Physical – Sea Palling

Hypothesis: : The hard coastal engineering at Sea Palling is effective

Why?	Reason
Location	Sea Palling is a heavily protected area of the Norfolk coastline using a range of hard engineering management techniques.
Physical and Human geography interaction	Physical coastal processes Vs human management of the environment.
Link to the GCSE course	"The coast and benefits of management strategies" section 3.1.3.2.

Potential Risks with the environment		
Sea	Hazard: Risk of drowning	Managed by: Not allowed within 10m of the sea. Teacher supervision
Trips and falls	Hazard: Slippery rocks	Managed By: Not climbing on the rocks
	Broken sea defences	Walking round sea defences observing hazards
Ranging poles	Hazard Sharp pointed end could cause injury	Managed by: Pupils carried the poles with the point downwards and told not to throw them like a javelin!

Types of Data and Sampling

Primary Data - data we have collected ourselves
Secondary Data – data someone else has collected
Qualitative Data - data that is descriptive
Quantitative Data – data that is numerical
Systematic sampling – where you sample at regular intervals.
Random sampling – No set sampling method, pupil judgement.

Method: Bi-polar analysis of Defences

This was sampled to identify your own opinions of the defences at Sea Palling

What is the sampling method? Why have we used this method? The sampling technique used was systematic, as we were using a scale to rank the defences.

How have you collected the method?
- We ranked each defence on: Life span, good for the environment, effective against flooding, effective against erosion and sustainability.
- Each area was ranked out of 5(best) 1 (worst)

JUSTIFICATION –Why did you choose this method?
- This allows me to rank the methods oh hard engineering and compare them against each other and our own opinions.

Unit 3a

AQA■ **Field Work Element**

Method: Longshore Drift experiment

This was sampled to identify the speed of Longshore drift and direction.

What is the sampling method? Why have we used this method? The sampling technique used was systematic, to assess the direction and speed of longshore drift.

How have we collected the method ?
- We laid out a tape measure to a length of 20 metres.
- we released an orange at 10m and timed how long it would take for the orange to travel either to 0m or 20m. Then S=D/T to gain the speed.

JUSTIFICATION –Why did you choose this method?
-The defences at Sea Palling should slow the rate of longshore drift to encourage deposition and therefore reduce/ reverse erosion.

Method: Beach profile data

This was sampled to see change in the size of the beach.

What is the sampling method? Why have we used this method? The sampling method along the beach was systematic. We chose to sample two profiles in a bay and the tombolo where deposition will clearly have happened.

How have we collected the method ?
- We collected the data by first establish zero degrees. Two people (one taller than the other) stood apart. One person looked through the clinometer and lined it up until 0° is showing and find the place on the person's body it aligns to.
- On the beach, along the transect, the person with the clinometer would stand at 1 ranging pole and the other person would stand with another 10m further up the beach. The angle on the clinometer would then be measured. The length of the fact would then be recorded.

JUSTIFICATION –Why did you choose this method?
- This will help show if the beach is steep or flat and whether it is wide or thin. If it is wider and steeper this suggests the management is effective because it has allowed sediment to deposit rather than be eroded and this has produced a bigger beach.

