KS4

Welcome to the Isle of Wight Coastal Trail for Geography at KS4!

The resources cover six different locations around the island, and allow students to study a variety of different human and physical geography topics. All of the resources are closely linked to the different specifications for GCSE Geography. The following notes give an overview of each location and guidance to accompany the resource for that location.

Location		Curriculum Content / Skills	Number
VENTNOR		• *Processes of long-shore drift and the development of beaches* • *Microclimates* • *Making observations of, and categorising, human activities and land uses*	107 581
HANOVER POINT		• *Basic geology and how this affects rates of erosion* • *How aspect influences rates of erosion* • *The physical and human characteristics of the Bay* • *The formation and characteristics of a wave-cut platform at Hanover Point*	107 582
FRESHWATER BAY / TENNYSON DOWN		• *Processes of erosion and the formation of headlands, bays and stacks* • *Examining the need for coastal protection at Freshwater Bay by using secondary information from the SMP* • *The strategies in place to protect the Bay from erosion / flooding*	107 583
ALUM BAY/ THE NEEDLES		• *The geology of Alum Bay and the role of folding (Alpine Orogeny) in the creation of the cliff structure* • *The formation of stacks and likely changes to the Needles in the future*	107 584
HURST SPIT		• *The process of long-shore drift* • *The formation and development of a spit, and the main characteristics of a spit* • *Salt marsh formation and development (Keyhaven Marshes), and the key characteristics of a saltmarsh ecosystem*	107 585
COWES AND EAST COWES		• *Human activities/land use in Cowes and its function(s)* • *Assessing the environmental quality of Cowes/East Cowes* • *The urban regeneration project for East Cowes*	107 586

Ventnor

Ventnor, located on the south of the island, is a popular tourist destination. The resource is focused on Ventnor as a case study of coastal protection/management. Students firstly survey the variety of human activities and land-uses along the seafront. This can be done by walking from the car park at the eastern end towards the Spyglass at the western end. Using these observations, students then complete a table to explain why these human features are important and, therefore, why there is a need for coastal protection in this location. Students will then make observations of the coastal defences in place, and consider how they are helping to protect the human 'assets' that they have identified. The SMP strategy for this stretch of coastline is to 'hold the line' and students should be encouraged to consider the reasons for this policy, i.e. the value of the assets that are being protected. The full SMP document can be viewed at http://www.coastalwight.gov.uk

Compton Bay / Hanover Point

Compton Bay lies on the west coast of the Isle of Wight. There is a large car Park at the cliff top, and access via steps to the beach. Low tide is the best time to visit, both in terms of space on the beach, and also to view the exposed wave cut platform. This stretch of coastline is extremely active with high rates of erosion. The geology affects this and students will learn about the rock types here, and how this affects rates of erosion here. They will also learn the meaning of the term 'aspect' and how aspect here influences rates of erosion. Using this information, they should write detailed annotations around the photograph in the resource. They can also label the key human and physical characteristics of Compton Bay in the photo. They then look in more detail at the characteristics of the cliffs, and how the processes of weathering affect them. In a small group, or as a class, they should discuss the different types of weathering and any evidence they can see of them taking place on the cliff. Some processes aren't 'visible' but can still be discussed! Mass movements (rock falls, rotational sliding and mudslides) are described and students should be able to see evidence of these along the cliffs at Compton Bay. Walking east, Hanover Point can be reached. At low tide, the wave cut platform can be seen and its formation is explained in the resource. There is a space for students to make a sketch of the cliffs and wave cut platform, and they should be encouraged to label/annotate it to summarise what they have learnt. Although not in the resource, it would be possible to use this location to compare coastal management with Ventnor and/or Freshwater Bay. The 'Back of the Wight' is a very rural area and, as such, the SMP policy for this stretch is to 'do nothing'. Largely undeveloped, and with high rates of erosion, little is done here to manage the coastline (except for maintaining access points e.g. the steps at Compton Bay are maintained and gabions protect their base). Students can consider the variation in the 'need' for coastal protection in different locations, in order to help them appreciate why different policies exist in different locations.

