

The pebble measurements essay sample

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Another method of data collection to be used for this investigation will take the form of pebble measurements. This will be carried out on the field trip to Newhaven and Seaford. This is an important part of the research to discover what type of erosion processes are taking place along the coast. Waves approach the coastline at an angle. Sand grains and pebbles always roll back down the slope at right angles to the coastline because it is the steepest gradient. The action of the waves cause an erosion process known as attrition. This is when particles carried by the waves collide with each other and the rock face, they grind against each other and are reduced in size. Pebbles, and even larger boulders are worn down into smaller and smoother pebbles. They become shingle and finally, sand-sized particles which are deposited on the beaches.

Pebble measurements are used to detect the degree of attrition, also the direction of longshore drift. If longshore drift is acting from west to east, the pebbles should be smaller as they have travelled a long distance grinding each other down in the waves. The results from the pebble measurement will confirm whether the harbour arm was built in the right place, and that it is effectively slowing down longshore drift acting from west to east along the Channel coast.

The method for carrying out pebble measurements is a fairly straightforward and simple process. The start point will be on the western side of the harbour arm. At the water's edge, next to the harbour arm, a pebble is picked up at random. The length of the pebble is recorded before the pebble is replaced. Another pebble is picked at random and measured twenty-five paces west from the last point. Along the water's edge this process is

repeated again and again, until the entire length of the beach has been covered.

The data recorded concerning pebble measurements will be transferred to graph form so that the size of the pebbles and degree of attrition, can be identified. The graph will show the length of each pebble picked a random and measured each twenty-five paces of the beach.

The expectation is that the size of the pebbles will increase further away from the harbour arm, because they have travelled less distance than the pebbles found nearer the harbour arm. Pebbles which have travelled a smaller distance will be larger because they have been subject to less attrition.

Pebbles chosen between the harbour arm and 200 paces along the beach measured an average of 6. 1cm, from 200 paces to 400 paces the average measurement was 6. 45cm, and from 400 paces to 600 paces the average measurement was 7. 325cm.

The results show what was expected. The pebbles closer to the harbour arm were, on average, smaller and therefore subject to more attrition. This is the process by which particles, carried by the waves, collide and grind against each other. Pebbles are worn down and reduced in size. The pebbles closer to the harbour arm had travelled further and had been subject to more attrition. The pebble size increased further away from the harbour arm, because they had travelled a lesser distance and had not been subject to as much attrition.