



Games

- “[DNA detectives](#)”: We have organised a number of educational activities based on the “DNA detectives” concept of Kerr and Breitbart (2021), tailored towards the identification of insect species using DNA barcoding. During this activity, suitable for school children from the age of 6 to adults, participants decipher a short DNA code in the form of a string of 20 beads with a different colour for each nucleotide (A,G,C and T). Each code is then matched to a database to identify the species it belongs to

Kerr M, Breitbart M. 2021. DNA Detectives: Outreach Activity Teaching Students to Identify Fish Eggs Using DNA Barcoding. J Microbiol Biol Educ. 22:10.1128/jmbe.v22i1.2191.

<https://doi.org/10.1128/jmbe.v22i1.2191>



- BarcodingGO: A problem-based approach to teaching concepts related to environmental-DNA and bioinformatics
(<https://iubmb.onlinelibrary.wiley.com/doi/10.1002/bmb.21424>)

Other resources

- The [Brickopore](#), designed by Blocksford Brickopore from the Earlham Institute has been built and used in several of our workshops to engage

the participants and introduce the concept of DNA sequencing. The Brickopore works in the same way as a [Nanopore sequencer](#), practically “reading” a molecule of DNA to generate the sequence of As, Cs, Gs and Ts that it encodes, but using a series of coloured lego bricks instead. Users can create their own Lego “DNA” sequence using 20 bricks of 4 different colours, and those are read by a sensor that detects the colour of each brick. The series of colours is then converted to a sequence of letters, which can then be submitted to the Genbank database using the [Genbank BLAST](#) tool for species identification.

Photo legend: The Brickopore in action at LIB Museum Koenig, during our [‘Workshop for the Networking of Amateur Taxonomists’](#) on 20-21.09.24.

