are intolerant to pollution you can assume the quality of the water is good.

**Problem: How can macroinvertebrates tell you something about the quality of a body of water?**

Prediction:

**Procedures**

1. Go to each stream sampling. They represent the number of macroinvertebrates found at a particular time. Record the number of each macroinvertebrate from the stream.
2. Analyze the water quality of each sampling by using the biotic index on the back.

Data Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Macroinvertebrates | Stream #1 | Stream #2 | Stream #3 | Stream #4 | Stream #5 |
| Stonefly nymph |  |  |  |  |  |
| Mayfly nymph |  |  |  |  |  |
| Hellgramite (dobsonfly larvae) |  |  |  |  |  |
| Damsel fly larvae |  |  |  |  |  |
| Dragonfly Larva |  |  |  |  |  |
| Sowbug |  |  |  |  |  |
| Scud |  |  |  |  |  |
| Leech |  |  |  |  |  |
| Mosquito larvae |  |  |  |  |  |
| **Location/ Stream Conditions** |  |  |  |  |  |

**Analysis**

1. Which stream(s) would you consider to be of good quality? Why?

2. Which stream(s) would you consider to be of poor quality? Why?

3. Which stream conditions are the healthiest for aquatic life?

4. Group 1 organisms can be found with group 3 organisms in healthy water yet are unlikely found together in polluted waters. Why?

5. Find the Stream Index Values by using the following rule(s).

Excellent (>15)

Good (11-14)

Fair (6-10)

Poor (< 5)

Group 1- 3 pts times the # of types

Group 2= 2 points times the # of types

Group 3= 1 point times the # of types

SIV= Group 1 + Group 2 + Group 3