Freshwater Bay / Tennyson Down

Freshwater Bay is a small cove on the south coast of the Isle of Wight. This resource examines the human and physical geography of this location. A 'starter activity' gets them thinking by looking at a set of images and an OS map extract of the Bay and labelling the key physical and human features that they can see. The formation of headlands and bays is then described and illustrated in a diagram, and an activity prompts students to define the four types of erosion as key processes in the formation of the physical geography of the bay. The role of sea level rise and the river in the formation of the bay is also explained. There are two good, and clearly visible, stacks at freshwater; Mermaid and Stag Rocks. Their formation is explained in the resource. Students could then find a good vantage point to sit and draw a field sketch of the bay and label/annotate it to summarise what they have learnt about its physical geography, before moving on. The final section of the resource looks at the vulnerability of this [illegible] has been adapted from the SMP which provides evidence of these hazards (erosion, flooding) and damage to properties if no defences were in place. This should get students to justify the need for coastal protection in this location. The full SMP document can be viewed here http://www.coastalwight.gov.uk/smp/FINAL_SMP_for_web/pdf_MainDoc/Chapter4/Chapter4_PDZ6_Dec15_Final.pdf

Alum Bay & The Needles

The multi-coloured cliffs of Alum Bay are well-known and are one of the most-visited places on the Island. The theme park above provides extensive parking and other facilities and attractions if desired. One can access the beach either by walking, or by taking the cable-car, and students will be able to explore the cliffs and carry out the activities here. The resource provides students with information about the geology in this part of the island, and explains both how the rocks were formed and how earth movements have folded them into near-vertical strata.

Labelling and sentence-matching activities help students to consolidate what they have learnt. It is expected that students will know how stacks are formed, especially if they have already been to Freshwater and carried out the activities there! The Needles Stacks can be viewed from the beach at Alum Bay or, alternatively, it is possible to walk or take a bus up to the Needles Old Battery where there is a viewpoint to see them closer. The resource requires students to summarise how stacks are formed and, based on this understanding, they can make predictions about how this landmark may change in the future.

Hurst Spit

At Hurst, a sudden change in the direction of the coast to the south-east of Milford-on-Sea has allowed long-shore drift to build up a 2km long shingle spit, with a recurved end and Keyhaven saltmarshes has developed in the sheltered water behind. It makes an excellent location to study spit development and saltmarsh ecosystems.

continued overleaf...

There are ferries from Yarmouth, which leave from beside the Wightlink slipway. Further information about times and fares can be found at http://www.hurstcastle.co.uk/ferries/.

The resource starts by going over the process of long-shore drift, which is explained, before students are required to add a set of labels to the correct place in a diagram to summarise the process. The formation and development of a spit, with specific information relating to Hurst Spit, is then provided, which students should read through carefully. Then, using what they have learnt, and by making observations of the spit, they should draw and label/annotate a field sketch of the spit in the frame provided. There is a higher ridge of land, close to the castle where students should be able to get a good view of the length of the spit, towards the mainland and of the saltmarsh behind. The final page provides information about the formation of a saltmarsh, going through the successional stages and describing the changes in the environmental conditions and the vegetation that take place [illegible] understand them. Exploring the edges of the saltmarsh on the leeward side of the spit will allow students to observe some of the key characteristics of the marsh. Some of the key features are shown in photographs in the resource, but an identification guide could be used, such as those produced by the FSC (http://www.field-studies-council.org/publications/fold-out-charts.aspx) to allow students to identify some of the species present and this will enrich the experience.

It is possible to develop this further into a detailed case study post-visit, and there is a great deal of very useful information about the marshes in this document: http://www.newforest.gov.uk/CHttpHandler.ashx?id=23565&p=0.

Cowes and East Cowes

East and [West] Cowes are separated by the mouth of the River Medina which flows from Newport, the main town on the Isle of Wight. Cowes is linked to the smaller town of East Cowes on the opposite side of the river by the 'floating bridge' chain ferry. This resource starts in West Cowes and then moves across the river into East Cowes. There is some background information to read initially, followed by a land-use survey in Cowes. Students should walk from the Royal Yacht Squadron (near the guns!) to the chain ferry and mark all human activities / land-uses that they can observe onto their map. Using this information, they should then be able to summarise the key land-use patterns, and what this indicates about the function of the settlement.

The next section involves students carrying out an Environmental Quality Assessment for three representative locations in Cowes, and then travelling over the river and doing the same in East Cowes. They will then take an average for each location to compare. It will be possible to graphically represent their data at a later stage if desired. They should notice a difference in the character of the two towns, and this then leads onto the planned regeneration project for East Cowes. There is some information about this project and some of its main proposals/ aims are covered in a sentence-matching activity. However, there is a great deal of further information available, and students could use the websites suggested in the resource to find out more about the plans. They could then consider the reasons for the project and what benefits it might bring to the town in the future. It could then be used as an urban regeneration case study.