

MEASURING BIVALVES

Purpose

The purpose of the exercise is firstly to describe in both verbal and statistical terms these bivalves, to make deductions about their mode of life and the environment in which they lived, and secondly to make deductions about the fossil assemblage (life or death) from its size distribution. Bivalves continue to grow throughout their life.

Instructions

These bivalves were all collected from Happylands Quarry, grid reference 150350 north of Stow on the Wold in Gloucestershire. They can be found throughout several metres of the limestone exposed in the quarry but the vast majority are found in a layer about 30 cm. thick, often in clusters with each individual bivalve in a vertical position. A few echinoids and brachiopods were found among them.

- 1. Measure the length, breadth, and width of the bivalves in the box you have been given. If the bivalve has been chipped record the actual length followed by a plus sign, followed by an estimate of the original length, e.g. 28+ (est 30)*
- 2. Enter the data into a spreadsheet in 3 columns. Where the bivalve has been chipped type in the estimated length.*
- 3. Describe the fossils using appropriate terminology.*
- 4. Make a labelled drawing of one of the fossils, not a diagram from a book.*
- 5. Use the British Fossils books to find the name of the bivalve.*
- 6. Sort the whole data in order of length. Plot a frequency graph using the length either by using the spreadsheet or manually. You will need to group the bivalve lengths in intervals of 3mm, so you will count, for instance all, those with lengths of 38mm, 39mm, and 40mm then plot the interval against the number of bivalves with those lengths.*

- 7 *Plot length against width or breadth.*
- 8 *Deduce the mode of life of the bivalve and whether the populations are life or death assemblages. Give the arguments both for and against your decision. Are they all one species?*

Teacher's Section

Requirements

A large number of bivalves, or other fossils all of the same species.

Number each fossil.

Callipers

British Fossils (BMNH) or other fossil identification book.

Notes

You will need to modify the worksheet to suit the fossils you have.

It is best if students measure no more than 20 otherwise they get bored.

Students should record the number of each fossil so you can check on the accuracy of their measurements. Results can be shared by all students using a printed sheet or data file. 100 fossils are probably enough. If you

need more for statistical purposes then data can be recorded in advance.

It is also possible to construct two sets so that students can determine from frequency diagrams if there are two species present.

Results

Depends on the fossils you have used.

Time

About 1 hour for measuring and drawing.