Beach Profiles - Sea Palling

Bay (between Offshore - reefs)   Tombolo (behind Offshore- reef)
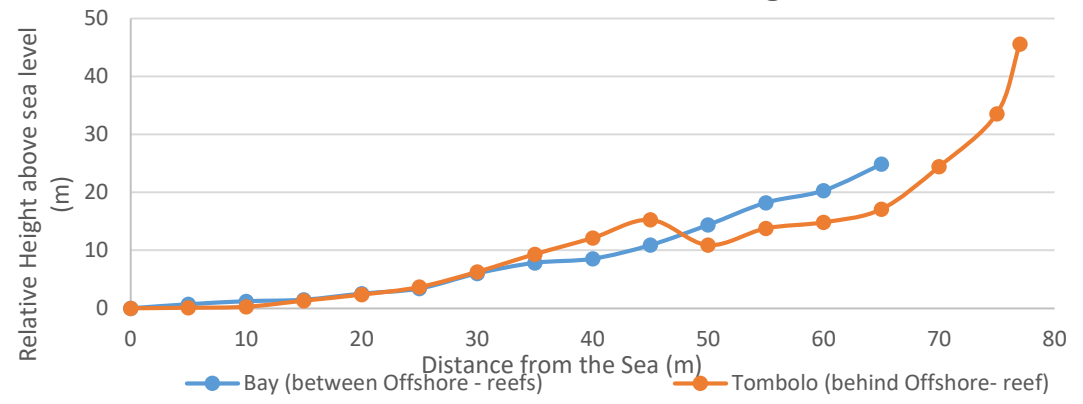
Describe the Graph	Why this method of presentation
The graph shows that the beach profile is longer and there is more volume of sand behind the offshore reef compared to the bay between the reefs. There is clearly deposition at the back of the beach behind the tombolo.	Shows the comparison between the two profiles which can be compared against height and distance.

Bi-Polar Analysis of the Sea Defences at Sea Palling

Offshore-Reef   Rip-rap (rock Armour)   Curved Sea Wall   Flood Gate
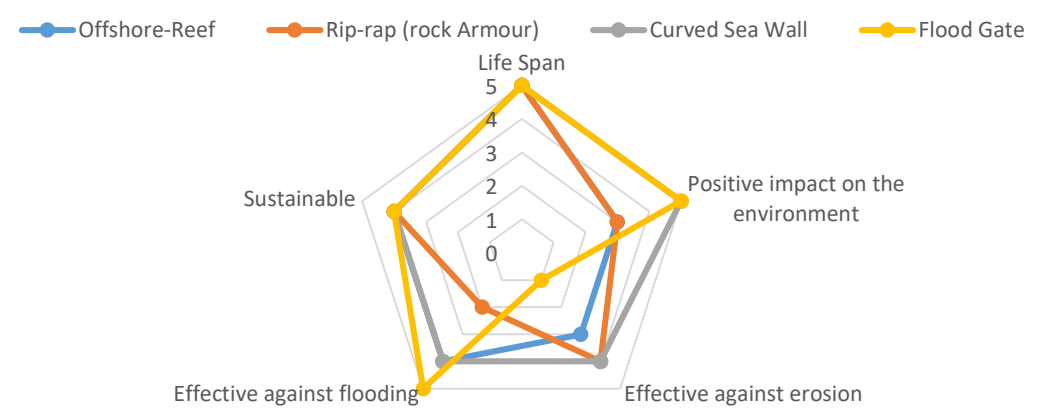
Describe the Graph	Why this method of presentation
The graph shows my opinions of the defences at Sea Palling, The Curved Sea wall scores the all round highest and the rip rap scores the all round lowest.	It is easy to compare all the defences in one graph and visually you can compare them.

Hypothesis: **The hard coastal engineering at Sea Palling is effective:**

I think the hard engineering is effective for the following reasons:
1. The Beach profiles clearly show that the beach is 10m longer behind the tombolo and 20m higher meaning that deposition has occurred behind the offshore reefs.
2. In my bi-polar analysis you can see that the curved seawall scored a total of 22 or out 25, this hard engineering method clearly protects the beach against erosion, flooding whilst also lasting a long time.

Method: Bi-polar analysis of Defences

Drawbacks: My own opinion and these would be different to someone else. This data was only collected at one site (another seawall may score differently)

Improvements: Visit other sites, ask other peoples opinions and take an average.

Method: Longshore Drift experiment

Drawbacks: Only completed once at one location, distance into the swash zone could have effected the time. The bays are sheltered

Improvements: Compare the data to another beach with/ without defences. Complete more than one experiment.

Method: Beach profile data

Drawbacks: Accuracy of the readings, might not be going in a straight line..

Improvements: Electronic data readings, complete more profiles behind the other offshore reefs.