

SHAKING SHELLS

Purpose

To determine which shells are the most resistant to attrition and thus to help to explain the proportions of shells preserved in bioclastic and shelly limestones.

Instructions

Activity I Attrition without the help of stones

- 1. Select two shells of each type and then weigh each pair of shells.*
- 2. Place shells in the cardboard tube and shake for 1 minute. You must hold both ends of the tube.*
- 3. Remove the shells but discard all pieces less than 5mm long. Weigh all the whole or broken shells of each type separately.*
- 4. Replace all the shells and pieces bigger than 5mm back in the tube and shake them for another minute.*
- 5. Repeat this five times.*
- 6. Plot the percentage of the original weight of each type of shell left after each throw against the number of the throw.*

Activity II Attrition with the help of a stone

- 1. Place the small stone or marble in with a new set of shells and repeat the instructions for activity I.*
- 2. Compare the results.*

Teacher's Section

Requirements

Four shells of each of the following: cockle, mussel, periwinkle, oyster, and limpet Many other types of shells would be suitable.

Section of a cardboard tube 20cm long by 10cm diameter with plastic ends or a plastic bottle with a large screw lid.

Small stone or marble 10mm or less in diameter.

Timer or clock

Balance.

Notes

Often many of the shells remain whole during activity I. The activities are noisy and may be dusty.

Further work should include looking at the relative abundance of different shell types in modern and ancient beach deposits and commenting on them in light of their findings from this experiment.

Results

Limpets and periwinkles are the most resistant to damage, mussels break most easily.

Time

30 minutes

Credits This experiment is modified from P Kennet and C Ross in Palaeoecology Longman 1983