



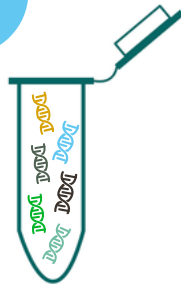
# What is DNA Metabarcoding?

1



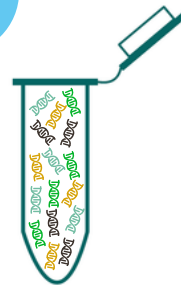
Kick-net sample is blended into a 'DNA soup'

2



DNA is separated from the 'soup' using a series of washes with various buffers

3



DNA is multiplied to make many DNA copies

4



100,000+ copies of bug DNA are produced using a high-throughput sequencer that organizes the DNA into sequences

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TAGGAAC TTCACTCAGCCTCTTAATTCGAGCTGAGTTAGGG
AACACITTTATTTTATTTTGGTGCTTGAGCTGGAATAGTAG
ATATGAGCAGGAATAATTGGTTCATCAATAAGATTAATTATT
TTAATTCGAGTTGAGTTAGGCCAACCTGGATCATTAAATTGGG
AACACITTTATTTTATTTTGGTGCTTGAGCTGGAATAGTAG
TTAATTCGAGTTGAGTTAGGCCAACCTGGATCATTAAATTGGG
TAGGAAC TTCACTCAGCCTCTTAATTCGAGCTGAGTTAGGG
ATATGAGCAGGAATAATTGGTTCATCAATAAGATTAATTATT
TTAATTCGAGTTGAGTTAGGCCAACCTGGATCATTAAATTGGG
AACACITTTATTTTATTTTGGTGCTTGAGCTGGAATAGTAG

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These DNA sequences are compared to a known library of different bug species to determine which bugs are present in the water sample



March Brown Mayfly  
*Rhythrogena germanica*



Root-Maggot Fly  
*Hydrophoria linogrisea*



Blue Emperor Dragonfly  
*Anax imperator*



Predaceous Diving Beetle  
*Colymbetes densus*