Calculating a Biotic Index

Pollution (water quality) can be measured by looking at what lives in the river. We are interested in the invertebrates (animals without a backbone). Invertebrates are good indicators of water quality because some are more tolerant of pollution than others. So the type and numbers we find will indicate how clean or polluted the river may be.

To measure the quality of the water we calculate the Biotic Index which works by giving each invertebrate a score that tells us how sensitive they are to pollution. Invertebrates with a score of 10 are very sensitive to pollution, those with a score of 1 are more tolerant of pollution.

1. Use your key to identify which invertebrates you have found.
2. Tick the circles on this sheet to record the invertebrates you have found.
3. Add up the sensitivity scores from all of the ticked circles and write the total in box A.
4. Add up the number of boxes you have ticked and write the total in box B.
5. Divide the number in box A by the number in box B to give the biotic index.

Biotic Index – 0 indicates a polluted river, 10 is probably a clean river.

Example:
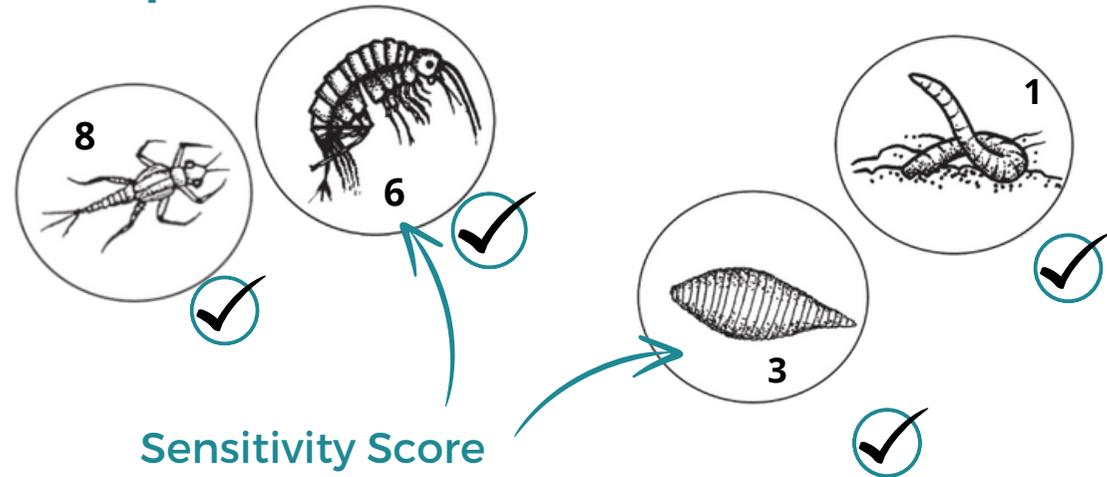
Sensitivity Score

8+6+3+1 =	18	**A** (Add up the Sensitivity Scores of the inverts found)
	4	**B** (Add up the number of types of Inverts found)
A ÷ B =	4.5	**Biotic Index** (Divide A by B)

Your Results		A
		B
		Biotic Index

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Biotic Key:

Olive Nymph 8

Hog Louse 3

Alderfly Nymph 4

Mayfly Nymph 8

Caseless Caddis 5

Cased Caddis 7

Damselfly Nymph 6

Shrimp 6

Dragonfly Nymph 8

Stonefly Nymph 10

Aquatic Worm 1

Diving Beetle 3

Leech 3

Midgefly Larvae 2

Water Flea 2

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