

## **Bivalves**

*Equivalve and equilateral*

D

*Show students both valves of a large modern bivalve to illustrate the meaning of these terms.*

*Model to show action of muscles*

D

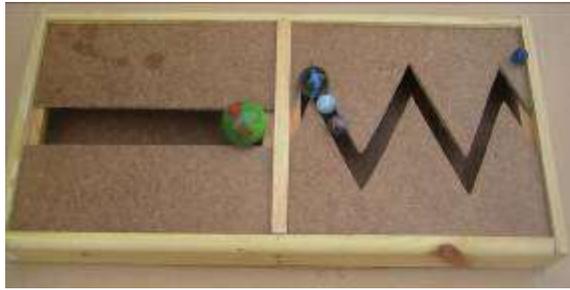
*A coconut shell is sawn in half and then hinged together. The elastic band on the outside represents the ligament pulling the valves open. Strings, representing the muscles are attached to the inside of one valve and pass through holes in the other valve. Pulling the strings closes the shell, when they are released the elastic bands open the valves.*



*Ventral margin 1*

D

*To show how a corrugated ventral margin prevents sideway movement and thus make the shell less susceptible to predators Two boards are cut in half, one with a straight cut and the other along a zigzag line. The boards are then put on a box which allows them to open a fixed amount. Students can see that although the opening is the same the gaps in the zigzag one are smaller. They then play with a marble which will fall though the straight gap but not the zigzag. See also anterior margin under Brachiopods.*



### **Ventral margin 2**

**D E**

Show students a photo of zigzag junction in a road where it goes over a bridge. It is there to allow for thermal expansion. Students are asked to give the advantages of a zigzag junction compared with a straight one. This should guide them into the advantages of a shell having a corrugated ventral margin.

### **Crenulation**

**E P E 60min**

The purpose of this activity is to determine the effect of crenulation on the strength of shells. Students test the strength of an A4 sheet of paper folded into zigzags to see which angle and size is strongest.



### **Bivalves and Brachiopods**

**A P 5 min**

Provide students with a box of about twenty Bivalves and Brachiopods. The students must separate them.

### **Mussels 1**

**P 5 min**

Students are shown a picture of mussels on rocks just above the sea. They must explain how they survive with such a thin shell and why does it have the shape it does and what purpose is the byssus.

### **Mussels 2**

**D**

A mussel shell (both valves) is filled with Polyfilla and has a piece of string where the byssus should be. It is attached to the middle of a piece of board.

*It is used to demonstrate that the mussel will always be oriented so that it offers the least resistance to the water what ever direction the water comes from.*



*Infaunal/epifaunal*

*A P 5 min*

*A box of 10 bivalves which students must separate into infaunal and epifaunal on the basis of gapes and palial sinuses.*

*Matching card game*

*A P 10 min*

*Students are given packs with yellow cards with the bivalve name, white cards with a description of the bivalve and red cards with the mode of life. They must match them up.*

*Measuring bivalves*

*A P F 60 min*

*Students make deductions about an assemblage of bivalves by measuring them and then using statistics to deduce whether it is a life or death assemblage and about the environment they were living in.*

*Orientation of Solen*

*A P F 30 min*

*Students measure the orientation of the valves of Solen relative to the orientation of ripple marks to enable them to draw conclusions about the relationship of wave direction and shell orientation.*

