

## **PEBBLE SHAPES IN HOMOGENOUS ROCKS**

### **Purpose**

*Homogenous rocks would be expected to produce spherical pebbles. This activity is to determine the average shape of a pebble made of a homogenous rock with no bedding or joints and to explain why spherical pebbles are so rare.*

### **Activity**

- 1. Take on pebble and note its number.*
- 2. 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.*
- 3. Record your measurements in a table.*
- 4. Choose another pebble and make the same measurements.*
- 5. Once you have measured all the pebbles calculate the intermediate / long and the short / intermediate for each pebble and plot these on the Zingg chart using a different symbol or colour for each rock type.*
- 6. Write down your conclusions.*

## ***Teacher's Section***

### ***Requirements***

*You will need to collect at least 25 pebbles of either flint or granite..*

*The pebbles should be numbered. Callipers or pebbleometer (see making equipment)*

*Zingg chart*

### ***Notes***

*It is easiest and quickest if you have a spreadsheet on a computer already set*

*up to do the calculations. A larger number of pebbles is better but students should only be asked to measure a maximum of 25, more than that they get slapdash.*

### ***Results***

*Probably there are so few spherical pebbles because once a pebble has a larger face it will tend to rest on that and the movement of the waves will drag it back and forth on that face and thus further decrease its sphericity.*

### ***Time***

*60 minutes for 25 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	<u>intermediate</u> long	<u>short</u> 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

