SCREE AND BEACH PEBBLES

Purpose

To determine how pebbles change shape as they move from outcrop to beach.

Activity.

1. Record the lithology of the pebbles.

2. Make the following measurements on ten scree pebbles

3. Use the callipers or pebbleometer to measure the long, intermediate and short axes of the pebble. The three axes must be at right angles to each other.

4. Use the roundness chart to give the pebble a roundness value.

5. Record your measurements on the table.

6. Choose another pebble and make the same measurements.

7. Repeat the same instructions for the beach pebbles

8. Once you have measured all the pebbles calculate for each pebble
   the intermediate / long axes
   the short / intermediate axes
   and plot these on the Zingg chart using a different colour for each environment.

9. Work out the average roundness for each environment.

10. Write down your conclusions

Teacher's Section

Requirements

You will need to collect pebbles of the same rock type from a scree slope and a nearby beach. I have used slate pebbles collected from near Lochranza in the Isle of Arran, Scotland.

Callipers or pebbleometer (making equipment)

Roundness chart

Zingg chart

Notes

It is easiest and quickest if you have a spreadsheet on a computer already set up to do the calculations. This is best done if students have collected their own samples.

Time

60 minutes for 30 pebbles

MEASURING SPHERICITY

Purpose
To measure the sphericity of a variety of pebble shapes.

Activity
Use the calipers to measure the longest, intermediate and shortest diameter of at least ten pebbles with a variety of shapes. Your data should be recorded in columns like this:

letter	long L	intermediate I	short S	intermediate / long	short / intermediate	shape

Now plot the data on the graph below and fill in the shape column.

Zingg's shape classification

I/L=2/3

disc	spheroid
blade	roller

S/I=2/3