Pebbles, Conglomerates and breccias

Sorting and describing pebbles   A P 10 min
Students are provided with 15 or so different pebbles. They must sort them in to groups but must be able to say what criteria they have used. Colour, colour pattern, shape, size, grain size are all possible criteria

Scree, and beach pebbles   E P *F* 1 hour
Students compare the roundness and sphericity of pebbles of the same rock type collected from these environments to see how transport has changed their shape and roundness.

Pebbles on a beach   E P *F* 45 min
Students compare the roundness and shape of pebbles of different lithologies collected randomly from a beach.

Pebble shapes in homogenous rocks   E P *F* 30 min
Students measure the sphericity of 25 granite or flint pebbles and plot the results on a Zingg chart. They must explain why spherical pebbles are so rare in these homogenous and isotropic rocks.

Describing conglomerates and breccias   A P *F* 15 min per sample
Students are provided with slices of a variety of conglomerates and breccias and they must:
1) measure a number of clasts to work out average size
2) point count (press F for method) to work out the percentage of clasts and matrix.
3) use a chart to determine average roundness and sphericity
4) measure the median diameter of the largest pebble and then use Hjustrom's chart to determine water speed.
5) Determine the composition of the clasts and the percentages of each type.

The actual sizes of pebbles   E P *F* 60 min
To determine how the sizes of pebbles seen in section on a flat surface relate to their actual sizes.
a) Using apples. The apple resents a pebble randomly sliced. Apples are sliced and the diameters of the slices compared. 15 min

b) Using lined paper. Students draw a 15cm diameter circle representing the pebble, and measure the lengths of the lines within the circle. 30 min.

c) Use the information found from a or b to calculate the real average size of pebbles in rock slab or photo. 30 min